

Government of India  
Ministry of Communications

Report of the  
Air Transport Inquiry Committee  
1950

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the periodicity of air-frame overhaul. The Committee suggests, however, that unless and until such changes assume sufficient magnitude, say, such as would change the overall total by 2½ per cent., minor adjustments of standard cost totals should not be contemplated. The Committee feels it desirable that the Industry should have a fixed target of expenditure at which to aim and that such target having once been determined, as has been done by the Committee, it should, as far as possible, remain stable for a period long enough to provide a reasonable opportunity of measuring the ability of various sections of the Industry to achieve working results within the set limit. (PARAGRAPHS 173—176).

(86) The Committee's standard cost figures do not include any allowance for profit. In other words, if passenger fares, freight rates and mail rates were worked out so as to produce at an assumed reasonable load factor an income per mile equal to the cost arrived at in the charts, an operator would just break even on his overall results. (PARAGRAPH 178).

(87) Typical results drawn from the standard cost charts relating to the types of aircraft now in service on the internal routes when operated on typical stage lengths have been tabulated. For comparative purposes, a uniform load factor of 65 per cent. has been assumed. (PARAGRAPH 179).

(88) If load factors of, say, 75 per cent. or higher are consistently maintained on a particular route, it is a clear indication that a proportion of the flights are actually departing completely full and that in all probability traffic is being turned away on those sections. When this state of affairs is reached, the only way in which additional traffic can be catered for is by providing additional frequencies of schedules. Operation of an additional frequency lowers the average load factor at least temporarily well below 65 per cent., although if the operator's judgment is proved correct it will be gradually built up again to a remunerative level. It is only by the addition of frequencies that the desired and expected growth of air transport can be achieved, and the Committee feels that it will be unrealistic to consider the cost results and corresponding overall tariff levels on the estimation of an average load factor appreciably higher than 65 per cent., although in the case of particular routes, where a very high load factor has been achieved and maintained, the assumption of a load factor higher than 65 per cent. would not be unjustified. (PARAGRAPH 179).

(89) The Dakota and the Viking when employed on stage distances typical of their actual application show very similar equivalent costs per seat-mile ranging between approximately 3½ and 3¾ annas depending on utilization. If either aircraft is used on a stage length appreciably beyond the optimum range for the type, a drop in pay load raises the specific cost to a marked degree. For instance, the Viking operating Bombay—Calcutta non-stop (1036 miles) at 65 per cent. load factor shows an equivalent cost per seat-mile of 4·5 annas. Similarly, the Dakota operating Bombay—Madras non-stop (641 miles) shows at 65 per cent. load factor an equivalent cost per seat-mile of 3·96 annas. (PARAGRAPH 180).

(90) Even at its optimum stage distance, the SO-95 shows a cost level per seat-mile of 5 to 5½ annas, i.e., more than 50 per cent. in excess of the other two types. This illustrates the extreme difficulty of obtaining profitable operations with a small type of aircraft at least within the existing low rate structure. (PARAGRAPH 180).

(91) In India, where fuel is extremely costly (even kerosene being likely to follow the pattern of petrol in this regard) and labour is relatively less expensive and where the volume of traffic does not appear likely to be enough for greatly increased frequencies of schedules, the conditions cannot be said to favour the introduction of the gas turbine. The Committee has, therefore, not made any estimate of the economics of gas turbine or pure jet types of aircraft under Indian conditions. (PARAGRAPH 181).

(92) Typical comparative results of the costs of operation of the Bristol New Type 170, the Airspeed Ambassador and the S.A.A.B. Scandia, have been tabulated. At 65 per cent. load factor, the Bristol New Type shows a result almost identical with that for the Dakota. On a 600 mile range, the Ambassador at 1500 hours utilization shows a result 11 per cent. better than the Viking on the same stage, and at 2000 hours utilization, the advantage is increased to 16 per cent. in favour of the Ambassador. At 300 miles the Scandia at 1500 hours utilization is about  $3\frac{1}{2}$  per cent. more economical than the Dakota and at 2000 hours utilization the improvement rises to 9 per cent. in favour of Scandia. These results show that in spite of their high purchase price, more modern aircraft of efficient design could probably be operated with an economy competitive with that of the Dakota and the Viking, the chief obstacle to their adoption being the heavy capital outlay involved. It is, however, clear that the cost of operation of such types is very sensitive to the degree of utilization achieved and that, unless high utilization could be obtained their operation would be uneconomic. The problem then is one of deciding whether the traffic potential in India is such that a high degree of utilization with a high capacity aircraft can actually be achieved without having to operate at unremuneratively low load factor. (PARAGRAPHS 183—186).

(93) None of the three new types of aircraft examined shows costs as low as the 50 seat or 61 seat Skymaster. In the case of the 61 seat Skymaster at 2000 hours utilization, the equivalent cost per seat-mile is 25 per cent. below that of the Viking, viz., 2-4 annas per mile (without allowance for profit). The Committee is of the opinion that it is in the effective application of this aircraft that the most practical possibility of economic achievement of passenger fare levels of the order of  $2\frac{1}{2}$  annas a mile lies. This would necessitate the availability of 40 passengers per trip as against 16 to 20 at present forming the average load travelling by Dakota or Viking. The difficulty then is with regard to the restricted traffic potential at present available. (PARAGRAPH 187).

(94) If all air transport operations in India were unified under one management, the cost of operation would be reduced by about  $8\frac{1}{2}$  per cent. due to (a) reduction of costs under the items servicing, overhaul, administration, office rents, operations on-costs and training, accounts and audit, passenger services and traffic sales and agencies; and (b) reduction in cost consequent on increased utilization, which would be possible as there would be full freedom to develop operational route plans for the airline net-work as a whole. (PARAGRAPH 188).

(95) Under unified operation, there would be the possibility of making effective use of the Skymasters on heavy traffic routes, particularly the Bombay-Delhi, Bombay-Calcutta and Delhi-Calcutta routes. The use of Skymaster equipment with an interior layout of 61 seats would bring about an appreciable reduction in operating cost per ton mile and hence in the level of economic fares. The success of this operation would depend on the availability of sufficient traffic to maintain reasonable load factors. It is not clear that such traffic demand exists at the present time. The Committee thinks, however, that it should be possible within the near future to develop more traffic on the routes mentioned and, if a unified system of operation is adopted, the situation should be kept under constant review in order to use the Skymaster on the three routes referred to. (PARAGRAPH 190).

#### CHAPTER 6

#### Reorganisation of the Air Transport Industry

(96) The present pattern of operations, so far as term licence-holders are concerned, has been stabilised for ten years. The Committee has to accept this position and suggest possible ways of reorganization of the Industry for the next five years on the footing that the six term licence-holders will have the right to operate their routes unless their number is reduced by voluntary merger. (PARAGRAPHS 195 AND 196).





## GLOSSARY OF ABBREVIATIONS

A.T.L.B.	Air Transport Licensing Board.
A.S.I.	Air Services of India.
A.I.I.	Air-India International.
B.O.A.C.	British Overseas Airways Corporation.
C.A.B.	Civil Aeronautics Board (U.S.A.).
C.A.T.C.	Civil Aviation Training Centre.
C. of A.	Certificate of Airworthiness.
C.T.M.	Capacity ton-miles.
D.G.C.A.	Director General of Civil Aviation.
D.G.P. & T.	Director General, Posts and Telegraphs.
H.A.I.	Hindustan Aircraft Limited.
I.C.A.O.	International Civil Aviation Organisation.
I.N.A.	Indian National Airways.
I.O.A.L.	Indian Overseas Airlines.
m.p.h.	Miles per hour.
P.A.A.	Pan American Airways.
T.A.A.	Trans-Australia Airlines.

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# **PART I**



## PART I

### CHAPTER 1

#### Introductory

**Appointment of Committee and Terms of Reference.**—The Air Transport Inquiry Committee was appointed by the Government of India, Ministry of Communications, Resolution No. 1-A/27-49, dated (8th February 1950), which reads as follows:—

“After the end of the War, there has been rapid expansion of civil air transport services in India. While there has been concurrent growth in the amount of traffic carried by air, in passengers, freight and mail, the Government of India have noted with some concern that the (air transport industry has not found stability.) The importance of a well-organised system of air transport in the communications network of any modern State is too well understood to need special emphasis. The Government of India consider that measures should now be taken to ensure—

- (a) that the operation of air services is placed on a firm economic footing; and
- (b) that the future development of air transport proceeds on sound and healthy lines.”

For this purpose, they have decided to set up a Committee (to make a review of the present state of air transport in India and advise Government on the best lines on which future development might be organised.) The Committee will be constituted as follows:—

Mr. Justice Rajadhyaksha	Judge of the Bombay High Court.	Chairman.
Mr. H. L. Dey	Member, Board, Tariff	} Members.
Mr. R. Narayanaswami	Joint Secretary to the Govern- ment of India, Ministry of Finance.	

A representative of the Director General of Civil Aviation and one of the Indian Air Force will be attached to the Committee as Advisers. Efforts are also being made to obtain the services of a foreign expert with wide experience of technical, financial and traffic organisation in air transport as a third Adviser to the Committee.

Mr. K. V. Venkatachalam, Deputy Secretary to the Government of India Ministry of Communications, will be the Secretary of the Committee.

‘2. The detailed terms of reference of the Committee will be as follows:—

To enquire into and report upon and to make recommendations in regard to the following matters, viz:—

- (a) the present state of the air transport industry in India in regard to both internal and external services;

- (b) the short-comings, if any, in the organisation and management of the industry as a whole or in regard to any individual company or companies;
- (c) the major difficulties and defects in the industry as at present constituted;
- (d) the manner in which Indian air services, internal and external, could best be operated with the maximum economy, having due regard to all relevant factors, including passenger fares and freight and mail rates, during the 5 years 1950—54, providing also for adequate development of the air services and, for such purpose,—
- (1) the reasonable needs of the industry of assistance from the State and the manner and extent of such assistance and cost thereof to the State,
- (2) regulation of the industry and control over its management by the State,
- (3) any necessary re-organisation of the industry;
- (e) the desirability, practicability and economic consequences of the operation of the said air services under State ownership and management, either direct or through a body corporate, and the cost of acquisition of such ownership."

The Government of India appointed Mr. D. Chakraverti, Deputy Director General of Civil Aviation, as Adviser to the Committee representing the Director General of Civil Aviation and Air Commodore R. H. D. Singh, Air Officer Commanding, Training Command, Bangalore, as Adviser representing the Indian Air Force. The Government of India also obtained and made available to the Committee the services of Mr. J. L. Watkins, B.E. (Adel.), D.I.C. (London), A.F.R.Ae.S., M. Inst. T., A.M.I.E. (Aust.), Superintendent of Organisation and Technical Services, Trans-Australia Airlines, Commonwealth of Australia, as Technical Adviser to the Committee.

## 2. Programme of inquiry.—The Committee held meetings as follows:—

First meeting . . .	...	1st March 1950.
Second series of meetings	...	23rd March to 3rd April 1950.
Third meeting . . .	...	27th April 1950.
Fourth series of meetings	...	12th May to 7th June 1950.
Fifth series of meetings	...	13th June to 6th July 1950.
Sixth series of meetings	...	11th July to 29th August 1950

The Committee had its headquarters in Bombay and all the meetings were held there except during the period from 12th May to 7th June when the Committee sat in Bangalore. At its first meeting held on 1st March 1950, the Committee drew up a press communique drawing attention to the constitution of the Committee and its terms of reference and inviting airline operators and other bodies and persons interested to submit memoranda to the Committee. A list of the bodies and persons who submitted Memoranda in response to this communique is given at Appendix I. During the second series of meetings

the Committee drew up a comprehensive Questionnaire covering all the aspects of its terms of reference. A copy of the Questionnaire is appended to this Report (Appendix II). At its next meeting held on 27th April, the Committee considered the different aspects of the subject of the inquiry.

**3. Issue of Questionnaire.**—1000 copies of the Questionnaire were printed of which more than 700 were circulated to the air transport companies, the Director General of Civil Aviation, the Air Transport Licensing Board, Flying Clubs, Governments of the States, Ministries of the Government of India concerned, Members of Parliament, Chambers of Commerce, Trades Associations, Oil Companies, aircraft dealers and other bodies and persons interested in the subject of the inquiry, *vide* list in Appendix III. The Questionnaire was issued on 8th April, and 1st May 1950 was fixed as the last date for the submission of replies. On representation from the companies that the time given for replies was insufficient, the last date was subsequently extended to 15th May 1950. Though a few of the replies arrived promptly, many did not reach the Committee till even the end of May. A few replies came even as late as the middle of July. A list of the bodies and persons who sent replies to the Questionnaire is appended (Appendix IV). The Committee regrets to state that its expectations that it would be favoured with the views and advice of the Members of Parliament on the general issues such as Government assistance to the operating companies and the acquisition and operation of the air transport services by the State, which were included in its terms of reference, were not fulfilled. Actually, only one Member of Parliament replied to the Questionnaire.

**4. Inspections and discussions at Bangalore.**—During its sittings in Bangalore, the Committee was almost wholly engaged in the sorting out and examination of the replies to the Questionnaire. While in Bangalore, the Committee visited the Hindustan Aircraft Factory and the Aeronautical Department of the Indian Institute of Science. It had more than one discussion with the representatives of Hindustan Aircraft Limited in regard to their programme of manufacture of aircraft, the repair and overhaul work they were doing for the civil air transport companies and the charges levied by them for that purpose. The Committee also took an opportunity to visit the Indian Air Force Training Centre at Tambaram near Madras.

**5. Oral evidence.**—The Committee resumed work in Bombay on 13th June and completed the examination of the material supplied in reply to the Questionnaire on 18th June. From 19th June to 24th July, the Committee recorded oral evidence of the representatives of the air transport companies, Chambers of Commerce, Oil Companies, Employees' Associations, the Director General of Posts and Telegraphs and the Director General of Civil Aviation. A list showing the witnesses who gave oral evidence is appended (Appendix V). The Committee had also informal discussions with Mr. J. R. D. Tata, Mr. N. Dandekar, Dr. D. R. Gadgil and General J. H. Doolittle.

**6. Visits to Workshops and Administrative Offices.**—On 28 April 1950, the Committee visited the workshops and administrative offices of Air-India and Indian Overseas Airlines. During the period from 6th to 11th July, the Committee made a quick tour of Delhi, Calcutta, Nagpur and Hyderabad, visiting the workshops and administrative offices of (Indian National Airways, Airways (India), Bharat Airways, Dalmia-Jain Airways, Kalinga Airways, Aeronautical Institute, Bengal Flying Club, Air Survey Company of India, Himalayan Aviation and Deccan Airways.) On 30th August, it visited the Gliding Centre at Poona of the Indian Gliding Association.

7. **Discussions within the Committee and signing of Report.**—The recording of oral evidence was completed on 24th July 1950. Thereafter in a series of meetings the Committee considered the general principles of the conclusions to be reached on its terms of reference and approved the general outline of the Report. The draft Report was then discussed and the Report was signed by the Committee on 15th September 1950.

## CHAPTER 2

### Historical

8. **Development of air transport in India up to 1938 by Tata Airlines and Indian National Airways.**—Scheduled civil air transport first came to India in the international field, (when in 1929-30 the British, the French and the Dutch extended their Empire air services to and across India.) India too wished to make a beginning in this new mode of transport and made plans for the operation of an Indian State Air Service between Karachi and Calcutta, but the financial depression of 1931 resulted in the scheme being shelved. During that year, however, Government arranged with Imperial Airways Limited to operate an air service between Delhi and Karachi under a charter agreement with the Company. This arrangement was of course not satisfactory from the point of view of the Government of India and on the expiry of the charter agreement about the end of 1931, the Delhi Flying Club was entrusted with the task of continuing the service for the carriage of mails only. This arrangement came to an end about the middle of 1932. In 1933, when the British Government extended their Empire Service to Singapore, arrangements were made for Indian participation in the operations through the medium of an Indian company set-up for the purpose, *viz.*, (Indian Trans-Continental Airways in the capital of which the Government of India took a 24% share. While financially this investment was not unprofitable, it was not of much benefit to India in the art of operating airlines as actually all managerial and operational responsibilities of Indian Trans-Continental Airways were in the hands of Imperial Airways. The credit of taking the first really effective step in the operation of internal air services in India goes to Tata Sons Limited, who, in 1932, organised an air service from Karachi to Madras on a frequency of one service a week with calls at Ahmedabad, Bombay and Bellary (which was later changed to Hyderabad). This service commenced operation on 15th October 1932 using two light single-engined aircraft. The main sustenance for the service was the 'air mail contract with Government for the carriage of such mails as the public offered for carriage by air, the rate of remuneration to the Company being fixed at a level covered by the air surcharge collected by the Posts and Telegraphs Department. Surcharged mail was thus the only traffic foundation for the service, but it was not quite insubstantial as it included a good quantity of overseas airmail to destinations in India brought by Imperial Airways whose service connected at Karachi with Tata Sons' service. (In May 1933, another Company for the operation of air services, *viz.*, Indian National Airways Limited, was formed with headquarters in Delhi. On the basis of an air mail contract with Government similar to that with Tata Sons, Indian National Airways established in December 1934 an air service between Karachi and Lahore linking with Imperial Airways service at Karachi. The important point to note is that the bulk of the revenue of these services came from mail payments by the Posts and Telegraphs Department, which, as already pointed out were covered by air surcharge collected from the users. They were also given free air route organisation. They were operated with light single-engined aircraft, with almost exiguous ground organisation and

with little or no communication or navigational facilities judged by present standards. The operations were carried on at the risk of inadequate traffic loads. This, however, did not deter the two Companies from making experiments in extending their activities. In 1934, Tata Sons doubled its weekly frequency on the Karachi-Madras route. In 1935, it started a weekly service between Bombay and Trivandrum with halts at Goa and Cannanore and in 1937, a bi-weekly service between Bombay and Delhi via Indore, Bhopal and Gwalior. These services were operated during the fair weather season only, as the ground organisation was not suitable for operation during the monsoon. On its part, Indian National Airways made a venture in the eastern zone of India by establishing air services from Calcutta to Dacca and Rangoon, but it incurred a loss of about Rs. 5 lakhs and had to abandon the services.

9. **Empire Air Mail Scheme, 1938.**—The next important phase of development was the introduction of what was known as the "Empire Air Mail Scheme" under which the whole of the letter mail between the Empire countries on the United Kingdom-Australia and United Kingdom-Africa routes was to be conveyed by air, no surcharge being levied for the purpose. The Government of India in association with the Government of Ceylon participated in the Scheme. In its application to India it meant among other things the provision of facilities for the distribution within India by air of the Empire mail brought by Imperial Airways up to Karachi and in the reverse direction to bring to Karachi all Indian mail destined for Empire countries. Tata Sons' Karachi-Madras service and Indian National Airways' Karachi-Lahore service were ideally suited for the purpose. In 1938, the Government of India accordingly entered into 15-year contracts with these Companies for the carriage of mail on their routes under the Empire Air Mail Scheme. The main points of the contracts were (a) that the Karachi-Madras route was to be extended to Colombo under arrangements with the Government of Ceylon; (b) the services should be operated with the same frequency as Imperial Airways' service to Karachi which was expected to be 5 times a week and connecting with it; and (c) the remuneration to the Companies was to be as follows:—

- (i) In the case of Tata Sons, a guaranteed payment by Government of Rs. 15 lakhs a year for carriage of mail on the Karachi-Colombo route upto 500,000 lbs. plus Re. 1/- for each lb. of mail extra;
- (ii) in the case of Indian National Airways, a guaranteed payment of Rs. 3.25 lakhs a year for the carriage of mail on the Karachi-Lahore route upto 130,000 lbs, plus Re. 1/- for each lb. of mail extra.

The Government of Ceylon agreed to share the remuneration to be paid to Tata Sons to the extent of Rs. 4½ lakhs per annum representing the remuneration for the conveyance of Ceylon mail on the service. Though these were termed mail contracts, there is no doubt that the remuneration included an element of financial assistance by Government, the intention being to take the opportunity to put the Companies in a position in which they could plan development on a reasonably secure basis. The Karachi-Colombo and the Karachi-Lahore services under the Empire Airmail Scheme commenced operation in February 1938. The Scheme made possible the stepping up of the two services to larger aircraft and greater frequency, and, (for the first time, gave an opportunity for the proper development of passenger and freight traffic.) In

February 1938, a halt at Trichinopoly was introduced on the Karachi-Colombo route and during October 1938 the frequency was increased to 5 times a week. Indian National Airways similarly increased its frequency on the Karachi-Lahore route to 5 times a week. It also established a thrice-weekly service between Lahore and Delhi.

10. **Operations of Air Services of India in 1937-39.**—Between 1937 and 1939, (Air Services of India) a third company which had come into existence about that time, operated air services during the fair weather season from Bombay to a number of Kathiawar States and to Kolhapur on frequencies which at that stage of development of civil air transport in this country must be considered to have been quite high, namely, as many as 6 times weekly.) The services to Kathiawar carried surprisingly high loads of passengers, demonstrating the convenience of air travel and its advantage over surface transport in the Kathiawar area. The high passenger load factor was also largely due to the comparatively low fares charged which were just above the level of second class railway fares while the minimum costs of operation in the conditions then existing were above first class railway fares. The services obviously could not succeed on this basis and the Kathiawar services were closed down in 1939.

11. **Position of Air Transport Industry in India in 1938.**—The following are the significant figures relating to scheduled air transport in 1938:—

Total route mileage operated	5190
Total miles flown	.. 1,514,000
Percentage regularity	.. 99.8

The following are the traffic statistics for 1938 on the Karachi-Colombo, Karachi-Lahore and Bombay-Kathiawar services:—

	Mails carried lbs.	Passengers carried No.	Freight carried lbs.
Karachi-Colombo Service	430,000	514	11,845
Karachi-Lahore Service	117,270	93	68
Bombay-Kathiawar Service	1,330	2,175	89,196

[TABLE No. 1]

This was the position on the eve of the second World War. The development through the years 1932 to 1939 was, doubtless, slow, but it was steady. The two pioneering Companies had by then firmly laid the foundations of scheduled air transport in this country with comparatively small financial assistance from Government. They had also demonstrated that the Indian airlines could organise and operate efficiently on long and difficult routes, e.g., Karachi-Colombo route which is 1850 miles in length. The regularity and safety of operation of the Indian air services during this period was of a very high standard bearing comparison with most of the advanced countries in spite of the difficult seasonal weather conditions, namely, the monsoon. On the Government side, the ground organisation was steadily being extended and strengthened. Upto 1939, an expenditure of about Rs. 1½ crores was incurred on the provision of aerodromes, hangars, workshops, technical and administrative buildings and aerodromes and air route lighting. A small nucleus of pilots trained up to the 'B' licence pilot's standard was created by a system of subsidised training in flying clubs established at the important Provincial capitals.



**12. Changes brought about after the commencement of World War II.—** The declaration of War in 1939 resulted in a drastic change in the situation. The Empire Air Mail Scheme was suspended and all the resources of the Empire Air Services were diverted to the needs of the War. Likewise, in India all air transport operations were placed on a War footing under which air services were run directly for the Government and the defence services. The services were, to some extent, curtailed in the beginning, but as the War progressed and spread, the two Companies were entrusted, in collaboration with the Royal Air Force Transport Command, with the operation of services in different areas with increasing intensities in accordance with the requirements of the Government, for the carriage of freight, military personnel, mails and civil priority passengers. In the later stages of the War, Government made available to these Companies Lease-Lend aircraft for the operation of the services, consisting of Expeditors, D.C.-2's and D.C.-3's. Services were operated by the two Companies on the following routes during the War, according to the varying needs of the Defence Forces:—

Karachi-Colombo  
 Bombay-Delhi  
 Bombay-Calcutta  
 Bombay-Coimbatore  
 Bombay-Karachi  
 Bombay-Colombo  
 Delhi-Karachi  
 Calcutta-Dinjan  
 Calcutta-Jorhat  
 Calcutta-Gaya-Allahabad-Cawnpore-Delhi  
 Lahore-Multan-Jacobabad-Karachi  
 Lahore-Gujrat-Rawalpindi-Peshawar  
 Lahore-Jacobabad-Quetta  
 Delhi-Bhopal-Hyderabad-Bangalore-Trichinopoly-Colombo  
 Delhi-Jodhpur-Karachi and  
 Delhi-Ahmedabad-Bombay.

Apart from the operation of the above services, Tata Sons and Indian National Airways carried out, in connection with the War, various important items of special work, e.g., (survey of the Southern Arabian air route on behalf of the Royal Air Force; transport of troops, ammunition and supplies to Iraq; evacuation of civilian refugees from Burma; servicing, overhaul and maintenance of Royal Air Force aircraft in the companies' workshops; etc. It must be mentioned here that the remuneration paid by Government to these Companies for the various services rendered by them during the War put them in a financially sound position at the end of the War. They were running air services which were fairly remunerative and had built up an amount of goodwill and support amongst the travelling public. They had also gained experience in the handling of more modern aircraft and had the opportunity to train and employ a good number of technical personnel. With the withdrawal of the Lease-Lend aircraft at the close of the War, the Companies equipped themselves with Dakotas purchased from the United States Foreign Liquidation Commission (this was before the Government of India formally took over the

Disposal stocks). The following are the operational statistics at the end of the War:—

Capacity ton-miles per annum on the basis of operations in January 1948	...	4,000,000
Traffic carried in 1945:—		
	Passengers No.	Mail and Freight Tons
Total Tons	12,000	400
Indian National Airways	10,000	250

[TABLE No. 2]

**13. Post-War plans for the development of Civil Aviation—Internal Services.**—Even before the War had ended, Government, as part of their programme for post-War reconstruction, set about drawing up plans for the development of Civil Aviation. Sir Frederick Tymms, the then Director of Civil Aviation, submitted to Government a series of carefully thought out papers on the different aspects of this subject. The most important of these related to the establishment and operation of air transport services within India and from India to countries abroad. In these papers, Sir Frederick Tymms visualised the prime need, for the proper development of India socially, commercially and industrially, of establishing a system of air services linking the principal commercial and administrative centres of the country and connecting with the principal neighbouring countries. He drew up a list of the trunk air routes which would require the first attention of the State and the essential links between these trunk services. He also mentioned a third category of routes, namely, those of local interest and importance, the development of which would have to depend on local initiative and enterprise. The internal air services mentioned in Sir Frederick Tymms's paper are detailed below:—

(I) *Trunk Air Services:*

- Route 1—Karachi-Bombay-Madras-Colombo
- „ 2—Calcutta-Allahabad-Cawnpore-Delhi-Peshawar-Kabul
- „ 3—Delhi-Nagpur-Hyderabad-Madras
- „ 4—Calcutta-Cuttack-via Madras-Colombo
- „ 5—Bombay-Nagpur-Calcutta
- „ 6—Karachi-Jodhpur-Delhi
- „ 7—Bombay-Ahmedabad-Delhi
- „ 8—Bombay-Indore-Bhopal-Cawnpore-Lucknow
- „ 9—Calcutta-Akyab-Yenangyaung-Rangoon.

(II) *Essential links between Trunk Air Services:*

- Route 10—Karachi-Quetta-Lahore
- „ 11—Calcutta via Sylhet-Tezpur-Dinjan
- „ 12—Madras-Bangalore-Cochin-Trivandrum.

(III) *Local Air Services:*

Many such services are possible, the following being a few examples:—

- Route (a)—Ahmedabad-Kathiawar States
- „ (b)—Hyderabad-Bombay.
- „ (c)—Hyderabad-Bangalore
- „ (d)—Lahore-Srinagar.

On the experience of the amount of traffic carried on the services during the War period, Sir Frederick Tymms made an estimate of the magnitude of the traffic capacity that would be available for carriage by air in the post-War period. (He postulated that to serve their purpose, the services would have to be operated with a frequency of not less than one return service daily and must operate by night whenever and wherever practicable. He also assumed that they should be established on a higher level of technical standard and public service than the pre-War services, which required that they should be operated with moderately large aircraft, so permitting the adoption of the latest operational methods with the necessary crews and technical equipment. This would fulfil the essential conditions of public service, viz., safety, regularity and comfort, which, coupled with speed, would form the basis of a healthy revenue position in air transport. He took into account the fact that at the end of the war, disposal aircraft of the Douglas D. C.-3 type would be available at comparatively cheap prices. He estimated that his plan of trunk services and essential links would constitute a route mileage of 11,280 miles involving a total capacity of approximately 17 million ton-miles a year. This would require approximately 32 aircraft of the D.C.-3 type on a utilisation of about 1700 hours a year.) On the basis of the costs of operation in United States of America for similar type of aircraft in respect of which full data were available and applying the necessary differentials for Indian conditions, e.g., increased cost of fuel and equipment, work capacity of labour and cost of labour, Sir Frederick estimated that the (cost per ton-mile of operation that could be achieved in India would be Rs. 2.) He also thought that with increased intensity of utilisation and other improvements in efficiency the cost could be reduced to Rs. 1/8/- per ton-mile in a period of five years. Sir F. Tymms also made a careful estimate of the revenue that was likely to be earned by the carriage of different categories of traffic, viz., passengers, freight and mail. In his view, in the first year of post-war operation, the services would involve an overall deficit of Rs. 160 lakhs which in the 5th year with the operating cost being reduced to Rs. 1/8/- per ton-mile and the revenue more than doubling itself, would be converted into a profit of Rs. 13 lakhs.) In his paper, (Sir Frederick also discussed the question whether the services should be operated by the State or should be entrusted to private enterprise. His recommendation was that the (services should be entrusted for operation to a limited number of private airline companies not exceeding four which would operate on a commercial basis with prospects of profit and risks of losses.) He also stated that it would be necessary for Government to make up the deficits of the companies during the first five year period. He suggested a method for giving this financial assistance, bearing in mind that it should be such as to be simple in application and at the same time not involve much too elaborate examination of the accounts of the companies leading to continual arguments on both sides. His method was based on setting a standard of efficiency as measured by the cost of operation per ton-mile.) This was to be fixed in advance on an ascending scale of efficiency or descending scale of cost of operation combined with a target revenue pre-fixed on an ascending scale.) Any assistance to be given by Government would then not exceed the difference between the pre-fixed operating cost and the target revenue set. It would be the task of the operator to achieve the standard of efficiency of operation and to earn the target revenue. In the event of his failure to do so, he was to suffer the loss and in the event of greater success in the standard of efficiency he would reap the resultant benefits. The success of this system depended entirely on the fixing of an operational cost fair to the efficient operator and reasonably accurate estimation of prospective revenue.) Another important recommendation of Sir F. Tymms was that in order (to ensure rational and orderly development of air transport in the post-war period, it should be provided that no air transport services might be operated without a licence issued by an authority

set up for the purpose and that Government should establish a central board for licensing scheduled air transport services.

**14. Post War plans for development of Civil Aviation—External Services.—**Sir Frederick's second paper dealt with plans for the operation of external services and in this he proposed the establishment of two corporations, one for the operation of services from India to the West and the other for services to the East. He suggested that in the capital of each of these corporations the Government of India should reserve to itself a substantial, but not a majority, interest. Another major share, but not a majority interest, should be given to an established air transport operator in the internal air transport field, the remainder being thrown open to other air transport operators and the general public. He also indicated the external routes which India might hope to operate during the years following the end of the War, *viz.*, India to the United Kingdom, Middle East and Near East, East Africa, China and Malaya.)

**15. Declaration of policy by Government.—**These two important papers of Sir Frederick Tymms were considered by the Reconstruction Policy Committee for Posts and Aviation and were generally approved by them in 1944-46. The proposals contained in the papers were also approved by Government who in May 1945 announced the following policy for the development and operation of air transport services:

“The policy of the Government of India is to permit the development and operation of air transport services, internal and external, by a limited number of sound and reliable private commercial organisations, with their own capital and operated under normal commercial principles of risk of losses and prospects of gain. The operation of air transport services would be subject to licences granted by Government. Without such a licence, no air transport service can operate. The grant of state assistance in specific cases will be entirely at the discretion of Government and on conditions to be laid down in each case. In specific cases, Government should take a financial interest in the companies operating air services and appoint a Director on the Board. The Government should not, however, take a controlling share in such cases.”

**16. Amendment of the Indian Aircraft Act and Rules providing for licensing of air transport services.—**It should be noticed that there was no licensing of air transport services in the pre-War period. The Indian Aircraft Rules, as they stood then, related entirely to the technical requirements of air transport operations like licensing of personnel, registration of aircraft, certification of their airworthiness and their periodical inspections, licensing of aerodromes, etc. There was no other control on the operation of air transport services and the routes over which they might be operated. This was left entirely to the discretion of the companies, the choice of routes for such operation being limited only by the availability of ground facilities. This regime apparently did not cause any difficulty, as at that stage the field of air transport was considered to be of a pioneering character. The traffic possibilities were comparatively small. A free field to whoever was enterprising was, therefore, conducive to development at that stage. The position was substantially different at the end of the War. A number of routes had been developed and the efficacy, comfort and convenience of air transport clearly demonstrated. There seemed to be quite an abundance of traffic potential. Government considered that, if their post-War plans were to be implemented and development carried out on sound lines and in an orderly manner with the avoidance

of wasteful competition, (a measure of control in regard to operation of air services over specific routes was necessary.) They accordingly took power in March 1944 (Act V of 1944) by an amendment of the Indian Aircraft Act, 1934, (to license air transport undertakings and to prohibit all operations of air transport without a licence.) They framed rules providing that after 1st October 1946 no air transport service shall be established or shall operate in India except under the authority of and in accordance with a licence issued by an Air Transport Licensing Board set up for the purpose, and detailing the constitution and functions of the Board. In the grant of licences, the Board was to take into account (a) the proper development of air transport services in accordance with the needs of the public, (b) the potential traffic on particular routes, and (c), the adequacy or otherwise of the financial and technical resources of the applicant for satisfactory operation of air transport. The Board was given power to prescribe the limits within which the fares, freight and mail carriage rates could be fixed.) The rules also required the submission to the Board by the operating companies of operational and financial returns showing their operational costs and traffic carried.)

17. **Control of operations from 1st January to 30th June 1946 and the position on 1st July 1946.**—The new licensing rules were to come into force on 1st October 1946, and one of the provisions of the rules was that in respect of scheduled air transport services which were in operation on 1st July 1946, provisional licences were to be almost automatically given by the Board to the air companies concerned for continuing to operate on those routes until formal licences were issued to them or their applications for licences rejected.) It was therefore a matter of importance to control in some measure the operation of air services before 1st July 1946. This control was exercised by the Director General of Civil Aviation during the period 1st January 1946 to 30th June 1946. (During this period two more companies for the operation of air services came into existence. One was Air Services of India which had been acquired and resuscitated by the Scindia Steam Navigation Company, and the other, Deccan Airways Limited, in which the Hyderabad Government held a majority interest.) During this period, Tata Sons Limited decided to convert its Aviation Department into a public limited company and formed Air-India on 29th July 1946. This new organisation took over as a going concern the Aviation Department of Tata Sons with all its aircraft, equipment, engineering facilities, trained personnel, etc. (Pending the establishment of the Air Transport Licensing Board, the Director General of Civil Aviation permitted Air-India, Indian National Airways, Air Services of India, and Deccan Airways to operate certain services after satisfying himself about their technical competence both in regard to organisation and to personnel.) On 1st July 1946 these companies were thus operating the following routes:—

*Tata Sons, later Air-India*

1. Karachi-Ahmedabad-Bombay-Hyderabad-Madras-Colombo
2. Bombay-Ahmedabad-Delhi
3. Bombay-Nagpur-Calcutta

*Indian National Airways*

1. Calcutta-Allahabad-Kanpur-Delhi-Lahore-Rawalpindi-Peshawar.
2. Lahore-Bikaner-Jodhpur-Ahmedabad
3. Delhi-Jodhpur-Karachi
4. Delhi-Lucknow
5. Karachi-Quetta-Lahore
6. Delhi-Gwalior-Nagpur-Hyderabad-Madras (Operation of service discontinued 29th, July 1946),

*Air Services of India*

1. Bombay-Jamnagar-Bhuj-Karachi
2. Bombay-Bhopal-Kanpur-Lucknow

*Deccan Airways*

1. Madras-Hyderabad-Nagpur-Bhopal-Gwalior-Delhi
2. Hyderabad-Bangalore

18. **Development of air transport after 1st October 1946 and the issue of new licences.**—With the introduction of the regime of licensing of air transport services and the establishment of the Air Transport Licensing Board, a large number of companies were floated for the operation of air services. (By the beginning of 1947, 21 companies had been registered with an authorised capital of Rs. 42 crores, of which Government had authorised the issue of Rs. 9·7 crores. The new companies which eventually obtained licences were Mistri Airways (later changed to Indian Overseas Air Lines) which was formed in January 1946 and started operations in September 1946; Bharat Airways which was registered in August 1945 and commenced operations in June 1947; Airways (India) which was registered in September 1945 and commenced scheduled operations in April 1947; Orient Airways which established air services to Chittagong and Rangoon in June 1947; Ambica Airlines which started operations in the Kathiawar area; Jupiter Airways which started an air service between Madras and Delhi via Puzwada and Vizagapatam; and Dalmia Jain Airways which obtained a licence to operate between Delhi and Srinagar. By the middle of 1946, the War surplus stocks had all been taken over by Government and these included a very large number of Douglas C-47's or Dakotas, many of them in good condition and quite a number which could be made air-worthy at comparatively small cost. These aircraft were made available for purchase at cheap prices. About 115 of these Dakotas were acquired by the air companies (old and new), while it had been estimated by Sir Frederick Tymms that to operate the air services mentioned in the post-War plans a fleet not exceeding 40 such machines would be sufficient.) These companies, in order to strengthen their position for obtaining licences, competed among themselves for the extremely limited number of technical personnel available in the country, thereby creating a situation in which the wages and salaries of all categories of air transport staff went very high. Within 6 months of the Air Transport Licensing Board starting work, it had before it over 100 applications from 22 companies in respect of 96 routes covering the whole of India (then undivided). Quite a large number of these routes had not even been thought of for development by the Director General of Civil Aviation and so did not have the basic ground organisation. During 1946 and 1947, Indian National Airways and Air-India equipped themselves with Viking aircraft, an interim post-war type which was faster and had greater payload capacity than the Dakota. With the Vikings these two Companies established non-stop services between Delhi and Calcutta, Delhi and Bombay and Bombay and Calcutta. This also marked an important stage of development in that the frequency on these routes was increased from one to two services daily.

19. **Development of ground organisation by the Department of Civil Aviation and provision of training and overhaul facilities.**—During the War, the ground organisation for air transport had been very considerably strengthened. This consisted of extensive aerodrome facilities (runways, hangars, workshops, administrative buildings, etc.) and that portion of the facilities which was considered suitable for the requirements of Civil Aviation was taken over by the Director General of Civil Aviation after the end of the War and adapted as found necessary. Further large capital outlay to the extent of Rs. 1½ to 2 crores every year was undertaken by the Civil Aviation Department

for the improvement and strengthening of ground facilities and provision of communication and navigational aids. (The routes mentioned in the post-war plan were thus equipped more or less to up-to-date standards.) In the immediate post-war period substantial progress was made in the provision, besides ground organisation, of other supporting facilities for the operation of scheduled air services. The training organisation was strengthened by the establishment of an Aeronautical Communication School in Saharanpur in 1946 and a training centre for pilots in Allahabad in 1948. Extensive facilities for repair and overhaul of aircraft came into existence. In the first place (Hindustan Aircraft Limited, which had been established during the War for the manufacture of aircraft and then changed over to repair and maintenance of Air Force aircraft, was re-organised for repair and overhaul of civil aircraft.) Most of the Disposal Dakotas purchased by the operating companies were overhauled and converted for passenger service by Hindustan Aircraft Limited. This establishment is now fully equipped for the overhaul and repair of Dakota aircraft and engines. Besides Hindustan Aircraft Limited, some of the operating companies strengthened their own workshops. Air-India and Indian National Airways as their activities grew and their fleet were augmented by the acquisition of Vikings, enlarged their workshop facilities so that they are at present organised to carry out the whole of their own work. Similarly, Deccan Airways, Air Services of India and Bharat Airways have organised their own workshops for airframe overhaul. Their engine overhaul is being done at Hindustan Aircraft Limited.

**20. Issue of licences by the Air Transport Licensing Board during the first two years.**—During the first two years after it came into existence, the Air Transport Licensing Board gave licences to the following 11 companies for the operation of air services:—

- (1) Air-India
- (2) Indian National Airways
- (3) Air Services of India
- (4) Deccan Airways
- (5) Dalmia-Jain Airways
- (6) Bharat Airways
- (7) Airways (India)
- (8) Mistri Airways (later changed to Indian Overseas Airlines)
- ✓(9) Orient Airways
- (10) Ambica Airlines
- (11) Jupiter Airways

A statement showing the routes in respect of which licences were granted to the above companies up to 30th June 1949 is given in Appendix VI.

**21. Effect of partition of India and the liquidation of Jupiter Airways and Ambica Airlines.**—(With the partition of India in August 1947, the air route pattern inevitably underwent a change.) Orient Airways transferred its headquarters and activities to Pakistan. A number of the routes of Indian National Airways which lay in Pakistan had to be given up by that Company. The position at this stage was that most of the operators had equipped themselves with large numbers of aircraft and personnel but had not enough work to do. This position in normal circumstances would have been very unsatisfactory, but the surplus capacity in men and equipment came in most useful in organising the operations for the evacuation of refugees from Pakistan to India by air and in the Kashmir operations. The companies co-operated with Government

in this matter readily and while their surplus capacity was of inestimable assistance to Government during this very critical and emergent period, these operations provided work for the idle capacity of the companies and gave them an opportunity to earn much needed revenue. (But for these operations, it is likely that some of the companies would have found themselves in financial embarrassment. Actually, Jupiter Airways which had been operating on the route Delhi-Nagpur-Bezwada-Vizagapatam-Madras went into liquidation in October 1948. Early in 1949, Ambica Airlines which was operating certain services in the Kathiawar area and on the Bombay-Poona-Bangalore route also went into liquidation. These were the first ominous indications that the position of the Air Transport Industry was not altogether satisfactory.)

**22. Issue of term licences.**—All this while, the licences granted by the Air Transport Licensing Board to the companies continued to be provisional. This was primarily due to the fact that the Government of India had then under consideration the question of the nationalisation of air transport services and had informed the Air Transport Licensing Board that pending a decision by them on the question, no term licences were to be given. The companies complained that their operations had to be carried on on an uncertain basis and that they did not know where they stood. The Government of India appreciated the difficulties of the companies in the matter and (at their instance the Air Transport Licensing Board granted term licences for a large number of routes with effect from 1st July 1949). A statement showing the term licences so granted will be found in Appendix VII.

**23. Relief granted by Government to the Air Transport Industry.**—During 1949, there was evidence that the operating costs of the companies were rising, primarily due to the increase in (a) the price of aviation fuel and (b) the expenditure on salaries and wages of personnel. Government recognised that some action was needed to give relief to the companies and adopted the following measures:—

- (i) The "All-up" Mail Scheme was introduced on 1st April 1949 under which all mail which could be conveyed more expeditiously by air was given to the airlines. The surcharge on mail for air conveyance was abolished. The measure was intended to increase the revenue pay-load of the companies.
- (ii) A rebate of the import duty on petrol consumed in civil aviation to the extent of Re. 0-6-0 per gallon was granted by Government with effect from 1st March 1949. The amount of this rebate was later increased to Re. 0-9-0 per gallon.

These measures did in fact ease the financial position of the companies though the benefit was not as great as expected by them due to the fact that the rate of payment for the carriage of mail was reduced from the previous rate of Rs. 1-8-0 per lb. irrespective of distance, to the freight rate plus 25 per cent. and the fact that the oil companies had in the meantime increased the price of aviation petrol.

**24. Other developments during the post-War period.**—The other developments during the post-War period were the following:—

- (a) With the abandonment of the Empire Air Mail Scheme, much of the basic character of the 1938 agreements with Air-India and Indian National Airways had altered. During the War, however, payments to Air-India continued to be made on the basis of the agreement, while in the case of Indian National Airways, after some initial period, an *ad hoc* arrangement was arrived at for actual services operated in place of the Karachi-Lahore service. During



the later stages of the War when the services to be operated by the two Companies far exceeded the capacity mentioned in the agreements, remuneration was paid to the two Companies for the operation of such additional services on a "cost plus" basis. After the War, for 9 months from 1st January 1946, a regime of commercial operation was introduced under which Government guaranteed to the two Companies a fixed percentage of capacity revenue on their services, in return for control over a portion of the capacity for being used for Government Priority traffic. On 1st October 1946 when the rules for the licensing of air transport came into force, the position was restored to that under the 1938 agreement. With the partition of India, the position again changed. Air-India and Indian National Airways lost the mails originating in Pakistan. The Government of Ceylon also desired to contract out of their agreement to make a contribution of Rs. 4½ lakhs to Air-India for the carriage of their mail on the Karachi-Colombo service, as they proposed to use their own service for the purpose. It thus became necessary to revise the 1938 agreements with Air-India and with Indian National Airways. (After some negotiations, it was agreed to let the Ceylon Government discontinue their contribution of Rs. 4½ lakhs per annum and the minimum guarantee of remuneration to Air-India and Indian National Airways was reduced to Rs. 10 lakhs and Rs. 1 lakh per annum respectively.)

- (b) A new Company, Kalinga Airlines, was granted in May 1949 a provisional licence for the operation of a purely freighter service on the route Calcutta-Agartala.
- (c) On 30th June 1949, Dalmia Jain Airways surrendered its licence for the operation of the Delhi-Srinagar service and thus went out of the field of scheduled operations.
- (d) Air Services of India, feeling the necessity for a smaller aircraft with lower seating capacity than the Dakota which could be more economically used on the subsidiary routes or routes with lower traffic potential, equipped itself with a new type *viz.* SO-95's with a seating capacity of 10 passengers.

**25. Emergency in Bengal.**—Towards the end of 1949, the emergency which arose in East and West Bengal created a situation in which air transport was again called upon to play an important part. The demand for air conveyance suddenly shot up. It was primarily (a) from the refugees migrating between East and West Bengal, and (b) for the carriage of an unprecedented amount of traffic between West Bengal on the one side and Assam and Tripura on the other, as all direct surface routes between these areas had been cut off. The three regular operators in the Calcutta-Assam area, *viz.*, Airways (India), Bharat Airways and Kalinga Airlines quickly stepped up the frequencies of their scheduled services. There appeared still to be scope for extra air transport capacity and scheduled operators based at the other centres came into the field and established their organisations in Calcutta. A large number of non-scheduled operators also came in and there ensued a period of intense competition, giving rise to a number of undesirable practices, such as undercutting of rates to uneconomically low levels, drift of operational and other technical personnel from company to company, working of crews for excessive hours, etc. Some cases of overloading of aircraft were also detected. Scores of middlemen came into the field as touts for canvassing traffic. Attempts were made by the Director General of Civil Aviation to bring some sort of order into the situation (by calling a meeting of all the operators and evolving a mutually agreed code of operating practices). The intensity of traffic in the Assam and Tripura areas continued till about the end of March 1950 when it

slowly started to ease. With the onset of the monsoon, however, and the washing away of the Assam Rail-Link, the continued need for air transport became apparent. Though there appear to be some signs now that the intensity of operations in the Assam area is coming down, it is quite clear that air transport will always have an important role to play in the system of communications in this part of India.

26. **Inauguration of night airmail service by Indian Overseas Airlines in February 1949 and its suspension in June 1949.**—During the latter part of 1948, the Government of India considered the possibility of putting into effect a scheme by which all the mail passing between the four main cities of India, viz., Calcutta, Bombay, Delhi and Madras could be conveyed by night. The scheme envisaged the operation by night of services on the routes Delhi-Nagpur-Madras and Bombay-Nagpur-Calcutta (with four aircraft starting more or less simultaneously from Delhi, Bombay, Madras and Calcutta in the early part of the night, meeting at Nagpur for exchanging the mail and returning to their respective starting stations the next morning.) Thus the mails posted at each of the stations till the evening would reach their destinations the next morning. The scheme had also the advantage that with the introduction of the All-up scheme, a very substantial proportion of the mail would obtain the maximum benefit by air conveyance. The possibilities of operating this scheme which came to be known as the Night Air Mail Scheme were discussed by Government with the representatives of several air companies. It appears that only Indian Overseas Air Lines offered to work the scheme without any guarantee of minimum payment or load, or any higher rate of remuneration for the carriage of mail than the rate already in force. As the night airmail operation was then considered to be on an experimental basis and the routes not fully equipped from the point of view of safety of passengers, the scheme was restricted to the carriage of mail and freight alone and carriage of passengers was not permitted.) The Air Transport Licensing Board granted a licence for the operation of these services to Indian Overseas Airlines for one month with effect from 31st January 1949. This was subsequently extended up to the end of June 1949. Upto 31st March 1949, the mail carried on the night service was only surcharged mail and totalled about 48,000 lbs. per month. With the introduction on 1st April 1949 of the All-up Mail Scheme, the amount of mail carried by Indian Overseas Airline more than trebled itself. It must be mentioned that the introduction of the Night Air Mail Scheme did not mean that no mail was given to the operators of the day services. The distribution of mail was made on the basis that the service which could give the (most expeditious carriage should be utilised.) Thus, the night services carried the mail collected after the departure of the day services, while the day services carried the mail posted after the departure of the night services. About the middle of 1949, Indian Overseas Airlines got into serious financial difficulties and had to terminate its Madras-Delhi service on 19th May 1949 and its Calcutta-Bombay service on 8th June 1949. Till the end of June, the night services were kept in operation by Deccan Airways who operated between Madras and Nagpur and by Indian National Airways who operated between Delhi and Nagpur under special terms negotiated with these Companies by the Director General of Civil Aviation. (With the onset of the monsoon, the operation of the night services was suspended, as the then organisation on the routes was not considered to be adequate for operation by night during the monsoon.

27. **Recommencement of night air services in October 1949 by Himalayan Aviation.**—Government's intention was to resume operation of the services in October and by then to get the routes fully equipped so as to make them safe for the carriage of passengers also. It was also expected that the organisation would be improved to enable the operation to be continued through the monsoon period without any break. To this end, the Government of India started

negotiations with the various airlines for settling the terms. Air-India, Air Services of India, Deccan Airways, Indian National Airways and Airways (India) offered to run the night services provided (Government guaranteed them a minimum payment of Rs. 3 per mile flown.) Bharat Airways offered to operate the services on a guarantee of Rs. 2-12-0 per mile flown. The Government of India, however, did not think it desirable to commit themselves to a guarantee. Indian Overseas Airlines, whose licences had, in the meanwhile, been suspended as it still was not in a position to get clear of its financial difficulties, offered to run the services without any guarantee. (Government were thus faced with a situation in which practically none of the scheduled airlines was prepared to operate the services except under a guarantee.)

The one scheduled airline which was prepared to operate without a guarantee was in serious financial difficulties and thus not in a position to undertake the operations. Himalayan Aviation, which was then a non-scheduled operator, offered to operate the night services without any guarantee. Kalinga Airlines, which had a licence for scheduled operation for freight alone on the Calcutta-Agarta's route and had previously refused to operate the night services, subsequently offered to operate them without any guarantee. Eventually, the Air Transport Licensing Board (gave a licence to Himalayan Aviation to operate the night airmail services for a period of 3 months from 15th October 1949.) By this time the ground facilities, the communications organisation and the navigational aids on the Delhi-Nagpur-Madras and Bombay-Nagpur-Calcutta routes had been brought up to such a standard that carriage of passengers by night was considered to be safe. Himalayan Aviation was accordingly permitted to carry passengers on the night services. It was, however, stipulated that the passenger fares on the night services should not exceed the first class railway fare on the respective routes plus 12 per cent.) During the three month term of the provisional licence, the night services became very popular and they were operating at a very high load factor. When the question of the renewal of the licence came before the Air Transport Licensing Board, all the other operators opposed the renewal, but the Board did not feel justified in taking away the licence of Himalayan Aviation in view of its good record and renewed the licence up to the end of January 1951.

28. **Sequel to the grant of licence for night air service to Himalayan Aviation.**—The grant of a licence for the operation of night air services to Himalayan Aviation, which was till then a non-scheduled operator, meant the introduction of an additional operator into the field of scheduled air transport. The other companies felt strongly that their existing financial difficulties were in a large measure due to want of adequate traffic and revenue, as well as rising levels of expenditure in wages and salaries and the price of petrol. In these circumstances they felt that the introduction of an extra operator into the field and giving him the bulk of mail traffic had made their position much more difficult.) They complained that they had lost to Himalayan Aviation a good portion of their mail revenue and that Himalayan Aviation's low fares on the night services were also affecting their other traffic. There was some discussion in the Press on this subject and the question was also debated in Parliament. It was recognised by Government that all was not well with the Air Transport Industry and early in February 1950 they set up this Committee with the terms (of reference which have been detailed in the Introductory Chapter.)

29. **Grant of provisional licence to Indian Overseas Airlines for operating on the Bombay-Nagpur-Calcutta route.**—Indian Overseas Airlines after an endeavour to put its financial affairs in order applied to the A.T.L.B. in September 1949 that its licence for the operation of the Bombay-Nagpur-Calcutta day stopping service might be restored. The Board granted it the licence on a provisional basis for one year with effect from 1st October 1949.

**30. External Services to the West and formation of Air-India International.—**

In the field of external operations, the credit for taking the first effective step again goes to Air-India. Indian Trans-Continental Airways, the Indian company which had been formed in 1933 for participating in the Empire service from the United Kingdom to India, lost its identity for all practical purposes during the War and was finally liquidated on 30th March 1946. At the end of the War, the Government of India felt that it would be possible for India to establish her own external services without collaboration with the United Kingdom. Air-India submitted to the Government of India in 1947 a scheme for the establishment of an air service between India and the United Kingdom. This scheme contemplated the formation of a new company, Air-India International, with a capital of Rs. 2 crores in which the Government of India were to take 49 per cent. shares and Air-India 20 to 25 per cent., the balance to be subscribed by other air transport interests and the public. It was proposed, to start with, to operate a twice-weekly service from Bombay to London with an intermediate halt at Cairo with 3 Lockheed Constellation aircraft. Air-India was to act as Technical Managers of the new Company in its day-to-day administration subject to the control of the latter's Board of Directors. Air-India was to expand its flying, engineering and traffic organisation to meet the needs of the new company. Government generally approved the scheme and early in 1948 entered into agreements with Air-India and Air-India International. The more important provisions of these agreements are as follows:—

- (a) The Government of India would take up 49 per cent. of the capital of Air-India International and would have the option to take up a further 2 per cent. at any time if they so desired.
- (b) The Board of Directors would consist of 6 members, 2 of whom including the Chairman were to be the nominees of Air-India (Chairman's appointment being subject to the approval of the Government of India), one Director to represent the general shareholders and the remaining three to be Government Directors including a Special Director with powers to reserve specified items of importance for the decision of Government.
- (c) Government would re-imburse to Air-India International any loss incurred by it after making provision for depreciation, for a period of 5 years the loss for the purpose being the actual loss as disclosed by the final audited accounts of the Company.
- (d) When the Company begins to make a profit, not less than 50 per cent. of its annual profit would be returned to Government in repayment of the subsidy, if any, which had been paid to it in earlier years. The balance could be retained by the Company and out of that dividend of not more than 3½ per cent. might be declared until the whole of the subsidy received by the Company from Government was paid off.
- (e) Air-India would be paid a management fee by Air-India International for acting as the latter's Technical Managers, on a sliding scale, decreasing, in respect of Constellation operations, from -/5/- per mile for the first 1 million miles to -/1/- per mile over 2½ million miles flown during the year.
- (f) Air-India International would have exclusive rights of operation over all routes to the West of India within a specified zone, for a period of 10 years.

**31. Operations of Air-India International.—**Air-India International was registered on 8th March 1948 with an authorised capital of Rs. 7 crores and a paid-up capital of Rs. 2 crores of which Government of India subscribed 49 per cent. and had the option to acquire a further 2 per cent. at any time.

Air-India took up 10 per cent. of the capital. The balance was subscribed by the public. The Company's service from Bombay to London *Via* Cairo and Geneva, was inaugurated on 8th June 1948 with an initial frequency of one service a week. This has been progressively increased to its present frequency of three services a week. The Company at present also operates a weekly service between Bombay and Nairobi *via* Aden which was started at the beginning of this year. The fleet of Air-India International now consists of 4 Constellation aircraft. In the first year of its operations ended 31st December 1948, the Company showed an operational loss of Rs. 4.24 lakhs. In accordance with the terms of their agreement, the Government of India made good this loss plus the provision for depreciation (Rs. 13.01 lakhs) plus 1/5 of the preliminary expenditure (Rs. 2.54 lakhs), the total amounting to Rs. 19.79 lakhs. The accounts for the year ended 31st December 1949 have not yet been finalised, but we understand that they are likely to show that the Company has either broken even or made a small profit.

**32. External services to the East.**—As regards services to the East, in 1949 two companies in India which had acquired Douglas D.C.4 Skymaster aircraft, *viz.*, Bharat Airways and Indian Overseas Airlines, were given licences by the Air Transport Licensing Board to operate services on the following routes, respectively:—

- (a) Calcutta-Bangkok-Hongkong-Shanghai-Tokyo;
- (b) Calcutta-Bangkok-Singapore and thence to Australia.

These routes were to be operated by the Companies concerned entirely at their own risk and no question of financial assistance by Government was involved. Due to financial difficulties, Indian Overseas Airlines could not operate to Singapore. Bharat Airways started operating to Hongkong towards the end of May 1949, but due to the unsettled conditions in China and the consequent paucity of traffic it later restricted operations to Calcutta-Bangkok. It is now operating on this route on a weekly frequency. It was recently given a licence by the Air Transport Licensing Board to extend this service to Singapore, but we understand that Bharat Airways has not yet commenced operation on the Bangkok-Singapore sector.

**33. Non-scheduled Operators.**—This Chapter will be incomplete without a reference to the non-scheduled operators. Under the rules for the licensing of air transport issued in 1946 and the orders of the Government of India thereunder, while scheduled air transport services were subject to the grant of a licence by the Air Transport Licensing Board, (non-scheduled operations or charters required only a permit to be given by the Director General of Civil Aviation. Such permits have been issued by the Director General of Civil Aviation to the scheduled operators and also to other persons and bodies who are engaged only in charter operations.) The latter category of operators do not usually have any elaborate organisation and carry on their activities with a limited number of aircraft, crew and such engineering personnel as are absolutely necessary. The Director General of Civil Aviation in granting permits to these operators satisfies himself that they possess the minimum basic organisation necessary to ensure safety, both from the point of view of operation and maintenance. During the years from 1946 to 1949, the number of non-scheduled operators slowly increased. A list of such operators as on 31st March 1950 with the work carried out by them is given in Appendix VIII.

**34. Certain Statistics.**—A map of India showing the air routes in operation as on 1st July 1950 will be found in Appendix XXI. The following statements and charts showing the particulars of the scheduled air transport companies and

the progress of air traffic carried by them during the period from 1st January 1946 to 30th June 1950 are attached as Appendices:—

- (a) Statement of the companies as on 1st July 1950 with the routes in respect of which they hold licences and the frequencies of the services operated by them—Appendix IX.
- (b) Statement showing route mileage operated by scheduled air transport companies on 1st July 1950, the annual hours flown and the number and categories of aircraft possessed by them—Appendix X.

**NOTE:** For computing route-mileage of individual operators, each distinct route has been taken into account separately, even though two or more of them are between the same terminals. For instance, in the case of services between Karachi and Colombo operated by Air-India, the route mileages of the services Karachi-Bombay, Karachi - Ahmedabad - Bombay, Bombay - Madras - Tiruchirapalli-Colombo and Bombay-Madras have been counted separately. On the other hand, Air-India's day and night non-stop Viking services between Bombay and Delhi have been treated as one for purpose of computing route mileage.

- (c) Progress of air traffic carried by the scheduled air transport companies (internal and international) from 1946 to 1950—Appendix XI.
- (d) Charts showing—
- (1) miles and hours flown by the scheduled operators
  - (2) different categories of traffic carried
  - (3) total traffic ton-miles carried
  - (4) passenger miles flown
  - (5) capacity ton-miles operated and traffic ton-miles carried
  - (6) revenue load factor—Appendix XII.

The progress made from 1946 to 1950 can be seen at a glance from the table below:

	1946	1950 (based on first two quarters' figures)
Hours flown . . . . .	29,500	118,366]
Miles flown . . . . .	4,500,000	18,857,418]
Number of passengers carried] . . . . .	105,000	482,612
Mail carried (lbs.) . . . . .	1,026,000	9,272,410
Freight carried (lbs.) . . . . .	1,818,000	175,890,806
Newspapers carried (lbs.) . . . . .	567,000	5,600,184 ]
Total traffic carried (ton-miles) . . . . .	6,391,000	33,979,934]
Load factor . . . . .	74.8%	66.1%

{TABLE No. 3}

## **PART II**

**PRESENT POSITION OF THE AIR TRANSPORT INDUSTRY**





## PART II

### PRESENT POSITION OF THE AIR TRANSPORT INDUSTRY

#### CHAPTER 3.

##### Internal Services

##### Section (1)—General

35. **Paragraphs (a), (b) and (c) of our terms of reference.**—In paragraphs (a), (b) and (c) of our terms of reference, we have been asked to inquire into the present state of the Air Transport Industry in India in regard to both internal and external services, the short-comings, if any, in the organisation and management of the Industry as a whole or in regard to any individual company or companies, and the major difficulties and defects in the Industry as at present constituted.) It is convenient to deal with these three paragraphs together and in this Chapter we propose to examine the position of each of the internal operating companies, how it has worked and developed since its formation, what its financial position is now, what difficulties it has met with and what its shortcomings and defects, if any, are, and then to sum up the position of the Industry as a whole so far as internal services are concerned. The position in regard to the operation of external air services will be examined in a separate Chapter.

36. **Costs of operations of Air-India.**—We would mention here one important point about the costs of operations of Air-India. In its reply to our Questionnaire, the Company furnished us certain provisional figures of its expenses and revenue for the year 1949, as the Company's final allocations had not then been completed. The figures relating to Air-India for the year 1949 given in this and the following Chapters of the Report are all based on this provisional statement of revenue and expenditure. After the Committee had practically finalized the Report, Air-India submitted a copy of its printed Balance Sheet for the year 1949. This reached us on the afternoon of 21st August. We have examined this Balance Sheet and the Company was also kind enough to point out to us the main changes from the provisional statement of revenue and expenditure which it had sent to us earlier. We find that against a loss of Rs. 29.34 lakhs which the Company had shown in the provisional statement, the Balance Sheet shows a small nominal profit. It is true that the submission of the provisional statement was qualified by the remark that the figures were provisional and that they were likely to be materially affected by the decisions still to be taken regarding (a) allocation of common expenditure between Air-India and Air-India International, (b) exact amount of depreciation to be charged and (c) the total amount of stores and spare parts actually consumed. It is a matter of regret to us that the Company did not supply us the revised figures earlier, though the real position must have been known to it much earlier than 21st August. Nor were we given any idea that the real position was likely to be different from what was indicated to us earlier, when the Company's representatives gave evidence before us on 29th June 1950. The overall change has been due to three main factors:—

- (a) The provision for depreciation was reduced from Rs. 26.13 lakhs to Rs. 11.45 lakhs, thus reducing the expenditure by Rs. 14.67 lakhs.
- (b) The expenditure under "servicing and overhaul" was reduced by Rs. 10.8 lakhs, after taking into account the depreciated cost of all spares and stores used in the process.

- (c) On the revenue side, there was an increase on two accounts, *viz.*, a profit on sale of certain equipment and a payment by the Travancore-Cochin Government under an agreement between that Government and the Company.

After examining these modifications, we are of the view that the conclusions which we reached on the basis of the Company's earlier statement and which we have recorded in the Report do not require any material alteration, though the emphasis on one or two aspects of the Company's costs of operation would require to be modified.

### Section (2)—Air-India

37 **Brief history of the operations of Tata Airlines up to 1945.**—As mentioned in Chapter 2, Air-India was formed in July 1946 to take over the undertakings of the Aviation Department of Tata Sons Limited, then known as Tata Airlines. Really, therefore, for Air-India's history we have to go back to the formation of Tata Airlines. Tata Airlines was started as a Department of Tata Sons Limited in 1932. On 15th October of that year, it commenced operation of a weekly air mail service between Karachi and Madras *via* Bombay and Bellary with two light single-engined aircraft. The route mileage was 1,310. The frequency was doubled in 1934 and Hyderabad was substituted for Bellary as a halt *en route*. During the next two years, the Company experimented with operation of air services between Bombay and Trivandrum *via* Goa and Cannanore and between Bombay and Delhi *via* Indore, Bhopal and Gwalior during the fair weather season. With the introduction of the Empire Air Mail Scheme in 1938, Government entered into a 15 year contract with Tata Airlines for the carriage of mail between Karachi and Colombo. This gave the Company its first opportunity to organise its service on a basis which could attract passenger and freight traffic. The contract provided for a guaranteed minimum annual payment by Government to the Company of a sum of Rs. 15 lakhs for the carriage of mail up to 500,000 lbs. per annum, *plus* Re. 1 for each additional lb. of mail and free landing and housing facilities. In February 1938, the Karachi-Madras service was extended to Colombo with a frequency of four return flights a week. In the following month, Trichinopoly was introduced as a halt and in October, the frequency was increased to 5 services a week. During the period 1933 to 1938, the number of miles flown increased from 138,600 in 1933 to 1,083,155 in 1938, mail loads from 23,475 lbs. to 431,760 lbs. and the number of passengers carried from 8 to 740. With the out-break of the War in 1939, all operations were placed on a war footing and as the War progressed, the Company was required to operate air services to meet the requirements of Government on a progressively increasing scale in support of the Royal Air Force Transport Command. Apart from payment under the 1938 contract for carriage of mail on the Karachi-Colombo service, the Company was paid remuneration by Government for the other services on a "cost plus" basis. To enable the Company to operate the additional services, Government loaned it a number of Expeditor and DC-2 aircraft. At the end of the War, the Company was operating on the following routes:—

- Karachi-Colombo
- Bombay-Delhi
- Bombay-Calcutta
- Bombay-Coimbatore
- Bombay-Karachi, and
- Bombay-Colombo.

The pre-war route mileage of 3,697 miles increased to 5,951 in 1945, the annual mileage flown from 1,169,647 to over 2,102,630 and the total traffic ton-miles from 245,500 in 1939 to 4,483,000 in 1945.

38. **Formation of Air-India in 1946 and expansion of its activities.**—On 29th July 1946, Air-India was formed and took over Tata Airlines with all its aircraft, equipment, engineering facilities, trained personnel, air mail contracts, etc., at a total purchase price of Rs. 39,48,116 which included Rs. 20,00,000 for goodwill. The authorized capital of Air-India was Rs. 5 crores of which Rs. 1.5 crores was issued and paid up. After the end of the War, the Lend Lease aircraft which had been loaned to the Company were withdrawn, but the Company equipped itself (by acquiring a number of Dakotas from the U. S. Foreign Liquidation Commission.) When the rules relating to the licensing of scheduled air transport came into force on 1st October 1946, Air-India was operating the following services and was accordingly granted provisional licences for those routes:—

Karachi—Ahmedabad—Bombay—Hyderabad—Madras—Colombo.

Bombay—Ahmedabad—Delhi.

Bombay—Nagpur—Calcutta.

As a result of negotiations with the States of (Mysore, Travancore and Cochin, Air-India entered into agreements with those States for the operation of a service connecting Madras, Bangalore, Coimbatore, Cochin and Trivandrum with a guarantee against loss.) This service commenced operation on 1st October 1947 under a provisional licence granted by the Air Transport Licensing Board. During 1947, the Company strengthened its fleet by the acquisition of 8 Vickers Vikings. This enabled the Company to undertake direct non-stop services between Bombay and Calcutta, Bombay and Karachi, Bombay and Madras and Bombay and Delhi. Along with other operators, Air-India participated in the operations for evacuating refugees by air from Western Pakistan and the Kashmir Operations in the latter half of 1947. In March 1950, the Company obtained a provisional licence for the operation of a non-stop service by night between Bombay and Delhi, with a daily frequency.

39. **Formation of Air-India International of which Air-India became Technical Managers.**—About the end of 1947, Air-India submitted a scheme to Government for the operation of an air service between India and the United Kingdom. Under this scheme which was approved by Government, Air-India International, a new company, was formed in which the Government of India took 49% of the capital and Air-India 10%. Under an agreement concluded between Air-India and Air-India International, Air-India was appointed Technical Managers and Principal Booking Agents of Air-India International for a period of 10 years.) Air-India expanded its flying, engineering and traffic organisations, to meet the requirements of the new company.

40. **Its existing routes, equipment, etc., and financial results for 1947, 1948 and 1949.**—Air-India was on 1st July 1950 operating the following routes with the frequencies mentioned against each:—

Bombay-Delhi (day service).	Daily.
Bombay-Delhi (night service).	Daily.
Bombay-Ahmedabad-Jaipur-Delhi.	4 services a week.
Bombay-Karachi.	Daily.
Bombay-Ahmedabad-Karachi.	3 services a week.
Bombay-Calcutta.	Daily.
Bombay-Madras.	3 services a week.
Bombay-Madras-Trichinopoly-Colombo.	Daily.
Madras-Bangalore-Coimbatore-Cochin-Trivandrum.	Daily.

(The route mileage is 5,940 and the above operations involve 26,629 hours flying per annum. On 1st April 1950, the Company had a fleet of 14 Dakotas, 7 Vikings and 1 Expeditor.) The fleet utilisation during 1949 was about 1453 hours for Dakotas and 1348 hours for Vikings. The total transportation performed by Air-India during the three years 1947, 1948 and 1949 was 7,952,000 ton-miles; 7,951,000 ton-miles; and 7,523,000 ton-miles, respectively. The Company's expenditure and revenue were respectively Rs. 198 lakhs and Rs. 212 lakhs in 1947; Rs. 224 lakhs and Rs. 226 lakhs in 1948; and Rs. 250 lakhs and Rs. 220 lakhs in 1949. The figures for 1949 are based on the provisional statement of revenue and expenditure supplied to us by the Company. Thus the Company's operations in 1947 resulted in a profit (before making provision for income-tax) of Rs. 14 lakhs, which dwindled to Rs. 2 lakhs in 1948. There was then a further very steep decline, the Company being worse off by Rs. 30 lakhs in 1949. The revenue for 1949 includes the financial assistance given by Government in the shape of rebate of a part of the duty on aviation fuel. This amounted in the case of Air-India to Rs. 9.47 lakhs. If this were excluded, the deficit of the Company for 1949 would be of the very high order of Rs. 40 lakhs. The Company declared a dividend of 5 per cent. 6 per cent., and 2 per cent. respectively for the years 1946, 1947 and 1948.

41. **Air India's operating costs and revenue per mile of transportation.**—The following table shows Air-India's costs and revenue in terms of annas per mile of transportation performed by it during 1947, 1948 and 1949. The 'Costs' item has been broken down into Direct Costs and Other Costs, and the 'Revenue' item into Transportation Revenue and Other Revenue.

*Annas per mile*

	1947	1948	1949
<b>Costs—</b>			
Direct . . . . .	15.6	55.5	60.3
Other . . . . .	24.6	23.9	24.9
<b>TOTAL</b>	<b>70.2</b>	<b>79.4</b>	<b>85.2</b>
<b>Revenue</b>			
Transportation . . . . .	70.3	73.7	65.5
Other . . . . .	3.4	6.3	9.7
<b>TOTAL</b>	<b>73.7</b>	<b>80.0</b>	<b>75.2</b>
<b>Net results</b>			
Profit & Loss . . . . .	+3.5	+0.6	-10.0

[TABLE No. 4]

While "Other Costs" have remained more or less constant, "Direct Costs" have steadily gone up over the three years. On the Revenue Side, Transportation Revenue after showing a rise from 1947 to 1948, registered a sharp drop in the following year. "Other Revenue" has steadily risen, but the combined effect of the increase in Costs and the drop in Transportation Revenue has been very much more than this increase.

42. **Brief review of the financial position as disclosed by the latest available balance sheet for 1948.**—The following is a review of Air-India's published accounts. The latest published balance sheet of the Company is for the year 1948. The original cost of the fixed assets as revealed in this account is Rs. 141.29 lakhs as on 31st December 1948. On the same date, a sum of Rs. 60.39 lakhs has been provided for depreciation and obsolescence. From the information available with us, depreciation calculated at rates permissible for income-tax purposes amounts to Rs. 62.67 lakhs on 31st December 1948. This, however, is subject to minor adjustments in respect of assets procured during the course of the year for the portions of the year in respect of which full information is not available. In view of the fact that the difference between the depreciation assessed by us and that provided by the Company is only about Rs. 2.27 lakhs on the whole, the Company's figure of Rs. 60.39 lakhs may be considered to represent depreciation in full at the rates permissible for income-tax purposes. Loans and liabilities on 31st December 1948 amounted to Rs. 94.10 lakhs. On the same date the floating assets amounted to Rs. 158.98 lakhs. The financial position of the Company as on 31st December 1948 was thus quite strong.

43. **Company's high costs of operation.**—We have carefully scrutinised the figures submitted by Air-India relating to its operations and its revenue and expenditure. The facts that are very clear are that (this Company holds about a quarter of the total route mileage in India, that the routes are conveniently situated to secure reasonably good utilization of its flying equipment and that the routes are perhaps the most remunerative in India as the Company's consistently high load factors show. It has a remunerative contract with Air-India International under which it shares the cost of a part of its organisation with the latter Company and gets a handsome management fee and additional revenue by being the Technical Managers and Principal Booking Agents for Air-India International. Thus, the revenue potential of the Company is very strong) If, in spite of this, the Company shows a heavy loss instead of a handsome profit, the inference is that its costs are much higher than they should be and also probably that the tariff level is somewhat below the economic minimum. We spent considerable time, both while scrutinising the material furnished by the Company and while discussing this matter with the representatives of the Company at the time of their oral evidence, to find out the reasons for such high costs. A comparative examination of the expenditure figures of all the operating companies in India reveals that for the year 1949, Air-India's operating cost per mile for Dakota operation was second highest. It was Rs. 742.16 per hour which, on the Company's average block speed of 148 miles per hour, works out to Rs. 5.02 per mile! Other companies have shown substantially lower figures than this. Deccan Airways' cost of operation of Dakota in that year was Rs. 625.09 per hour and on its average block speed of 150 miles per hour Rs. 4.27 per mile. Airways (India) achieved a still lower figure of Rs. 522.14 per hour which was equivalent in its case to Rs. 3.10 per mile. In Chapter 5, we have endeavoured to evolve the reasonable cost of operation

of certain types of aircraft, and (for the Dakota the reasonable cost according to the standards which we have set amounts to Rs. 571.62 per hour for a 1500 hour utilisation, and on a 150 miles per hour block speed this would be equivalent to Rs. 3-13-0 a mile.) As we have pointed out in that Chapter, of the several elements which make up the operating cost detailed in question 6(1) of our Questionnaire, the following are susceptible of close control by efficiency of management and administration, viz.,

- Aircraft servicing
- Aircraft and engine overhaul.
- Operation on-costs.
- Training
- Passenger service
- Traffic Sales and Agencies
- Administration
- Office rents and expenses
- General publicity and advertising
- Medical and Welfare
- Accounts and Audit
- Miscellaneous items.

The total of the costs under these heads was by far the highest in the case of Air-India, the (high cost being reflected in every constituent.)

44. High cost due to excess staff.—We consider that one of the principal reasons for the Company's high cost is that it is employing very much more staff than is required to handle its operations. The following table shows how the strength of Air-India's staff and its wage bill grew during the three years 1947, 1948 and 1949.

	1947	1948	1949
Strength of staff—No. . . . .	2,844	2,937*	2,841*
Monthly wage bill—Rs. lakhs . . . . .	5.48	6.80*	7.53*

\*After making appropriate allocations for Air-India International.

[TABLE No. 5]

A rough measure of the overall productive efficiency of a company is the capacity ton-miles performed by that company for each member of its staff. Air-India (shows the lowest figure in India, viz., 3,613, if the maintenance and overhaul personnel are included in the strength of its staff, and 6,200 if they are excluded.) We quite appreciate that there are factors to be taken into consideration in this matter, such as (dispersed nature of the routes, routes with

short stages, routes with very low frequencies, a good deal of agency work for other companies, all of which might mean extra staff without corresponding direct production of capacity ton-miles.) Many of these do not apply to Air-India, but after allowing for those which do, we are unable to escape the conclusion that (Air-India's high cost is due to its employing very much more staff than are required for its work.

45. **Considerable spare capacity in its organisation.**—Indeed, Air-India has admitted that it has a very large spare capacity. The Company has explained that when it was formed in 1946 it started to build up its organisation for an ultimate operation of 50,000 flying hours per annum with all the necessary engineering equipment to carry out its own maintenance, repairs and overhaul. The Company had to establish its own workshops as there was no other organisation capable of undertaking repairs and overhaul and the position of Hindustan Aircraft Limited was uncertain. During the three years 1947 to 1949, a number of new companies besides the four mentioned in the post-war plans were licensed by the Air Transport Licensing Board to operate these services and some of these were on Air-India's routes competing with it and affecting its traffic. The organisation built up by Air-India did bear fruit in that it was utilised to establish Air-India International. Even so, the Company says, it still has a large capacity which could not be utilised for want of licences to operate routes and frequencies.) The Company has stated further that the remedy was to cut down staff and despite the difficulties involved in effecting retrenchment, a considerable number of staff has been discharged. The Assam Air Lift towards the end of 1949 and in early 1950 provided some extra work, but as these operations are now tapering off, further retrenchment will have to be undertaken. Meanwhile, the Company has given notice to the staff proposing stoppage of increment for 12 months and this seems to have given rise to conciliation proceedings.

46. **High scales of salaries at the upper levels.**—The Committee is also of the view that the scales of pay including various allowances obtaining in Air-India, more specifically at the upper levels, are unduly high. The table given in para. 44 shows that though there has been a slight drop in the strength of staff from 1948 to 1949, the Company's wage bill has continued to rise steadily. Air-India has in reply drawn attention to the fact that Bombay is an expensive place and that the cost of living has sharply risen during 1948 and 1949. It points out that the high scales of wages and salaries in Aviation are also due to the scarcity of certain categories of staff. The Company has explained that 90 per cent. of its total wage bill comes within the scope of scales either fixed as a result of collective bargaining, adjudication or conciliation, or dictated by the results of such proceedings, e.g., scales of pay for supervisory staff have of necessity to be higher than the scales of pay for lower staff fixed as a result of collective bargaining or adjudication proceedings. We consider that while high scales have contributed to some extent to the high cost of the Company, the principal reason is excessive staff in perhaps all the grades except that of flying personnel. We agree it will be difficult to bring down the scales of pay suddenly. These could be left to adjust themselves in the near future, partly as a result of the re-organisation plans we have suggested in Chapter 6 which would throw into the field a considerable number of qualified technical personnel with experience, and partly as a consequence of the increasing number of young men qualifying for this work, which would result in the disappearance of the scarcity situation.

47. **Unnecessarily large fleet of Dakotas.**—The fleet that Air-India should require for the operation of its services, allowing for reasonable reserve, would be (9 Dakotas and 7 Vikings.) Actually, its fleet consists of 14 Dakotas and 7 Vikings.) The Company's aircraft utilisation for the year 1949 was, as already

mentioned, about 1450 hours for the Dakotas and about 1350 hours for the Vikings. There is ample room for this utilisation to be increased and any additional frequencies or routes which Air-India may get should be operated with the existing fleet so as to increase the utilisation. Similarly, any charter work that might be forthcoming should be carried out with the existing fleet. There is no doubt that carrying the extra 5 Dakotas has contributed to some extent to the high costs of Air-India.

**48. Elaborate training organisation.**—We notice that Air-India had maintained an elaborate training organisation as follows:—

- (1) Qualified flying instructors and sufficient serviceable aircraft to meet training arrangements on a reasonable scale.
- (2) Two Link Trainers with two full-time flying instructors.
- (3) A Navigation School with a full-time navigation instructor and the necessary equipment for the training of pilots up to the navigational standards specified by the International Civil Aviation Organisation.
- (4) A special technical school with instructors for the training of pilots in the mechanical aspects of the types of aircraft operated.

Recently, it closed down its school for apprentice-ground engineers. It has also reduced some staff under items (1) and (4) in as much as it has now one Flight Superintendent and one Ground Instructor. We recognize that Air-India has done very valuable work in the past in training up Indian technical personnel and that this was possible because of its efficient training organisation. For the future, however, with development expected to be on a comparatively small scale, the need for training pilots should be limited. Provision would be required only for normal wastage and replacement and refresher and conversion courses for the Company's existing staff. For this purpose, no elaborate organisation would be necessary. (We suggest that Air-India should prune its training organisation to a size commensurate with its actual requirements.)

**49. Large stock of spares.**—The Company has laid in stock a large quantity of Dakota spares obtained from Disposals after the War. This has resulted in a certain amount of capital being tied up. Air-India has explained that it had to provide itself for the period for which Dakota aircraft were expected to be in service. The Company had actually been warned by Government that the Disposals Organisation would either scrap the unsold spares or sell them to others and that those who needed Dakota spares should purchase and lay up for the future also.

**50. Necessity for consolidation.**—While Air-India's progressive outlook in building up a large organisation has not been entirely unfruitful,—we recognize that it was due to its having had a ready-made organisation that it was possible for Air-India International's Constellation operations to the United Kingdom to be carried out so smoothly and successfully,—we should say (the time for consolidation has now come). With the present air traffic potential in India and its prospects for the immediate future, Air-India is not likely to get any more route mileage. As pointed out above, any additional flying hours which might come its way due to the increase of frequencies on its existing routes should be used to increase the utilisation of its existing equipment. The Company should, therefore, now re-organise itself in such a way as to carry out its work much more economically. In their oral evidence before us, the representatives of Air-India assured us that the Company was taking steps to reduce its costs. We hope that the strength of its staff will be brought down to a level more in relation to the Company's work. (We realise this cannot be done suddenly and can only be carried out over some period of time.)



## Section (3)—Indian National Airways

51. **Brief history of its operations up to 1947.**—Indian National Airways was formed in May 1933 and commenced on 1st December of that year the operation of air services between Calcutta and Rangoon and Calcutta and Dacca. In December 1934, the Company established an air mail service between Karachi and Lahore linking with Imperial Airways' service at Karachi. When the Empire Air Mail scheme came into force in 1938, Indian National Airways, along with Tata Airlines, was Government's instrument for the carriage of mail within India under the Scheme. The agreement which was concluded between Government and Indian National Airways for the purpose provided for the operation of 5 services a week on the route and for a guaranteed minimum remuneration to the Company of Rs. 3.25 lakhs per annum for the carriage of mail up to 130,000 lbs. with an additional payment at the rate of Re. 1/- per lb. extra, and free landing and housing facilities on the route. Half way through 1935, the Company had to abandon the operation of its services to Dacca and Rangoon as the services proved uneconomical and resulted in a loss of Rs. 5 lakhs. Towards the end of 1938, the Company commenced operation on the Lahore-Delhi route thrice a week. (Thus on the eve of the outbreak of the War in September 1939, Indian National Airways along with Tata Airlines had been responsible for carrying out all the pioneering work in the development of scheduled air transport services in this country.) With the declaration of the War, Indian National Airways' organization was wholly diverted to serve the needs of the War effort. In support of the Royal Air Force Transport Command, the Company operated a large number of services in widely dispersed areas, as follows:

Delhi—Karachi

Calcutta—Dinjan

Calcutta—Jorhat

Calcutta—Gaya—Allahabad—Kanpur—Delhi

Lahore—Multan—Jacobabad—Karachi

Lahore—Gujrat—Rawalpindi—Peshawar

Lahore—Jacobabad—Quetta

Delhi—Bhopal—Hyderabad—Bangalore—Tiruchirapalli—Colombo

Delhi—Jodhpur—Karachi

Delhi—Ahmedabad—Bombay, etc.

Special mention should be made of the valuable part played by the Company in the evacuation from Burma. During the War, the Company's fleet was strengthened by the loan of Lend-Lease aircraft by Government and it was paid remuneration for its services on a "cost plus" basis. At the end of the War, the Lend-Lease Aircraft were withdrawn, but like Tata Airlines, Indian National Airways equipped itself with Dakotas purchased from the Disposals stocks. Later it strengthened its fleet by the acquisition of a number of Viking aircraft. With the relaxation of wartime restrictions in the beginning of 1946, the Company resumed commercial operations. When the new rules relating to licensing of scheduled air transport came into force in October 1946, the Company was operating the following routes and got provisional licences in respect of them:—

Calcutta—Allahabad—Kanpur—Delhi—Lahore—Rawalpindi—Peshawar

Delhi—Jodhpur—Karachi

Delhi—Lucknow

Lahore—Bikaner—Jodhpur—Ahmedabad

Karachi—Quetta—Lahore.

(The Company had applied to the Air Transport Licensing Board for licences for a large number of routes, but got licences only in respect of a few.)

52. **Its operations after Partition of India.**—With the Partition of India some routes in respect of which Indian National Airways held licences, viz.,

Delhi—Lahore—Rawalpindi—Peshawar and  
Karachi—Quetta—Lahore

fell in Pakistan and were thus lost to the Company. Soon after Partition, it was licensed to operate between Calcutta and Rangoon. In common with other companies, it took part in the evacuation of refugees after Partition and in the Kashmir operations. The Company was the Principal Agent in India for B.O.A.C. from 1938 to 1948 and general agents for various international airlines such as Air France, K.L.M., etc. In 1946, the Company flew 1,968,000 miles and carried roughly 34,000 passengers, 647,000 lbs. of freight, and 236,000 lbs. of mail, the total transportation amounting to over 1,903,000 ton-miles.

53. **Existing routes, fleet and financial results for 1947-48, 1948-49 and 1949-50.**—Indian National Airways was on 1st July 1950 operating the following services with the frequencies mentioned against each:—

Delhi—Calcutta	Daily
Delhi—Jodhpur—Karachi	3 services a week
Delhi—Lahore	Daily
Calcutta—Rangoon	Daily
Delhi—Amritsar—Jammu—Srinagar	3 services a week
Jammu—Srinagar	4 services a week
Delhi—Amritsar—Srinagar	4 services a week
Delhi—Srinagar	Daily

The Company's route mileage is 3680 and the above operations involve 13,333 flying hours a year. On 1st April 1950, the Company's fleet consisted of 11 Dakotas and 5 Viking besides a few smaller aircraft. Its aircraft utilisation for the year 1949-50 was 789 hours for Dakotas and 640 hours for Vikings. The total transportation performed by the Company during the three years ended 30th June 1948, 30th June 1949 and 30th June 1950 was 3,737,000 ton-miles; 2,751,000 ton-miles; and 3,082,000 ton-miles respectively. The Company's expenditure and revenue respectively were Rs. 131 lakhs and Rs. 122 lakhs for 1947-48; Rs. 106 lakhs and Rs. 94 lakhs for 1948-49; and Rs. 102 lakhs and Rs. 97 lakhs for the year 1949-50. (The figures for 1949-50 are on the basis of actuals for the first 9 months.) Thus, its operations resulted in a loss of Rs. 9 lakhs in 1947-48, of Rs. 12 lakhs in 1948-49 and Rs. 5 lakhs in 1949-50. The revenue for 1949-50 includes the financial assistance given by Government in the shape of partial rebate of duty on aviation fuel. This was roughly Rs. 5½ lakhs in the case of Indian National Airways and if it were excluded the loss for the year would be over Rs. 10 lakhs. We notice that the Company has not been insuring its equipment. The loss would have been still higher if this were taken into account.)

54. **I.N.A.'s operating costs and revenue per mile of transportation.**—The following table shows Indian National Airways' costs and revenue in terms of annas per mile of transportation performed by it during the three years—the Costs and Revenue being broken down as in the case of Air-India:—

## Annas per mile

	1947-48	1948-49	1949-50
<b>Costs.—</b>			
Direct . . . . .	70.2	67.8	61.2
Other . . . . .	20.5	21.0	18.2
<b>TOTAL</b> . . . . .	<b>90.7</b>	<b>88.8</b>	<b>79.4</b>
<b>Revenue.—</b>			
Transportation . . . . .	77.4	71.5	69.3
Other . . . . .	6.8	6.6	6.5
<b>TOTAL</b> . . . . .	<b>84.2</b>	<b>78.1</b>	<b>75.8</b>
<b>Net results.—</b>			
Profit . . . . .	..	..	..
Loss— . . . . .	—6.5	—10.7	—3.6

[TABLE NO. 6]

The transportation performed by I.N.A. shows a heavy decline from 1947-48 to 1948-49 and though it picked up again in 1949-50, it is still considerably below the magnitude of transportation performed in 1947-48. The cost per mile has come down, but the revenue also has dropped sharply.)

55. **Brief review of financial position as disclosed by the latest available balance sheet for 1948-49.**—The following is a review of the financial position of Indian National Airways as disclosed by its Balance sheet for the year 1948-49. The paid-up capital of the Company is Rs. 88.71 lakhs. The written down value of the fixed assets as on 30th June 1949 was Rs. 49.28 lakhs. The floating assets on that date amounted to Rs. 68.18 lakhs and the corresponding liabilities Rs. 50.05 lakhs leaving a surplus of Rs. 18.13 lakhs. The total assets on 30th June 1949 would thus amount to Rs. 67.41 lakhs as against a paid-up capital of Rs. 101.22 lakhs inclusive of Rs. 12.51 lakhs premium on shares, i.e., a net deficit of Rs. 33.81 lakhs.]

56. **Cause of decline in the fortunes of I.N.A.**—This Company, we notice, has been unfortunate even at the start of its operations; Its pioneering efforts in operating air services between Calcutta and Dacca and Calcutta and Rangoon resulted in a loss. The 1938 airmail contract following the introduction of the Empire Airmail Scheme and the "cost plus" operations during the War seem to have put it on a fairly stable financial footing, but its fortunes have waned after the War. (On the eve of the new phase of development after the end of the War, Indian National Airways had built up a sound administrative and operating organisation with workshop and engineering facilities and at that stage it was probably considered to be, in strength of resources and organisation and experience of operations, second only to Air-India.) When the rules relating to the licensing of scheduled air transport came into force and the Air Transport Licensing Board commenced working,

Indian National Airways doubtless expected that with its experience, standing and its pioneering efforts in developing scheduled air transport in India over more than a decade, it stood a very good chance of being given licences to operate over a good number of routes. What actually happened was the entry of new operators into the field and the grant by the Air Transport Licensing Board of licences to a number of these, some of whom were licensed to operate on the same routes as Indian National Airways. Then Partition came and hit the Company very hard. Some of the remunerative routes which it had developed were in that part of India which became Pakistan, viz., Karachi—Quetta—Lahore, Delhi—Lahore—Rawalpindi—Peshawar, and were no longer available to it for operation. Even on the routes which should normally be quite remunerative like Delhi—Karachi and Delhi—Lahore, the traffic fluctuated widely due to the unstable conditions in India and Pakistan after Partition. The traffic seems to have been affected by the restrictions on travel between the two countries, such as the permit system, and the load factor on these services, except during an initial period, has remained comparatively low. The whole of the area of Calcutta, East Pakistan and Assam which was the field of its first operations and development was no longer available to the Company. An additional operator, viz., Bharat Airways, had obtained a licence on the Delhi—Calcutta route. On the Delhi—Amritsar route also, both Bharat Airways and Indian National Airways were licensed. (Thus the Company found itself in a situation in which there was only restricted scope for the use of its equipment and facilities. This is amply borne out by the fact that during the 3 years 1947-48 to 1949-50, the fleet utilisation achieved by Indian National Airways was 461 hours, 834 hours, and 789 hours for Dakotas and 818 hours, 835 hours and 640 hours for Vikings. (No operations can be carried on on an economic basis on this low utilisation.) It is clear therefore that what Indian National Airways requires is greatly increased utilisation of flying equipment. The Company's present group of routes is fairly compact, but some of the services are being operated at a frequency of only 3 or 4 services a week. (We feel that it should be possible for Indian National Airways to develop traffic on its routes and progressively increase the frequencies, which will automatically give it additional work. It cannot be stated, for instance, that the Delhi—Calcutta, Delhi—Srinagar, Delhi—Karachi, Delhi—Lahore and Calcutta—Rangoon routes are unremunerative. (The potential is there and we cannot help feeling that there is considerable room for improvement in the methods employed by the Company for attracting traffic.) In regard to additional routes, we have considered this matter in Chapter 7 and have made suitable recommendations. We would here only say that if Indian National Airways which is well-equipped and has good facilities is to continue to exist on an economic basis, it should have come more work.)

57. **Company's high cost of operation.**—As in the case of Air-India, we have found that the operating costs of Indian National Airways are very high. Its operating cost for a Dakota for the year 1949-50 was Rs. 756-17 per hour on a utilization of 790 hours, which on the Company's average block speed of 150 miles per hour came to Rs. 5-0-8 per mile. It should be borne in mind that this cost does not include any provision for insurance. The extent of the Company's high cost will be clear when it is compared with the reasonable cost which the Committee has worked out for the Dakota in Chapter 5, viz., Rs. 668 per hour for the same utilization. We have scrutinised Indian National Airways' figures under the several heads constituting the operating costs detailed in Question 6(i) of our Questionnaire and have found, as in the case of Air-India, that its expenditure has been unduly high in those items which are capable of being controlled by efficiency of management, viz., aircraft servicing, aircraft and engine overhaul, operation on-costs, training, passenger

service, traffic and sales, administration, office rents and expenses, general publicity and advertising, medical and welfare, accounts and audit and miscellaneous.) The total of its costs per hour under these heads comes to a figure next only to Air-India's. We are of the view that there is room for very considerable economy under all the above heads.

58. **Large spare capacity in workshops and disproportionate number of pilots to co-pilots.**—We have examined the particulars furnished by the Company in respect of the work done in its workshops on servicing and overhaul of its equipment. We find that the existing capacity is nearly double that of what the Company actually needs. Thus the Company's workshop facilities remain to a large extent, idle facilities, which inevitably contribute to its high expenditure figures. One curious fact we have noticed in Indian National Airways' reply relating to the categories of its personnel is that the proportion of its captains to co-pilots is very high, so high that one could even say that Indian National Airways' pilot are practically all captains.) The Company should take steps to check the continuance of this rather unbalanced structure)

59. **Ambitious and costly ventures.**—The Company's difficulties are also due to certain ambitious and costly ventures in the purchase of new types of equipment still in the developmental stage. In 1946 it purchased a number of Bristol Wayfarers which, for one reason or the other, the Company was not able to utilise. After a long period during which these aircraft remained for the most part grounded, they were sold off. In respect of its Vikings also, the Company, being the first operator in India of this new type of aircraft, encountered a lot of difficulties as several modifications had to be carried out as a result of actual experience of operation.

60. **Unnecessarily large fleet of Dakotas.**—For the operation of the Company's present routes, it should require not more than 6 Dakotas and 5 Vikings against its present fleet strength of 11 Dakotas and 5 Vikings. As pointed out earlier, (its utilisation is very low and the extra 5 Dakotas continue to add to its high costs of operations.)

61. **Necessity for reducing costs of operation and attracting traffic.**—To sum up, the Company should apply itself now to reducing its expenditure so as to achieve the reasonable costs of operations which we suggest in Chapter 5 and also (make vigorous endeavours to attract traffic for its existing operations.) We have to add that we were (not entirely satisfied with the way in which the accounts of Indian National Airways had been maintained.) We were left with a feeling that its cost figures, particularly in regard to allocation of costs in the maintenance and overhaul workshops, were not entirely accurate. We also found that the figures given by the Company in regard to carriage of mails were not dependable. We also notice that the Company has for some time stopped insuring its aircraft. In an undertaking of this type, we think it a prudent precaution to insure one's fleet as most companies in India do and we trust that Indian National Airways will not in future depart from this wholesome practice.)

#### *Section (4)—Air Services of India*

62. **Brief history of its operation.**—Air Services of India was incorporated in 1937 and commenced operation in October of that year.) Between 1937 and 1939, the Company operated services on the route Bombay—Bhavnagar—Rajkot—Jamnagar—Porbandar on a frequency which during certain periods was as high as 6 times a week and on the routes Bombay—Baroda and Bombay—Kolhapur on a frequency of two services a week. (The advantage of air travel over surface transport in the Kathiawar area combined with the very

low fares charged by Air Services of India (which were a little over the corresponding second class rail fares) attracted large passenger traffic to the Company's services. The revenue, however, was not sufficient to meet the costs which were near the First Class rail fares and the Company had to suspend its activities in 1940. In 1943, the Managing Agency of the Company was acquired by Messrs. Scindia Steam Navigation Company. The new organisation purchased a number of Dakota aircraft from the Disposal stocks and new DH-89 Rapides and recommenced operations in 1945. The Company's first service Bombay—Jamnagar—Bhuj was opened on 3rd May 1946 on a daily frequency and was extended to Karachi in July 1946. The Company was permitted to operate on the route Bombay—Indore—Bhopal—Kanpur—Lucknow on a bi-weekly frequency with effect from 28th June 1946. It also started a service on the route Porbandar—Jamnagar—Wankaner. On the coming into force of the new rules relating to the licensing of air transport services, Air Services of India got provisional licences for the following routes:

Bombay-Jamnagar-Bhuj-Karachi	Daily
Bombay-Bhopal-Kanpur-Lucknow	Once a week

In April 1947, Air Services of India obtained a provisional licence for operation over the route Bombay—Indore—Gwalior—Delhi. Due to the unsuitability of the Indore aerodrome, however, the actual route operated was Bombay—Gwalior—Delhi. Along with other operators, Air Services of India participated in the evacuation of refugees by air after Partition and the Kashmir operations. The Company's operation of the Bombay—Bhopal—Kanpur—Lucknow service proved an expensive experiment as it involved the Company in a loss of over Rs. 9 lakhs in the year 1946-47. The service was suspended in October 1947. In 1949, on Ambica Airlines going into liquidation, two of that Company's routes, viz., Bombay—Rajkot—Morvi and Bombay—Poona—Bangalore, were allotted to Air Services of India by the A.T.L.B. The Company found that its load factor on some of its routes was uneconomically low for Dakota operations, e.g., Bombay—Gwalior—Delhi and Bombay—Poona—Bangalore and thought that it would be more economic to operate on such routes with smaller aircraft of lower seating capacity. It accordingly investigated the suitability of new types and decided that the (French aircraft, SO-95, which had a seating capacity of 10, would meet the Company's requirements.) Air Services of India acquired one SO-95 in 1949 and another in 1950. These aircraft are being operated on the Company's Bombay—Poona—Bangalore and Bombay—Gwalior—Delhi routes.

63. Existing routes, fleet and financial results for 1946-47, 1947-48 and 1948-49.—Air Services of India was on 1st July 1950 operating the following routes with the frequencies mentioned against each:—

Bombay-Jamnagar-Bhuj-Karachi	4 service a week
Bombay-Keshod-Porbandar-Jamnagar-Bhuj	3 service a week
Bombay-Indore-Gwalior-Delhi	3 services a week
Bombay-Bhavnagar-Rajkot	Daily
Bombay-Poona-Bangalore	4 services a week

The route mileage is 2548 and the above operations involve 6474 flying hours per annum. The Company's fleet on 1st April 1950 (consisted of 8 Dakotas, 2 SO-95's, 3 DH89 Rapides and a few smaller aircraft) Its aircraft utilisation for the year 1948-49 was 978 hours for Dakotas. The total transportation performed by the Company during the 3 years ended 30th June 1947, 30th June 1948 and 30th June 1949 was 932,000; 1,662,000, and 1,847,000 ton-miles respectively. Its expenditure and revenue, respectively, were Rs. 43 lakhs and

Rs. 26 lakhs in 1946-47; Rs. 76 lakhs and Rs. 80 lakhs in 1947-48; and Rs. 70 lakhs and Rs. 65 lakhs in 1948-49. Thus, the (Company incurred a loss of nearly Rs. 17 lakhs in 1946-47, made a profit of nearly Rs. 4 lakhs in 1947-48 and again met with a loss of about Rs. 5 lakhs in 1948-49.)

64. **A. S. I's operating costs and revenue per mile of transportation.**—The following table shows Air Services of India's Costs and Revenue in terms of annas per mile of transportation performed by it during the 3 years.

*Annas per mile.*

	1946-47	1947-48	1948-49
<i>Costs.</i> —			
Direct . . . . .	56.0	55.2	52.7
Other . . . . .	19.7	16.1	18.2
<b>TOTAL</b> . . . . .	<b>75.7</b>	<b>71.3</b>	<b>70.9</b>
<i>Revenue.</i> —			
Transportation . . . . .	43.2	73.9	65.2
Other . . . . .	3.1	0.9	2.5
<b>TOTAL</b> . . . . .	<b>46.3</b>	<b>74.8</b>	<b>67.7</b>
<i>Net result.</i> —			
Profit . . . . .	..	- 3.5	..
Loss — . . . . .	-29.4	..	-3.2

[TABLE No. 7]

Air Services of India has also furnished to us figures for the second half-year of 1949. According to these, its Costs and Revenue per mile during that period were respectively 74.8 annas and 52.2 annas, resulting in a heavy loss of 22.6 annas per mile. The Company's costs were progressively coming down up to 1948-49, but have gone up again during the latter half of 1949. In regard to Revenue, it was very low in 1946-47, but picked up very substantially in the next year due, of course, to the charter operations connected with refugee evacuation and Kashmir operations. It went down somewhat in 1948-49, but in the second half of 1949, the Revenue has registered a steep drop and has gone very nearly to the 1946-47 level. Thus the loss for the latest period for which figures are available (*viz.*, latter half of 1949) is not very different from that in 1946-47. (Barring Indian Overseas Airlines, Air Services of India's was the heaviest loss per mile amongst the operators for the period for which financial statistics were submitted to us.)

65. **Brief review of the financial position as disclosed by the latest available Balance Sheet for 1948-49.**—The following is a review of the financial position of the Company based on its published accounts. The paid-up capital of Air Services of India is Rs. 90.79 lakhs. The latest available audited Balance Sheet of this Company is for the year ended 30th June 1949. The original cost of fixed assets on that date was Rs. 25.95 lakhs. A sum of Rs. 13.37 lakhs has

been written down as depreciation which is reasonably correct, leaving a residual value of Rs. 12.58 lakhs. The floating assets on that date amounted to Rs. 75.62 lakhs and the corresponding liabilities were Rs. 17.83 lakhs, leaving a surplus of Rs. 57.79 lakhs. Thus, the total value of fixed assets and floating assets on that date was Rs. 70.37 lakhs as against a paid-up capital of Rs. 90.79 lakhs, or a net deficit of Rs. 20.42 lakhs.

**66. Disadvantages under which the Company operates.**—Air Services of India, since it recommenced operations after the War, seems to have been meeting with a series of reverses except for the year 1947-48 when it showed a profit of Rs. 4 lakhs and this was wholly due to the fortuitous earnings of the Company during that year from the charter work done for Government in the evacuation of refugees and in the Kashmir Operations. But for this abnormal revenue, it would have shown a heavy loss in that year also. The Company's difficulties are partly due to certain disadvantages of the system of routes for which it holds licences. These are:—

- (a) the routes are spread over a wide area and the intensity of operation is low, making it difficult to achieve adequate utilisation of staff and flying equipment;
- (b) the routes in Kathiawar area, besides being short in themselves, involve a number of still shorter stages, requiring maintenance of staff and facilities on much larger scale than would normally be necessary, and
- (c) the routes seem to be for some part unremunerative, in that, even with frequencies less than daily, the load factors are low.

**67. Costly experiments.**—The Company also experimented on an unremunerative route resulting in heavy loss, viz., Bombay—Bhopal—Kanpur—Lucknow, which it had eventually to give up. Doubtless with the best of intentions, to achieve economy and efficiency of operation, the Company has re-equipped itself, though on a small scale, by acquiring two aircraft of a new type. We have gone into the cost figures of the SO-95's on the basis of the statistics submitted to us by Air Services of India. We have found that, in the best of circumstances, the cost per seat mile for operating the SO-95 would be higher than that for a Dakota. SO-95, being a new type has not been as economical as expected in servicing and overhaul. Air Services of India has had to incur expenditure on the establishment of special overhaul facilities for this aircraft. In regard to engines, the Company tried sending a few to France for overhaul but found the cost to be prohibitive. We understand that, with the help of the manufacturers, Air Services of India is now putting up an SO-95 engine overhaul section in its workshops. This again will be expensive and the cost of overhaul of the engines required for just two aircraft is not going to be economical. In the oral evidence, the representatives of the Company stated that when its engine overhaul organisation gets going the Company was expecting to get SO-95 engines from French Indo-China for overhaul, and that this would help to distribute its overhead costs over a larger number of units. We do not know whether this will materialise, but with the experience of the cost of operation of this aircraft so far, and in the light of the reasonable cost estimate of SO-95 operations as given in Chapter 5, we cannot help coming to the conclusion that it is not likely to prove an economic success in this country.

**68. Competition with Ambica Airlines for limited traffic.**—The Company's position, difficult as it has been, was made much worse by the grant of licences by the A.T.L.B. to Ambica Airlines early in 1947 to operate services in the Kathiawar Area, practically in direct competition with Air Services of India. It should have been quite clear that there was insufficient traffic for two companies



in this restricted area. Air Services of India incurred heavy losses but somehow has managed to remain in the field. Ambica Airlines could not stay the course and went into liquidation in 1949. (The grant of licences to both companies has not been good for either.)

69. **Excess fleet of Dakotas.**—The Company's present fleet includes 8 Dakotas and 2 SO-95's while for the operation of its routes, it should not require more than 3 Dakotas and 2 SO-95's including the necessary reserves. The Company is thus carrying an extra load of 5 Dakotas, which add to the cost of its operations.

70. **Desirability of fusion with other operators.**—We are of the view that the present routes of the Company are not sufficient to support an operating unit and if we take into account the comparatively low traffic potential on them it is clear that Air Services of India cannot continue to exist on an economic basis on the existing routes. We are also very doubtful if the Company will at all be wise in continuing to retain the SO-95's. The Committee thinks that the only possibility of the Company continuing to exist with chances of making its operations economic in a foreseeable period is by combining with some other operating organisation and thereby obtaining a group of routes which would make an economic unit.) In Chapter 7, where we have considered the question of improving the position of the Industry, we have made appropriate recommendations in this regard.)

#### *Section (5)—Deccan Airways*

71. **Brief history of its operations.**—Deccan Airways was established in September 1945. On 1st July 1946, the Company commenced operation on the Madras—Hyderabad—Nagpur—Bhopal—Gwalior—Delhi route on a bi-weekly frequency, which was increased to thrice weekly from 1st August of that year. The Company also commenced operation of a bi-weekly service between Hyderabad and Bangalore on 1st July 1946. The frequency of the Delhi—Madras service was increased to daily early in the following year. In February 1947, the Company started operating on the Hyderabad—Bombay route. On 1st September of that year, the frequency of the Hyderabad—Bangalore route was increased to daily. Following Partition, Deccan Airways took part in the charters connected with the evacuation of refugees and Kashmir operations. During the period from 2nd July to 15th October 1948, the Company's operations remained suspended due to the Hyderabad Police Action. In 1949, the Company tried operating on three feeder routes in South India, viz., Hyderabad—Vijayawada—Visakhapatnam, Vijayawada—Madras and Madras—Thiruchirappalli—Madurai, but had to abandon them after a short period as they proved uneconomic. From 14th May to 9th June 1949, the Company operated the Madras—Nagpur leg of the Night Air Mail Service when Indian Overseas Airlines suspended activities due to financial difficulties.

72. **Existing routes, fleet and financial results for 1947, 1948 and 1949.**—The present paid-up capital of Deccan Airways is Rs. 55.71 lakhs of which 71.6 per cent. is held by the Hyderabad Government, the balance being held by Messrs. Tata Sons Limited, and the public.) On 1st July 1950, the Company was operating the following routes on a daily frequency:—

Madras—Hyderabad—Nagpur—Delhi

Hyderabad—Bombay.

Hyderabad—Bangalore.

The Company's route mileage is 1819 and the above operations involve 833½ flying hours per annum. Its fleet on 1st April 1950 consisted of 13 Dakotas and one or two small aircraft. Its utilisation for the year 1949 was 1127 hours. The total transportation performed by the Company during the 3 years 1947, 1948 and 1949 was 1,704,000; 1,542,000; and 1,960,000 ton-miles respectively.

The Company's expenditure and revenue respectively were Rs. 44 lakhs and Rs. 43 lakhs in 1947; Rs. 49 lakhs and Rs. 49 lakhs in 1948; and Rs. 71 lakhs and Rs. 53 lakhs in 1949. The Company incurred a small loss of Rs. 35,000 in 1947; made a small profit of Rs. 56,000 in 1948; and incurred a heavy loss of Rs. 18 lakhs in 1949. (The revenue during 1949 includes the financial assistance given by Government in the shape of petrol rebate of duty on aviation fuel.) If this were excluded, the loss for the year would be about Rs. 21 lakhs.

73. **Deccan Airways' operating costs and revenue per mile of transportation.**—The following table gives the Costs and Revenue of Deccan Airways in terms of annas per mile of transportation performed.

*Annas per mile.*

	1947	1948	1949
<b>Costs—</b>			
Direct . . . . .	39.5	52.0	53.4
Other . . . . .	12.1	15.8	15.4
<b>TOTAL</b>	<b>51.6</b>	<b>67.8</b>	<b>68.8</b>
<b>Revenue—</b>			
Transportation . . . . .	50.5	60.6	47.4
Other . . . . .	0.7	7.9	4.6
<b>TOTAL</b>	<b>51.2</b>	<b>68.5</b>	<b>52.0</b>
<b>Net result—</b>			
Profit . . . . .	..	+ 0.7	..
Loss — . . . . .	-0.4	..	-16.8

[TABLE No. 8]

Deccan Airways\* furnished to us its financial results for the first quarter of 1950 and according to them, its Costs and Revenue per mile for that period were 58.9 annas and 47.5 annas respectively. The loss was thus 11.4 annas a mile. While the Company's Costs had been going up during the three years 1947 to 1949, it has substantially come down during the first quarter of 1950. Unfortunately, its Revenue also has been progressively declining from 1948 and the fall was precipitous in 1949. The net result is better in the first quarter of 1950 than for the year 1949, primarily because the Company has drastically cut down its costs.

74. **Brief review of the financial position of the Company as disclosed by the latest available balance sheet.**—The following is a review of the Company's published accounts. The latest audited accounts available for this Company are for the year ended 31st December 1948. The Company has however furnished a provisional statement of revenue and expenditure for the year ended 31st

December 1949 and this review is based on these two sets of accounts. The original value of the fixed assets is Rs. 38 lakhs. Depreciation, at the rates authorised for income-tax purposes, will, according to our calculations, amount to about Rs. 26 lakhs, whereas the Company has provided only about Rs. 13 lakhs. The accumulated loss shown by the Company in the provisional account for the year ended 31st December 1949 is Rs. 20.42 lakhs, which, with the difference of Rs. 13 lakhs in depreciation referred to above, will increase it to Rs. 33.42 lakhs. There is also a sum of Rs. 2.06 lakhs shown against "Income and Expenditure accounts" by the Company, as an asset which, in our opinion, is a nominal asset. This again will increase the total loss on 31st December 1949 to Rs. 35 lakhs.

75. **Causes of decline in its fortunes in 1949.**—Deccan Airways is operating a compact set of routes and should be expected to do well provided the traffic comes up to a reasonable load factor. Our examination of the Company's figures confirms that it did not fare badly during 1947 and 1948. Indeed, the Company's operating cost for 1949 was very close to the figure which we have estimated to be the reasonable minimum cost of Dakota operation. Deccan Airways' cost of operation for a Dakota during 1949 was Rs. 625.09 per hour which at an average block speed of 150 miles per hour is equivalent to Rs. 4.2.7 per mile. The corresponding reasonable cost according to our estimate for 1100 hours utilisation is Rs. 4.1.5 per mile. One of the main reasons for the Company's present difficulties is the introduction of the Night Airmail Scheme on its routes all of which have suffered in greater or less measure. On the Delhi—Madras route in particular, Deccan Airways has lost the bulk of the mail to Himalayan Aviation and the low fares and freight rates on the night service have caused a considerable diversion of passenger and freight traffic also from Deccan Airways. The Company has in consequence been compelled to reduce fares and at the same time is taking action to reduce costs by retrenchment and other measures. The Company is also meeting with competition on the Bombay—Bangalore route from Air Services of India. Thus, a situation which could normally be expected to be stable has, due to these adverse factors, reached a stage where Deccan Airways cannot continue with its operations except at heavy losses. We are suggesting in a later Chapter how, if at all, the position could be rectified.)

76. **Excess capacity of its workshop facilities.**—We would particularly like to mention that we were impressed by the neat and efficient arrangement of this Company's base facilities and workshops at Hyderabad. But there is no doubt that the Company's work is not sufficient to utilize the entire capacity of these facilities.)

77. **Unnecessarily large fleet of Dakotas.**—Finally, Deccan Airways' fleet of Dakotas, viz., 13, is far too large. Considering the magnitude of its operations, it should be able to manage with about half the number.)

#### Section (6)—Airways (India)

78. **Brief history of its operations.**—Airways (India) was registered in September 1945 and commenced operations in September of the following year by undertaking charter flights to place in Assam. In April 1947, the Company was granted a licence to operate a scheduled service on the Calcutta—Visakhapatnam—Madras—Bangalore route. The frequency of this service, to start with, was 3 times a week. Following Partition, the Company provided air connections between Calcutta and North Bengal, Assam and Agartala, but the operations were non-scheduled in character. In June 1948, Airways (India) obtained a licence to operate on the route Calcutta—Dacca on a daily frequency, which was increased to 10 services a week in the following October. During 1949, the Company obtained licences to operate scheduled services on the Calcutta—Gauhati—Dibrugarh and Calcutta—Bagdogra routes. The emergency

which arose in East and West Bengal towards the end of 1949 resulted in a considerable movement of population between the two areas. And owing to the cutting off of surface communications between Assam and Tripura on the one side and West Bengal on the other, air transport was the only means by which the situation could be tackled. Airways (India) increased the frequency on the Calcutta—Dacca route to 6 services a day. The frequency from Calcutta to Bagdogra was increased to 7 services a day and to Gauhati 12 services a day to meet the very heavy demand of freight traffic. The Company was also carrying second class mail by air between Calcutta and Gauhati. With the conditions easing off somewhat and the restoration, to some extent, of surface transport facilities, the intensity of air operations in this area is coming down. The Company's frequencies are being reduced and adjusted to meet actual requirements.

79. Existing routes, fleet and financial results for 1947, 1948 and 1949.—The present paid-up capital of Airways (India) is Rs. 21,24,750. On 1st July 1950, the Company was operating the following routes with the frequencies mentioned against each:—

Calcutta—Bhubaneshwar—Madras—Bangalore . . . . .	3 services a week.
Calcutta—Visakhapatnam—Madras—Bangalore . . . . .	4 services a week.
Calcutta—Bagdogra . . . . .	Thrice daily.
Calcutta—Gauhati—Mohanbari . . . . .	Daily.
Calcutta—Gauhati . . . . .	Thrice daily.
Calcutta—Dacca . . . . .	Thrice daily.
Calcutta—Bagdogra (Freighter) . . . . .	3 services a week.

The Company's route mileage is 2016, and the above operations involve 18,650 flying hours per annum. On 1st April 1950, its fleet consisted of (11 Dakotas and 2 DH-Doves) Its utilisation for the year 1949 was 1,533 hours for Dakotas. The total transportation performed by the Company during the three years 1947, 1948 and 1949 was 510,000; 1,500,000; and 2,100,000 ton-miles respectively. The Company's expenditure and revenue respectively were Rs. 17.43 lakhs and Rs. 17.63 lakhs in 1947; Rs. 45 lakhs and Rs. 49 lakhs in 1948, and Rs. 61 lakhs and Rs. 64 lakhs in 1949. Airways (India) made a profit of Rs. 20,000 in 1947; Rs. 4 lakhs in 1948, and Rs. 3 lakhs in 1949. The revenue during 1949 included the financial assistance given by Government in the shape of partial rebate of duty on aviation fuel. If this were excluded, the Company's operations for that year would have resulted in a loss of Rs. 1.13 lakhs.

80. Operating costs and revenue per mile of transportation.—The following table gives the Costs and Revenue of Airways (India) in terms of annas per mile of transportation performed:—

*Annas per mile.*

	1947	1948	1949
<i>Costs.—</i>			
Direct . . . . .	40.6	42.1	45.5
Other . . . . .	16.7	13.5	12.7
<b>TOTAL</b>	<b>57.3</b>	<b>55.6</b>	<b>58.2</b>

Revenue—	1947	1948	1949
Transportation . . . . .	57.6	58.0	53.5
Other. . . . .	0.5	2.2	7.2
TOTAL.	58.1	60.2	60.7
Net profit . . . . .	0.8	4.6	2.5

[TABLE No. 9]

We have received Airways (India)'s results for the first quarter of 1950 also. According to these the Company's Costs and Revenue per mile for that period were 51.4 annas and 60.2 annas respectively, resulting in a profit of 8.8 annas per mile. This Company's Costs and Revenue per mile during the whole period 1st January 1947 to 31st March 1950 show a certain stability and balance not found in the other companies. Costs have remained fairly steady, till in the first quarter of 1950 they have been brought down significantly. Revenue, again, has been maintained at a remarkably steady level. The figures, in our opinion, point to close and continuous control having been exercised over expenditure, so as to prevent it from outpacing the revenue earned by the Company.)

81. **Brief review of its financial position as disclosed by the latest available balance sheet for 1949.**—The following is a review of Airways (India)'s published accounts. Up to 31st December 1949, the Company should have provided a sum of Rs. 14,99,734 for depreciation as per rates authorised for income-tax purposes, whereas it has actually provided only Rs. 11,92,230 or Rs. 3,07,504 less. In the balance sheet for the year 1949, the Company has shown an accumulated profit of Rs. 3,38,712 as follows:—

	Rs.
Brought forward from previous year . . . . .	1,83,168
Add nett profit for the year . . . . .	3,10,123
	4,93,291
Less transfer to reserve fund . . . . .	1,50,000
	3,43,291
Less Directors' remuneration for 1948 . . . . .	4,579
Nett profit . . . . .	3,38,712

When the difference in depreciation is adjusted, the sum of Rs. 4,93,291 referred to above will be reduced to Rs. 1,85,787 (Rs. 4,93,291—Rs. 3,07,504). The written-down value of the fixed assets as on 31st December 1949 would be Rs. 29,73,055—Rs. 14,99,734 = Rs. 14,73,321. The floating assets amount to Rs. 19,89,523 and the floating liabilities amount to Rs. 11,42,888, leaving a surplus of Rs. 8,46,635. This, together with the written-down value of the fixed assets, will give a total of Rs. 23,19,956, as against a paid-up capital of Rs. 21,24,730, which is satisfactory.

82. **Satisfactory working of the Company.**—We are of the view that Airways (India) has done good work in the field of scheduled air transport. The Company started from small beginnings and progressed cautiously and steadily. Any extension of its operations seems to have been undertaken only after carefully studying all the factors involved and at no time has expansion of organisation out-run the transportation performed. There seems to have been close

and continuous control exercised in this respect. The result has been that though till recently the extent of its operations was comparatively small, and the Company's longest route (Calcutta-Madras-Bangalore) has never shown a load factor above 55 to 60 per cent., the Company has managed to keep expenditure below revenue.

**83. Operating costs in 1949.**—We have found that Airways (India) has shown the lowest figure for cost of operation of Dakota in 1949, *viz.*, Rs. 522.14 per hour which, against the Company's average block speed of 144 miles per hour, works out to Rs. 3.10.0 per mile. These figures are even slightly below the cost which we have assessed as the reasonable minimum for a corresponding utilisation, *viz.*, Rs. 571.62 per hour. There is no doubt that Airways (India) is to be congratulated on achieving its low level of costs. We have gone through the Company's detailed operational and financial statistics to see where and how it has been able to keep down costs while other companies have shown very much higher figures. (We are satisfied that the main reason for the low costs is the close control exercised over the strength of staff, which has been kept at a level very closely corresponding to the output of work of the Company as a whole.) One important point which we noticed is that the (proportion of skilled and supervisory staff to unskilled staff is higher in Airways (India) than in other companies.) This seems to have enabled Airways (India) to get the maximum productivity out of its personnel. It is true that, in certain grades of staff, this Company's salaries and wages are somewhat lower than those obtaining in other air transport concerns. Nevertheless, Airways (India) has not had an unduly high rate of staff turnover, and its efficiency suggests a high level of employee morale.) We must, however, add that, in our view, Airways (India)'s low costs were due in some measure also to the (maintenance of standards of appearance, passenger comfort and convenience, both in its booking offices and aircraft, somewhat lower than may be desirable in the long run, in view of the influence of these factors on the attraction and retention of traffic. This, as well as some adjustments in respect of servicing and overhaul of aircraft and engines (under which heads Airways (India)'s expenditure in 1949 shows a lower figure than is likely to be maintained in the future consequent on the introduction of new equipment during the year), accounts for Airways (India)'s costs being lower than the reasonable cost of operation of a Dakota as estimated by the Committee)

**84. Effect of competition from Himalayan Aviation, Bharat Airways and non-scheduled operators.**—Airways (India)'s traffic on the Calcutta-Madras route seems to have been substantially affected by the Night Airmail Service. Much of the mail load, which had come to the Company with the introduction of the All-up Mail Scheme, was diverted to the night service and its passenger and freight traffic was also adversely affected due to the lower passenger fares and freight rates charged on the night services. This is the one long route which the Company operates and which it has endeavoured to develop with a certain amount of success. From October 1949, the load factor on this route seems to be dropping. In the Bengal, Assam and Tripura areas, Airways (India) shares the rights of operation with Bharat Airways, but on one or two routes operation is being carried on on a competitive basis, *e.g.*, Airways (India)'s Calcutta-Gauhati route and Bharat Airways' Calcutta-Agartala-Gauhati route. The competition has led to some cases below the undercutting in fares and freight rates, pushing these rates in some cases below the minimum economic levels. (In the giving of further licences in this area to these two Companies, we suggest that particular care should be taken to see that there is no scope for such practices) In other words, (licences should, as far as possible, be given in such a way as to be non-competitive, and it would be preferable for the purpose to allot clearly defined areas to the two operators.) Airways (India) also suffered in its operations by the (incursion of non-scheduled operators in this area during the Assam

airline, and their unfair competitive practices. Airways (India) would probably have been able to provide much of the capacity needed, but a large number of middlemen came into the field and a good deal of transportation, which should normally have come to the scheduled operators and increased the utilisation of their capacity, got diverted to speculative charter concerns.)

(We consider that Airways (India) did pioneering work in developing air routes in the Eastern area and on the route Calcutta-Madras and, by its economy and efficiency, has built for itself a strong position. In a later Chapter, we have considered what its position should be in the new set-up.)

#### Section (7)—Bharat Airways

**85. Brief history of its operations.**—Bharat Airways was incorporated in August 1945. It first engaged in non-scheduled operations commencing from January 1947. In June 1947 the A.T.L.B. granted Bharat Airways a provisional licence on the Calcutta-Gaya-Lucknow-Delhi route with a frequency of 3 services a week. In October of that year, the Company was granted a licence for the route Calcutta-Allahabad-Kanpur-Delhi with a frequency of 4 services a week. About the end of October, it was licensed to operate between Delhi and Amritsar. In common with other operators, Bharat Airways carried out charter flights in connection with the evacuation of refugees from Western Pakistan and the Kashmir operations from September 1947 to March 1948. In June 1948, the Company started a daily service between Calcutta and Chittagong, the frequency on this route being adjusted from time to time according to the traffic needs. In the middle of 1948, Bharat Airways acquired 3 Skymaster aircraft for the purpose of operating external services to the East. We have dealt with the external operations of the Company in a later Chapter. In the middle of 1949, the Company obtained a licence to operate a daily service between Calcutta and Agartala. Early in 1950, it was granted licences to operate from Agartala and Gauhati to various points in Assam and Manipur, *viz.*, Kumbhigram, Jorhat, Tezpur, Imphal and Mohanbari. Pending the completion of ground organisation and communication facilities in that area, the Company had been carrying out charter operations in the sectors. These are now gradually being converted into scheduled services.

**86. Existing routes, fleet and financial results for 1946-47, 1947-48 and 1948-49.**—The present paid-up capital of Bharat Airways is Rs. 80 lakhs. On 1st July 1950, the Company was operating the following routes with frequencies mentioned against each:—

Calcutta—Patna—Banaras—Lucknow—Delhi	... Daily.
Calcutta—Allahabad—Kanpur—Delhi	... Once a week.
Calcutta—Chittagong	... Twice daily.
Calcutta—Agartala	... 9 services daily.
Agartala—Gauhati	... Daily.
Calcutta—Bangkok (External service)	... Once a week.

The Company's internal route mileage is 3,233 and the operations involve 17,300 flying hours per annum. On 1st April 1950, its fleet consisted of 12 Dakotas, 1 Wayfarer (since disposed of) and 2 or 3 small aircraft, apart from the 3 Skymasters which the Company is using on external operations. Its

utilisation for the year 1948-49 was 1,099 hours for Dakotas. The total transportation performed by the Company during the three years ended 30th June 1947, 30th June 1948 and 30th June 1949 was 93,000; 1,028,000; and 1,544,000 ton-miles, respectively. The Company's expenditure and revenue respectively were Rs. 10 lakhs and 4.5 lakhs in 1946-47; and Rs. 39 lakhs and Rs. 37 lakhs in 1947-48; and Rs. 52.5 lakhs and Rs. 43 lakhs in 1948-49. The Company thus incurred a loss of Rs. 5.5 lakhs, of Rs. 2 lakhs and of Rs. 9.5 lakhs, respectively, during the three years, without making any provision for depreciation. From the provisional balance sheet and profit and loss account submitted by the Company for the year 1949-50, we understand that its operations for that year have resulted in a loss of about Rs. 3 lakhs. These figures include Skymaster operations and we understand that for the year 1949-50, if Skymaster operations were excluded, the Company would have made a profit of about Rs. 3.83 lakhs. The revenue during 1949-50 includes the financial assistance given by Government in the shape of partial rebate of duty on aviation fuel. If this were excluded the loss for 1949-50 would be about Rs. 11 lakhs.

87. **Operating costs and revenue per mile of transportation.**—The following table gives the Costs and Revenue of Bharat Airways in terms of annas per mile of transportation performed:—

*Annas per mile.*

	1946-47	1947-48	1948-49
<i>Costs.—</i>			
Direct . . . . .	124.6	48.4	42.
Other . . . . .	79.1	19.0	15.2
<b>TOTAL</b> . . . . .	<b>203.7</b>	<b>67.4</b>	<b>57.3</b>
<i>Revenue.—</i>			
Transportation . . . . .	90.9	62.7	45.8
Other . . . . .	00.0	0.1	2.3
<b>TOTAL</b> . . . . .	<b>90.9</b>	<b>62.8</b>	<b>48.1</b>
<i>Net result.—</i>			
Profit+ . . . . .	..	..	..
Loss— . . . . .	—112.8	—4.6	—9.2

[TABLE No. 10]

Bharat Airways' figures for the first nine months of the year 1949-50 show its Costs and Revenue per mile for that period to be 64.5 annas and 61 annas respectively, resulting in a loss of 3.5 annas per mile. Leaving out 1946-47 during which year the Company's costs were abnormally high, its Costs were coming down during the next two years. In 1949-50, they have gone up to some extent. Bharat Airways' Revenue also had been falling steeply during the course of the three years 1946-47 to 1948-49, but during the first nine months of 1949-50, it has looked up, doubtless due to the heavy traffic loads carried by the Company in the Assam airlift.



**88. Brief review of its financial position as disclosed by the latest available balance sheet for 1948-49 and provisional balance sheet for 1949-50.**—The following is a review of the financial position of the Company based on its published accounts. The latest audited account available for the Company is for the year ended 30th June 1949. The Company has also furnished us with a provisional profit and loss account for the year ended 30th June 1950. The accumulated loss on 30th June 1950 as shown by the Company is Rs. 20.48 lakhs without providing for depreciation. An allocation for depreciation at the rates authorised for income-tax purposes would amount to about Rs. 40 lakhs, increasing the total accumulated loss to about Rs. 60 lakhs. This is against a paid-up capital of Rs. 80 lakhs, and it is, therefore, clear that the position is not satisfactory.

**89. Operating costs in 1949-50.**—Bharat Airways' cost of operation of its Dakotas for the year 1949 was Rs. 515 per hour for a utilization of 1250 hours. This cost, however, is on the basis of no provision for depreciation and inadequate provision for insurance. Allowing for these, the cost would be about Rs. 565 per hour against Rs. 600 per hour representing our estimated reasonable cost at that utilization. The Company's figure for flight crew salaries does not accord with the number of pilots which it is employing and the salary which it is paying them. However, this comparison with other companies and our estimated reasonable cost is largely vitiated by the fact that there has been no proper system in Bharat Airways of allocation of costs between its Dakotas and Skymasters.

**90. Difficulties of the Company.**—All the scheduled operations of Bharat Airways are on routes on which another operator also holds a licence, the routes being the same in the sense that they connect the same terminal points. Thus, the Company has to operate in a competitive field and this has resulted in the division of the available traffic. The Company has reduced fares progressively on its routes which, with the low load factors on some of them, has resulted in increased losses. The only profitable areas for its operations, which are still to be properly developed, are Tripura, part of Assam and Manipur, which offer very good potential. Bharat Airways increased the intensity of its operations very greatly during the last 8 months to meet the very heavy demands of passenger and freight traffic in the areas of West and East Bengal, Assam, and Tripura, but with these now tending to ease off, the Company will have to face some reduction in the volume of its operations.

**91. Excess capacity of its workshop.**—The Company has its own workshops for overhaul of Dakota and Skymaster airframes, but we very much doubt whether the capacity is being fully utilised. As we have pointed out earlier, Bharat Airways has not made any provision for depreciation and, with its heavy accumulated losses, its operations have not resulted in a healthy financial position.

#### *Section (8)—Indian Overseas Airlines*

**92. Brief history of its operations.**—Mistri Airways, which later changed its name to Indian Overseas Airlines, was registered on 13th January 1946. In October 1946, it obtained a licence for operation over the Bombay-Nagpur-Calcutta route with a frequency of 3 services a week. The frequency was increased to 4 services a week in February 1947 and to daily service in the following month. Soon after Partition, there was a change in the management of the Company, its name being altered to 'Indian Overseas Airlines'. Along with other companies, Indian Overseas Airlines participated in the charter

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operations connected with the evacuation of refugees from Western Pakistan and the Kashmir Operations. Early in 1948 when India's relations with Hyderabad began to deteriorate, the Company was given a licence to operate on the route Nagpur-Hyderabad-Bangalore-Madras with a view to providing an air service, alternative to Deccan Airways, on the route Madras-Nagpur-Hyderabad. This service was discontinued in October 1948 on the successful conclusion of the Hyderabad Police Action. The Company also obtained a licence for the route Nagpur-Jubbulpore-Allahabad-Kanpur-Lucknow over which it operated from February to December 1948, but it had to discontinue the service as, according to the Company, there was insufficient traffic following on the recommencement of Air Services of India's operations on the Bombay-Indore-Kanpur-Lucknow route. The Company carried out a number of overseas charters, particularly to Nairobi. On 30th January 1949, Indian Overseas Airlines obtained a provisional licence to operate the Night Air Mail Services on the Delhi-Nagpur-Madras and Bombay-Nagpur-Calcutta routes. As the route organisation was not then considered adequate to justify carrying of passengers, Indian Overseas Airlines was not allowed to carry passenger traffic on its night services which thus were confined to carriage of mail and freight traffic. About May 1949, the Company got into financial difficulties and this resulted in a position in which the Company could not get the necessary number of aircraft with Certificates of Airworthiness for the operation of its services. The Company had accordingly to suspend its services one by one; the Delhi-Madras night service was suspended on 14th May and the Bombay-Calcutta service on 10th June. When the Company's position deteriorated, the Air Transport Licensing Board, after giving due notice, suspended its term licence for operating the day service on the Bombay-Nagpur-Calcutta route with effect from the end of July 1949. Sometime in September, the Company seems to have overcome its more immediate financial problems and approached the Air Transport Licensing Board for the restoration of its licence on the Bombay-Nagpur-Calcutta route (day service). The Board gave the Company a provisional licence for operation on that route for a period of six months from 1st October 1949, which was subsequently extended by a further period of six months. The night operations were in any case to be suspended during the 1949 monsoon as the ground organisation on the routes had not at that stage been equipped to the full safety standard for operation by night during the monsoon. In October 1949, Government considered the arrangements to be made for resuming the night services and Indian Overseas Airlines offered to operate the services without any guarantee of minimum revenue. The licence for night operations was however not given to it. In 1948, the Company purchased a Skymaster aircraft with which it has done a number of overseas charters. It was given a licence in 1949 by the Air Transport Licensing Board to operate a service from Calcutta to Singapore and also a service from Bombay to Teheran, but due to its financial difficulties the Company has not been able to operate these services.

**93. Existing routes, fleet and financial results for the years 1946-47, 1947-48 and 1948-49.**—Indian Overseas Airlines is at present operating only on the Bombay-Nagpur-Calcutta route with a daily frequency. The route mileage is 1037 and the Company's annual scheduled flying hours are 4900. The Company's fleet on 1st April 1950 consisted of 15 Dakotas, one Skymaster, 13 Norsemen, one Expeditor and 4 Harvards. Its Dakota utilisation for the year 1948-49 was 645 hours. The total transportation performed by the Company during the 3 years ended 31st March 1947, 31st March 1948 and 31st March 1949 was 188,000; 989,000; and 1,227,000 ton-miles, respectively. The Company's expenditure and revenue respectively were about Rs. 54 lakhs and Rs. 4½ lakhs in 1946-47; Rs. 89 lakhs and Rs. 33 lakhs in 1947-48; and Rs. 7 lakhs and Rs. 34 lakhs in 1948-49. The losses for the 3 years were approximately Rs. 1 lakh, Rs. 5 lakhs and Rs. 36 lakhs respectively.

94. **Operating Costs and Revenue per mile of transportation.**—The following table shows Indian Overseas Airlines' Costs and Revenue in terms of annas per mile of transportation performed during the 3 years:

	1946-47	1947-48	1948-49
<b>Costs.—</b>			
Direct . . . . .	29.22	41.2	49.5
Other . . . . .	13.98	15.55	21.16
<b>TOTAL</b>	<b>43.25</b>	<b>56.75</b>	<b>73.66</b>
<b>Revenue.—</b>			
Transportation . . . . .	33.27	47.6	34.8
Other . . . . .	1.27	1.2	1.42
<b>TOTAL</b>	<b>34.4</b>	<b>48.8</b>	<b>36.22</b>
<b>Net result.—</b>			
Profit + . . . . .			
Loss— . . . . .	— 8.85	— 7.95	— 37.44

[TABLE NO. 11.]

The Company's Costs have been steeply going up, while its Revenue, which had always remained low, improved a little during 1947-48, but dropped again heavily in the next year. The Company's loss for the year 1948-49 was 37.44 annas per mile, the heaviest amongst the Indian operators).

95. **Brief review of its financial position as disclosed by the latest available balance sheet for the year ended 31st March 1949.**—The Company has furnished us its balance sheet as on 31st March 1949. The paid-up capital of Indian Overseas Airlines is Rs. 119.83 lakhs. The original value of the fixed assets of the Company amounts to Rs. 50.53 lakhs and according to our calculations, a sum of about Rs. 20 lakhs would represent the depreciation to be written down at the rates authorised for income-tax purposes. The written down value of the assets will therefore be Rs. 30.53 lakhs. The Company has, however, provided only Rs. 2.20 lakhs for depreciation till 31st March 1949. The floating assets of the Company as on 31st March 1949 amount to Rs. 67.18 lakhs as against which the liabilities amount to Rs. 57.06 lakhs, leaving a surplus of Rs. 10.12 lakhs. Therefore, the total net value of the assets as on 31st March 1949 would be Rs. 40.65 lakhs (i.e. Rs. 30.53 plus Rs. 10.12 lakhs) as against the paid-up capital of Rs. 119.83 lakhs referred to above. The deficiency, therefore, will be Rs. 79.18 lakhs. On 31st March 1949, the Company has shown in its balance sheet an accumulated loss of Rs. 37.21 lakhs without providing for full depreciation as stated above. When depreciation is provided, the accumulated loss will amount to Rs. 55.21 lakhs. The nominal assets shown in the balance sheet representing development expenses, preliminary expenses, prospectus expenses, commission on shares, etc., after adjusting nominal liabilities such as reserve for bad and doubtful debts, etc., would amount to Rs. 23.97 lakhs which, together with the accumulated loss of Rs. 55.21 lakhs, will make the

total of Rs. 79.18 lakhs already referred to above. In the balance sheet, a sum of Rs. 25.17 lakhs has been shown as investments at book values. What the market values of these investments are and whether there is loss or profit on these are not known to us.

96. **Its operating costs in 1949.**—The Company's cost of operation of Dakotas for 1948-49 works out at Rs. 766 per hour for a utilisation of 645 hours, as against Rs. 705 per hour according to our reasonable costs estimate for that utilisation.

97. **Causes of its present difficulties.**—We are of the view that this Company brought upon itself most of its difficulties. On the Company's own statement, immediately on its formation it obtained from Disposals a very large number of Dakotas and other aircraft and established an extensive organisation, without making even reasonably certain about the amount of work it was likely to get. In March 1947, for example, the Company's fleet consisted of 11 Dakotas, 16 Norsemen, 2 Harvards and 4 Proctors, and according to the Company, its capacity then was what was needed to operate more than three trunk routes. It had applied to the Air Transport Licensing Board for licences in respect of a very large number of routes, but many of these routes were already in operation by other companies and the remainder had not been organised for operation of air services. The result was that the Company got only one route licence, viz., Bombay-Nagpur-Calcutta and that too in direct competition with an older operator. The Company's operation of the Nagpur-Hyderabad-Bangalore-Madras route immediately prior to and during the Hyderabad Police Action was creditable but it brought to substantial revenue to it. Its operation on the Nagpur-Jubbulpore-Allahabad-Lucknow route was an expensive experiment. Then, again, its embarking on operation of night services for the carriage of mail and freight alone without any passenger revenue was at that stage certain to be a financial liability. It is, however, conceivable that if Indian Overseas Airlines had been allowed to continue operation on the night services without any break and to develop traffic, it would have managed to make a financial success of the operations over a long period. Financial difficulties overtook the Company within four months of the commencement of night operations and it had to reduce and eventually suspend its services. Though it has been given a provisional licence to operate on the Bombay-Nagpur-Calcutta route, we are not sure whether it is even now free from its financial embarrassments. We are also of the view that the load factor on the Company's Bombay-Nagpur-Calcutta service, stopping and the operations are only adding to its losses. For this one service, the Company is maintaining an extensive overhaul and repair establishment.

Further comments on the operations of this Company will be found in Chapter 6.

#### *Section (9)—Himalayan Aviation Ltd.*

98. **Brief history of its operations.**—Himalayan Aviation was formed in 1947 with a paid-up capital of Rs. 5 lakhs to undertake air survey work in India and to carry out non-scheduled operations. It is a private limited company. Actually, no air survey work was done by Himalayan Aviation whose initial operations consisted of charter flights in Bengal and Assam. In October 1949, when Government found that none of the scheduled operators was willing to operate the night services except on a Government guarantee, Himalayan Aviation made an offer to operate the services without any conditions in regard to guarantee of revenue. The Air Transport Licensing Board accordingly gave it a provisional licence for three months from 15th October 1949 for operation by night over the routes Delhi-Nagpur-Madras and Bombay-Nagpur-Calcutta.

Himalayan Aviation expanded its organisation and equipment suitably and started the night services on 15th October 1949. The provisional licence was renewed up to the end of January 1950 and thereafter for a further period of one year up to 31st January 1951.

99. **Existing routes, fleet and financial results of its operations for the year ended 30th June 1950.**—Himalayan Aviation is at present operating the following services by night with a daily frequency:—

Delhi—Nagpur—Madras

Bombay—Nagpur—Calcutta.

The Company's route mileage is 2132 and the annual flying hours are 10,098. On 1st April 1950, the Company's fleet consisted of 7 Dakotas. Its aircraft utilisation during the period 15th October 1949 to 30th June 1950 was about 1436 hours per annum. (This is on the basis of the Company's scheduled operations alone. We have no figures in respect of its non-scheduled operations during this period). The transportation performed by the Company during this period was 564,661 ton-miles. The average loads per night carried by Himalayan Aviation comprised 51 passengers, 1136 lbs. of freight and 5528 lbs. of mail, during the period ended 30th June 1950. The company's expenditure and revenue for the year ended 30th June 1950 were respectively Rs. 50.56 lakhs and Rs. 50.41 lakhs. Its operations thus show a loss of about Rs. 15,000. The Company's revenue includes the financial assistance given by Government in the shape of partial rebate of duty on aviation fuel. If this were excluded, the Company's loss during the period in question would be Rs. 3.63 lakhs.

100. **Review of financial position as disclosed by latest available balance sheet.**—The Company has furnished us its provisional balance sheet and profit and loss account for the year ended 30th June 1950, but as it has requested that the figures should not be published at this stage, we are not in a position to give a full review of its financial position. The profit and loss account shows a small loss, but in our opinion this does not represent the correct position of the air transport operations of the Company. In our view, after making corrections for certain factors, the loss would be substantially higher. The figures furnished by the Company disclosed that of the total revenue earned by Himalayan Aviation, passenger revenue is 41.4 per cent. and mail revenue 37.3 per cent. Other scheduled operators do not earn such a high percentage of their revenue by carriage of mail, the actual percentage varying between 3 and 15.

101. **Effect of its operations on other operators.**—The competitive freight rates offered by the Company resulted in very considerable freight offerings which, frequently, the Company found too much to handle and which had perforce to be off-loaded at Nagpur or kept back at the station of origin for being flown the next day. The passenger fare on the night services was fixed at the First class rail fare plus 12½ per cent., which was much below the levels in force on the day services. Himalayan Aviation was of course getting the bulk of the mails between the 4 main cities. There is no doubt that all this caused an amount of diversion of traffic in all the three categories from the other scheduled services and substantially affected the revenues of at least two companies, viz., Deccan Airways and Airways (India).

Further comments on the operations of this Company will be found in Chapter 6.

*Section (10)—Kalinga Airlines*

102. **Brief history of its operations.**—Kalinga Airlines was established as a private limited company in 1946. We have no information regarding its paid-up capital or its financial position as no accounts of this Company have been published so far, nor have we been furnished with copies of its accounts. We did, however, get towards the end of July 1950, certain operational statistics of the Company. Kalinga Airlines was engaged in non-scheduled operations in the West Bengal, Assam, Tripura and Manipur areas, until, in May 1949, it obtained a provisional licence for operating a purely freighter service on the route Calcutta—Agartala. This licence is valid up to 30th September 1950. We understand that Kalinga Airlines stepped up its operations very considerably during the period of the Assam Air Lift. The Company's fleet consists of 5 Dakotas and its fleet utilisation, on the basis of the figure for the period of 6 months ended 30th June 1950, was about 1880 hours per year. During this period the scheduled operations performed by it amounted to 1,293,000 ton-miles and the load factor was over 90 per cent. The revenue earned was about Rs. 19 lakhs. Its charter operations during the 6 months were on the following routes:—

Calcutta—Cooch-Bihar—Rupsi—Hasimara—Bagdogra—Calcutta

Calcutta—Bahurghat—Calcutta

Agartala—Kumbhigram—Jorhat—Tezpur—Imphal—Kumbhigram—  
Agartala

Agartala—Kamalpur—Kailashar—Khowai—Agartala

The total transportation performed on non-scheduled operations during the first half of 1950 was 782,000 ton-miles and the revenue earned over Rs. 10 lakhs.

103. **Circumstances under which a licence to operate scheduled freighter services was given to Kalinga Airlines.**—When the Air Transport Licensing Board gave a licence to Kalinga Airlines for a purely freighter service on the Calcutta-Agartala route, there was another operator already holding a licence for that route and there was yet another operator *vis.*, Airways (India) who had been given licences to operate in the Bengal—Assam area. We understand that it was represented by the Company, and this was confirmed by the Director General of Civil Aviation, that the volume of freight traffic to be handled in that area had increased out of all proportion necessitating the provision of additional capacity. The Board accordingly thought it fit to grant a provisional licence to Kalinga Airlines for a purely freighter service.

Further comments on the working of this Company appear in Chapter 6.

*Section (11)—Ambica Airlines and Jupiter Airways*

104. **Brief history of the operations of Ambica Airlines.**—The Company started scheduled operations on 27th January 1947; it went into liquidation in February 1949. Its paid-up capital on 31st December 1947 was Rs. 26,106.275. Up to that date, the Company had lost Rs. 3,73,968. Its operations were then confined to the Kathiawar area, in which Air Services of India was already operating. The traffic potential was much too small to provide enough traffic for two such operators. During 1948, it lost much more heavily as it operated a service from Bombay to Amritsar via Ahmedabad and Jodhpur on which routes there was practically no traffic. Although no figures of loss for the year 1948 were received from the company, we understand that an estimate of its financial position was made at the time of its liquidation. According to this esti-

mate, the Company earned a total revenue of Rs. 81,24,000 in 1948 against a total estimated cost of operation at Rs. 3-9-6 per mile (the Company's figure for 1947) of Rs. 42,42,000, giving an estimated loss in 1948 of Rs. 11,18,000. Thus, of the total paid-up capital of Rs. 28 lakhs, about Rs. 3½ lakhs was lost up to 1947 and Rs. 11½ lakhs in 1948, making a total loss of about Rs. 15 lakhs and leaving approximately Rs. 11 lakhs out of the original capital. The failure of Ambica Airlines can, therefore, be directly attributed to its progressively deteriorating financial condition which ultimately made it impossible for it to carry on any further. The liquidation was brought about as the result of a petition by a person interested in the Company. The actual cause of the failure of the Company was poor revenue owing to operation on unremunerative routes.

105. **Brief history of the operations of Jupiter Airways.**—Jupiter Airways started scheduled operations on the Delhi—Madras route in June 1948 and went into liquidation 4 months later. The only balance sheet published by the Company during its short life was the one before it commenced scheduled operations. According to this balance sheet, the subscribed capital of the Company as on 30th November 1947 was Rs. 25,74,622. Of this, Rs. 2,69,427 had already been lost on the above date (before scheduled operations commenced). After the publication of this balance sheet, it is known that the Company earned a gross revenue of Rs. 13,98,241 from all its operations, scheduled and non-scheduled, during 1948. The expenditure during the period is not known but the Company flew approximately 450,000 miles during this period and if the cost of operations were assumed to be Rs. 4 per mile, the loss would have been about Rs. 4 lakhs. In October 1948 there was a strike by the engineering staff of the Company including the supervisory staff which led to the suspension of its operations. The Company never resumed operations after this, as liquidation supervened. There was apparently lack of control due to the absence of any qualified or experienced managerial staff. For example, the Company did not appear to have even a properly qualified General Manager.

*Section (12)—Defects in the organisation of and difficulties encountered by the Air Transport Industry*

106. **Brief resume of the financial position of the Industry.**—Having reviewed the working of the individual companies, we shall now proceed to assess the present position of the Industry as a whole, indicate the difficulties it encountered during the last few years and examine to what extent these were of its own creation or due to other causes.

During the period from 1946 to 1948, eleven companies were licensed for the purpose of operating scheduled air transport services, of which one transferred its activities to Pakistan on Partition. One went out of scheduled operation by surrendering the only licence it had. Two went into liquidation. In 1949, the licence of one company was suspended due to its falling into financial difficulties, but later it was granted a provisional licence for the same route, the term licence having been surrendered. Two new operators came into the field during 1949, by obtaining provisional licences. There are thus now 9 scheduled operating companies, of which 6 hold term licences and 3 provisional licences. Their aggregate paid-up capital (excluding Kalinga Airlines) is Rs. 630 lakhs. A statement showing the costs of transportation performed by the operating companies and the revenue earned by them in terms of annas per mile will be found in Appendix XIII. The statement at Appendix XIV gives the financial results of the operations of the companies (excepting Kalinga Airlines) for the latest

financial year for which they have furnished figures. It shows that, except Airways (India), all the companies incurred losses and if the partial rebate of customs duty on petrol given by Government were excluded, Airways (India) also would have shown a loss. Excluding the petrol rebate which amounted to approximately Rs. 37.8 lakhs, the combined losses of all the companies for the year amounted to about Rs. 110 lakhs. Many of the companies had not made adequate provision for depreciation and if this were taken into account, the loss would be considerably higher. This loss is reflected in smaller or larger measure in the financial working of each individual operator. We have endeavoured in the earlier sections of this Chapter to diagnose what the reasons for the loss in each case were. We shall here consider whether there was anything wrong in the set-up or organisation of the Industry itself.

107. **Licensing of too many operators and uneconomic competition among them.**—The first point which appears to us to be fundamental in the existing set-up of the Industry is that there are too many operators for the work to be done. The statement at Table No. 24 gives the names of the existing companies, the hours flown, the transportation performed and the revenue earned by them during the latest financial year for which figures have been furnished. (Except in the case of one company, which probably conducts operations on a sufficiently large scale with prospects of economic working, the amount of traffic handled by all the units is disproportionately small. In other words, the scheduled air transportation work in this country, which compared to other countries like Australia, for instance, is small, is parcelled out amongst too large a number of operators.) As was mentioned in Chapter 2, Government's post-War plans for development of air transport services in India envisaged that the operation of the air services detailed in the plans should be entrusted to a limited number of operators, not more than four. When the rules relating to the licensing of air transport services came into force in October 1946, there were four companies in operation. Operations during the War when very heavy traffic loads were carried and substantial traffic was turned away for want of accommodation had created an impression that air transport was a very profitable enterprise. The war time boom which continued for a considerable while after the end of the War strengthened this impression. For this reason, a very large number of companies were floated for the purpose of operating air services. As we mentioned in Chapter 2, by the beginning of 1947, twenty-one companies had been registered with an authorised capital of Rs. 42 crores. The issue of capital for these companies was controlled by the Government of India and we find that though the actual issue authorised was considerably restricted, the total (Rs. 9.7 crores) was very much more than what was needed to undertake the estimated air transportation work in the country. During the first two years of the functioning of the Air Transport Licensing Board, it gave licences to as many as 11 companies. At the time the Board started work, many of the trunk routes were already being operated by the four companies, Air-India, Indian National Airways, Deccan Airways and Air Services of India, and under the terms of the Rules, these companies more or less automatically got licences for those services. Except for a few routes in Bengal and Assam and the Calcutta-Madras route, the routes in respect of which licences were given to the newly formed companies were the same or practically the same as those already being operated by the older companies. Mistri Airways, which later became Indian Overseas Airlines, for example, was licensed to operate on the Bombay-Nagpur-Calcutta route in respect of which Air-India already held a licence. Ambica Airlines was given licences for operation in the Kathiawar area where Air Services of India was already operating. Bharat Airways was given a licence for opera-



tion over the Delhi-Calcutta route which was being operated by Indian National Airways. On the route Delhi-Amritsar, at one stage three companies had been given licences for operation, viz., Indian National Airways, Dalmia-Jain Airways and Bharat Airways. Jupiter Airways was given a licence to operate on the route Delhi—Nagpur—Vishakapatnam—Madras, which was parallel with that operated by Deccan Airways. (We understand that this was done at the instance of Government). The only new area which had still to be covered was Bengal and Assam and the east coast from Calcutta to Madras. The credit for developing air services in these areas goes to Airways (India). Even here, in the Bengal—Assam area competing interests were allowed to develop between Airways (India) and Bharat Airways. For example, Airways (India) was licensed for the route Calcutta—Gauhati and Bharat Airways for the route Calcutta—Agartala—Gauhati. Thus, the licensing of a large number of operators, apart from parcelling out the limited amount of work amongst too large a number of units, resulted in a regime of uneconomic competitive operation which led to a progressive weakening of the companies concerned. The liquidation of two of them was the first sign of the unsatisfactory situation. As late as May 1949, a new company, viz., Kalinga Airlines, was introduced into the field and given a licence for operating a purely freighter service on the Calcutta—Agartala route though it might have been possible for Bharat Airways and Airways (India) who were operating in that area to cope with the additional traffic demand. Finally, the super-imposition of an additional operator to work the scheme of night air mail services upon the then existing pattern of air transport operation complicated the situation enormously. It cut across the lines of traffic being carried by the day operators. We do not question that the night air mail services provided a new and valuable facility and were a development in the right direction, but we feel that the development should have been brought about in a manner consistent with the pattern of operations already in existence and not by directly affecting the basis of its working. We have noted that Government endeavoured to negotiate with all the scheduled operators and made every effort to give them a chance. We have looked into this matter very closely, but we feel that the companies' attitude cannot be dismissed as altogether unreasonable. The position was that they were making losses and were naturally very pessimistic about developments. Government asked them to embark on a new mode of operation about the financial success of which the companies felt doubts. They were not sure whether passenger traffic would be forthcoming in adequate measure. There is no doubt that, as events have shown later, they made a mis-calculation and were unduly pessimistic in their expectations. However, at that stage if they were a little hesitant it was understandable. All that they requested Government was that a revenue of Rs. 3/- per mile should be guaranteed to them. This was less than their operating costs. Under the circumstances, the request of the Companies might have been acceded to, but Government, having come to the conclusion that they should not commit themselves to any guarantee, started negotiating with a company, which was till then only a non-scheduled operator and which was prepared to operate without asking for any commitment from Government. This Company eventually obtained the licence. Whether this was justifiable or not, the result of it was that it added one more operator to an already overcrowded field. It substantially affected the revenues of the companies which were operating in that area, particularly two of them.

108. **Miscalculations made by the A. T. L. B. and the operating companies.**— It is probably easy to be wise after the event. But we cannot help feeling that the working of the rules for the licensing of scheduled air transport services has not brought about precisely the result they were intended to achieve when they were framed. The post-War development plans approved by Government in 1944-45 had foreseen the future clearly enough and had indicated in some detail

how they should be implemented. The licensing rules which were a part of those plans were intended to avoid overcrowding of companies and wasteful competition though the rules themselves made no reference to the plans. In the first instance, floatation of new air transport companies could have been controlled at the time of authorization of the issue of capital, but events have shown that this control did not go far enough. The actual selection for licensed operations was, however, left to be done by the Air Transport Licensing Board. The Board had before it in January 1947 applications from 21 companies, but actually gave licences to half that number, and thus did a certain amount of pruning. We appreciate the fact that the Board as well as the Industry did not have in the early part of 1947 sufficient amount of data to guide them and the Board had, to a large extent, to rely on the assessment of traffic potential as estimated by the companies, several of whom claimed that there was still adequate unexploited traffic potential and that reasonable encouragement should be given to new entrants also. The Board might also have been persuaded to grant new provisional licences with the object of making experiments in respect of traffic potential, and if the operator actually eventually found the experiment too expensive, the Board did give permission to discontinue the service. In a matter of this kind, there might have been *bona fide* miscalculations made by the Industry as well as by the Board. But we think it was unfortunate that the Board should have found it necessary to licence new operators to start services on routes which were already being operated by the then existing companies. If the intention was to guard against the evils of monopoly, the Board could have achieved this result to a large extent with the powers which it possessed to control fares and freight rates and frequencies. These powers would have enabled the Board to control any tendency towards exploitation of the public which might otherwise have been feared as a result of the monopoly operations. It is now clear, on the basis of the experience during the last four years and on the present indications of prospects for the immediate future, that there is not likely to be sufficient volume of traffic to sustain the operations of more than a very limited number of units. Since our resources will not permit subsidisation of a large number of units or over a long period of years, we must accept the position that the scheduled operations at least for the next few years should be confined to the existing five or six units.)

109. **Delay in the disposal of applications for licences.**—Some of the companies have complained that their applications for licences were not dealt with by the Air Transport Licensing Board expeditiously and that they were kept waiting for long periods to know the final decisions of the Board in regard to grant of licences. They have stated that this meant unremunerative maintenance of their organisation and facilities. We do not know to what extent this complaint against the Board is justified but we notice that even now quite a number of applications for licences are pending with the Board. We are informed that about half of these applications are those which were received recently and are being kept pending until we make our recommendations and the other half are being kept pending at the request of the companies themselves awaiting the proper organisation of the routes to which the applications relate. There is no doubt that long delay in the disposal of applications for licences is wasteful in its effect on the companies. We are of the view that early action should be taken by the Board in the disposal of the outstanding applications.

110. **Over-equipment of the companies.**—The next important defect of the Industry is the over-equipment of the companies. The very existence of too many small operators to cater for a limited amount of traffic is uneconomic, as it results in the Industry as a whole carrying a much larger load of overheads than otherwise. Besides, traffic organisations at outstations and passenger handling arrangements are multiplied with comparatively little work for indivi-

dual units. But the feature which most aggravated the situation was that, from the start, the companies had equipped themselves with aircraft and spares on a scale far in excess of what was needed for the operation of the services which they could reasonably have expected to be allotted to them. This will be clear from the fact that the total number of transport aircraft now in possession of the scheduled operators is 118 (including 96 Dakotas, 12 Vikings, 2 SO-95's and 3 Skymasters) besides a number of small machines, while the number required to carry out the present operations is only about 70. The average aircraft utilization in India in 1949 was under 1,000 hours, while in other countries, e.g., Australia and U. S. A., a utilisation of well over 2,000 hours is the normal. It has been represented to us that the Air Transport Licensing Board was primarily responsible for this state of things as it had insisted, even before consideration of applications for licences for the operation of routes, that the applicants should produce evidence that they had all the aircraft and other equipment required to operate the service and the necessary personnel. The companies had accordingly no alternative but to acquire the necessary equipment before submitting their applications for licences. Thus, the companies, even before they knew they were likely to get licences, had to incur heavy expenditure in the acquisition of aircraft and in the engagement of personnel. When eventually, they got licences, these fell far short of what they needed for fully employing their equipment and technical staff with the consequence that all their heavy expenditure became wasteful.

**111. Reasons for such over-equipment.**—We have examined this complaint very carefully. We are not persuaded that it is well-founded. We find that practically every one of the companies which were floated in 1946 had equipped itself with aircraft and spares even before the A. T. L. Board commenced operation. For example, Indian Overseas Airlines has stated in its reply to question 1 of our Questionnaire that "the Company, as was done by other Airlines either then in existence or coming into existence, obtained from the Disposals a number of Dakotas and other small aircraft as also adequate spares, equipment and tools. It was difficult in those days to obtain qualified personnel but the Company was lucky enough to obtain the services of highly qualified and experienced technicians both mechanical and operational. Immediately, all the Dakotas were sent to Hindustan Aircraft Ltd., Bangalore for overhaul for certificates of air-worthiness as also necessary conversion and sound-proofing. Thus, the Company got itself ready to operate any given route or routes by the Government." The same is true of practically every other company. Thus, when the Air Transport Licensing Board started functioning, they submitted to the Board a full account of all their equipment and personnel and other technical organisation. Naturally enough, the Board in making decisions for granting licences seems to have been moved by the consideration that these companies had the necessary organization and, where it considered necessary, had the strength of the organization inspected and checked by the Director General of Civil Aviation. It has been brought to our notice that there have been several cases where the A. T. L. B. granted licences subject to confirmation by the D. G. C. A. that the technical organisation of the companies concerned was up to requirements. A few examples are—licence to Ambica Airways in January 1947 to operate on the route Bombay-Rajkot-Morvi; permission to the same company in August 1947 to extend its Bombay-Baroda-Ahmedabad service to Jodhpur; and licence to Indian Overseas Airlines in 1949 to operate a scheduled air service from Calcutta to Sydney. It is not denied that there may have been cases where the Board required the operator to produce evidence of his having suitable equipment and adequate personnel before granting a licence, but in such cases, almost invariably, the company, when asking for a provisional licence, specified a date from which it proposed to commence operation and,

with a desire to secure an early decision, this date was within a week or two of the application. In effect, the grant of a licence and the commencement of the service were intended to be almost simultaneous. In such cases, the Board had no option but, as a part of the consideration of the general question of the issue of a licence, to insist upon satisfactory evidence of the technical competence of the company as well. It has also been pointed out to us that there is another relevant point in this connection. According to rule 146 of the Indian Aircraft Rules, the very idea of granting a provisional licence was to allow for cases where the Air Transport Licensing Board considered it desirable to authorize the commencement of a service, pending consideration of the application for a term licence. In other words, the provisional licence was intended to cover cases where the application of a company for a term licence was likely to take time, but where the operation of the proposed service with immediate effect was necessary or desirable. It, therefore, follows that in such cases the company would have to be technically competent, as otherwise there would be no point in granting it a provisional licence.

Anyhow, the fact remains that far more aircraft and spares were acquired by the companies than were necessary to operate on an economic basis the services for which they received licences. It appears to us that this unsatisfactory state of affairs was inherent in the situation then existing. In 1946 when the new licensing rules came into effect and the A.T.L.B. was formed, it was known that the operation of air services would be subject to the grant of licences. A number of companies had been formed for the purpose of operating air services, the number far exceeding that actually required for operating on an economic basis. In this situation it was inconceivable that any company would have merely waited to obtain a licence on the basis of its paper plans and not have proceeded to equip itself with aircraft and personnel. It is clear that what actually happened was that with the spirit of intense rivalry then afoot and in its anxiety to secure as many licences as possible, each company set about equipping itself to the extent its financial resources would allow. The situation was facilitated in this regard by the easy availability from Disposal stocks of Dakota aircraft at cheap prices. It is, therefore, not as if the companies equipped themselves at the behest of the A.T.L.B. When applications came before it from companies which had already equipped themselves with aircraft and personnel, the A.T.L.B. naturally could not be expected to consider applications from companies which had no organization but had only submitted plans for building up the necessary organization after getting a licence. The Board seems thus to have been faced with the hard compulsion of facts. There was apparently not a single company which applied for a licence without any organization.

112. **Lack of proper planning and intense competition for a limited supply of technical personnel.**—One important consequence of this sort of scramble was that there was no proper planning by the operating companies. Because of the intensity of competition to obtain route licences, those who got themselves equipped first seemed to have thought that they stood the greatest chance of acquiring a licence. Thus, the capital resources of the companies were drained and they were also burdened with heavy current expenses even before their applications for licences were heard. This intense competition between the companies also led to their bidding against each other for the services of a strictly limited supply of technical personnel with the result that the wages and salaries in all grades went up very considerably. This increased the cost of operations of air transport enormously.

113. **Building up of unnecessarily large organisations by some companies.**—The next important factor which, in our opinion, has contributed to the present difficulties of the Industry is that some of the companies have built up far too big organisations with little regard for the actual magnitude of the operations that they are handling. Air-India has explained that its organisation was built

up for an eventual operation of 50,000 hours while its present scale of operations is about 26,000 or 27,000 hours, although it is true that its organisation on that scale helped it to embark upon its duties as Technical Managers of Air-India International. In the case of Indian National Airways, part of its difficulties were due to Partition, some of the routes which it had developed falling in Pakistan. Air Services of India has created greater financial difficulties for itself by going in for a new type of aircraft without fully assessing the economics of its operation in India conditions:

114. **Rising cost of aviation fuel.**—We now come, to the next important consideration in the progressive increase in the cost of operations of the companies, viz., the rising cost of aviation fuel. In April 1946, it was 30 annas per gallon (including customs duty) at Bombay, and since then it progressively rose to 41 annas per gallon (including customs duty) in March 1949. With effect from 1st March 1949, Government granted a rebate of duty of 9 annas per gallon of fuel, but as the duty was also simultaneously increased by 3 annas to 15 annas a gallon, the net cost to the companies of aviation fuel was 35 annas per gallon. From 15th March 1949, the prices of petrol went up by 1 anna a gallon and from 1st November, following Devaluation, there was a further rise by 5 annas 3 pies per gallon, so that in the net result the cost of fuel to the companies after November 1949 remained as it had been before 1st March 1949. In the course of their evidence before us, Burmah-Shell Company informed us that there have since been two instalments of reduction in the prices, the first of 9 pies per gallon and the second which came into effect on 15th August 1950 of 2 annas per gallon. We have referred, in Chapter 5 relating to reasonable costs of operation of certain types of aircraft to the high costs of aviation fuel prevailing in India, as compared for example, in Australia. It was explained to us by Burmah-Shell representatives that the petrol prices in India were fixed with reference to f.o.b. Gulf Price plus cost of transportation and storage in India and delivery at the air-field. Nevertheless, we are not clear why the prices in India should be so very much higher than in Australia, which is farther away than India from the source of production. We understand that petrol prices are fixed in close consultation with the Government of India, Ministry of Works, Mines and Power who are supplied by the Oil Companies with complete particulars of the make-up of the prices. We suggest that Government might like to examine whether there is not any possibility of bringing down prices in India to a level nearer to that obtaining in Australia.

115. **States sales of other taxes on aviation fuel.**—In addition to the Central Government's customs duty, most of the States Governments are levying sales or other taxes on aviation fuel. The following table shows the rates of these sales or other taxes:—

*Incidence of sales or other taxes in different States and the extent of exemption granted to scheduled air transport operators in respect of aviation fuel.*

State	Amount of sales or other taxes levied on petrol	Extent of exemption granted in respect of aviation fuel.
West Bengal	Nil	
Madras	As. 4 per Imperial gallon	Full.
Bombay	As. 2 per Imperial gallon	Half.
Uttar Pradesh	As. 2 per Imperial gallon	Under consideration.
Punjab	As. 3 per Imperial gallon	Full.
Madhya Pradesh	1/7 th of the rate charged to the customer.	Full.

State	Amount of sales or other taxes levied on petrol	Extent of exemption granted in respect of aviation fuel
Orissa . . . . .	3 pies per Rupee . . . . .	Full.
Bihar . . . . .	6 pies per Rupee . . . . .	Full.
Assam . . . . .	6 pies per Rupee . . . . .	Half.
Hyderabad . . . . .	One anna and 8·57 pies per Imperial gallon.	Full.
Travancore and Cochin . . . . .	3 pies per Rupee . . . . .	Full as a temporary measure.
Mysore . . . . .	3 pies per Rupee . . . . .	Half.
Madhya Bharat . . . . .	1 anna per Rupee . . . . .	Full exemption from import duty.
Rajasthan . . . . .	No sales tax . . . . .	Ditto.
Baurashtra . . . . .	2 annas per Imperial gallon . . . . .	Full.
Jammu and Kashmir . . . . .	Actual rates not known . . . . .	Full.
Patiala and East Punjab Union.	Do. do . . . . .	Full.
Bhopal . . . . .	Do. do . . . . .	Full.
Delhi . . . . .	Nil.	

[TABLE No. 12]

We understand that, as a result of efforts made by the Government of India in the Ministry of Communications, a majority of the States Governments concerned have agreed to give full or partial exemption from their sales or other taxes in respect of aviation fuel. Where the tax continues to be levied fully or partially, there is no doubt that it is weighing heavily on the cost of operation of air transport.

116. **Reduction of fares to uneconomic levels, particularly after the commencement of night air services.**—Finally, the rate of earnings of the companies for the transportation performed by them has tended to go down, so that with increasing costs, their financial difficulties have been accentuated. This has been particularly the case after the night services with greatly reduced passenger fares came into operation. The companies operating the day services have been obliged to reduce fares to a greater or less extent, regardless of whether such reduction is justified by their operating costs. We have examined the question of fares and freight rates in a later Chapter, and all that we need observe here is that the present fares are generally at levels which require very high load factors to produce adequate revenue. The system of competitive operation on a number of routes and the large range set by the Air Transport Licensing Board for the actual fares have contributed to the reduction of the fares.

117. **The effect of non-scheduled operators.**—The revenue position of the scheduled operating companies has also been to some extent affected by the non-scheduled operators. With a marginal organization and little or no overheads and with easy facility of movement from place to place wherever there is a chance of some remunerative traffic, the non-scheduled operators have gone in and by offering low rates have skimmed the cream of traffic. For instance

in the case of the Assam Air Lift there has been some resort to undesirable practices. As we were nearing the end of our task, one unusual fact came to our notice. On routes in respect of which Bharat Airways was operating scheduled air services, viz., Calcutta-Agartala-Sucaar-Kumbhigram-Tezpur-Jorhat-Imphal, another operator, viz., Kalinga Airlines was carrying out non-scheduled flights practically on a regular basis carrying passengers and freight. But the curious part of it is that the work of carrying mails to and from these places should have been entrusted to a non-scheduled operator)

**118. Effect of the All-up mail scheme and the night air mail service.**—We have examined (a) the effect of the introduction of the All-up mail scheme on 1st April 1949 on the volume of mail carried by the operating companies and their mail revenue and (b) how the position was affected by the resumption of the night services in October 1949.

On the introduction of the All-up scheme, the (total mail load available to all the companies went up by approximately 270 per cent. and mail payments by about 75 per cent. The reason why the payments did not increase in the same proportion at the volume of mail is that on the introduction of the All-up scheme the rate of payment for the carriage of mail was reduced from Rs. 1-8-0 per lb. irrespective of distance to the appropriate freight rate of the company concerned plus 25 per cent. We have also considered the effect on the traffic and revenue of the individual companies. In the case of Air-India, the average monthly mail load during the six months following the introduction of the All-up scheme was over 3 times that of the average during the first quarter of 1949. The average mail payment, on the other hand, increased only by 50 per cent. Excluding the mail carried on the Karachi-Colombo service which is governed by the 1938 contract and the guaranteed payment under it, the quantity of mail carried on the other services of Air-India in the period following the introduction of the All-up scheme was roughly 5 times the figure for the preceding period and the corresponding revenue slightly less than 3 times. In the case of Indian National Airways, similarly excluding the mails on the Delhi-Karachi service which is governed by the 1938 contract, the monthly average of mails carried during the period April to September 1949 was roughly 3 times the average for the preceding 3 months. As this Company did not submit reliable figures in regard to its mail revenue, we are (not in a position to say how its revenues were affected by the introduction of the All-up mail scheme). In the case of Air Services of India, the monthly average of the mail carried during the six months April to September 1949 was nearly 5 times the average for the preceding quarter. The increase in the revenue was, on the other hand, 50 per cent. Deccan Airways' monthly average of mail for the six months April to September 1949 was over 7 times the average for the preceding quarter. The revenue, on the other hand, was about  $4\frac{1}{2}$  times. In the case of Airways (India), the average mail load during the six months April to September 1949 was 5 times that for the preceding quarter. The corresponding revenue was a little less than  $2\frac{1}{2}$  times. Bharat Airways' average mail load during the six months April to September 1949 was about sevenfold of that of the preceding quarter. The Company's revenue increased by about  $3\frac{1}{2}$  times.

With the resumption of the night services by Himalayan Aviation on 15th October 1949, substantial quantities of the mail loads were diverted to the night services, thus inevitably affecting the mail traffic available for the other operators. In the case of Air-India, the average of the mail loads for the five months from October 1949 to February 1950 was 40 per cent. less than the average for the preceding six months. In March 1950, when the Company got the licence for operating the direct night service between Bombay and Delhi, the quantity of mails available to it went up fairly substantially, though it

was still less than the loads carried by it during the period April to September 1949. The revenue for March 1950 was higher than what the Company earned during the period prior to the introduction of the All-up scheme, though it was less than what was available to the Company during the period between the introduction of the All-up scheme and the resumption of the night services. In the case of Indian National Airways, the re-introduction of the night services does not seem to have affected its mail loads as a comparison of the average monthly mail loads carried by the Company during the periods April to September 1949 and October 1949 to March 1950 shows that the mail loads have increased slightly. In the case of Air Services of India, there was a reduction of the quantity of mail after the introduction of the night services as also in the mail revenue as compared with the figures for the period April to September 1949, but compared to the position in the period prior to the introduction of the All-up scheme, the Company's mail load was about  $3\frac{1}{2}$  times and revenue about 125 per cent. In the case of Deccan Airways, with the resumption of the night services, the quantity of mail dropped slightly less than 50 per cent. and revenue by 50 per cent. Compared to the pre-All-up period, the load was three fold and revenue double. Bharat Airways' mail load went down by about 25 per cent. after the re-introduction of the night services and its revenue by  $\frac{1}{2}$ . Compared to the pre-All-up period, the load was over 5 times and the revenue over double. In the case of Airways (India), the Company's Calcutta-Bangalore service suffered substantially. The monthly average of mail load on this route prior to the All-up scheme was 3,800 lbs. During the period April to September 1949 it was 8,700 lbs. After the re-introduction of the night services the monthly average fell to 1,600 lbs. On the Company's whole operations including the Assam operations, however, the Company had a benefit compared to the pre-All-up scheme period. The total mail load was 4 times the average for the first quarter of 1949 and the revenue about  $1\frac{1}{2}$  times. From February 1950, the Company's mail loads and revenue have gone up very substantially due to the Assam Air Lift.

Thus comparing the position prior to the introduction of the All-up scheme with that after the resumption of the night air mail services, we find that there was improvement in the mail revenue of every company, but the extent of the improvement was not uniform.

119. **Summary.**—Summing up, the defects and difficulties of the Air Transport Industry as we see them are:—

- (a) the number of operating units is much greater than that required to conduct the existing volume of air transport on an economic basis;
- (b) this has resulted in—
  - (i) multiplication of overheads, thereby increasing costs and,
  - (ii) wasteful competition amongst operators resulting in reduced revenues,
- (c) over-equipment of the companies, with consequent drain of capital resources, low utilisation and heavy current running cost;
- (d) competition between the operators for a comparatively limited supply of technical personnel, resulting in rise of wages and salaries to high levels, which has contributed in turn to excessive operating costs;
- (e) building up by some companies of organizations far too big for the volume of work on hand;
- (f) high costs of aviation fuel and the incidence of the States' sales or other taxes;
- (g) a tendency to reduce fares to uneconomic levels.



**External Services**

120. **Commencement of services to the West of India.**—In the Government of India's post-war plans for civil aviation development, it had been proposed that for the operation of external services two corporations should be set up, one for operating services to the West and the other for operating services to the East. It had also been proposed that Government should subscribe a substantial proportion of the capital of each of these corporations and that a further substantial interest should be given to an established internal air transport operator. No progress with external operations was made till Air-India submitted a scheme to Government in September 1947 for the operation of an air service from India to the United Kingdom. This scheme was approved by Government and Air-India International came into being. The new Company was registered in March 1948 with an authorised capital of Rs. 7 crores and a paid-up capital of Rs. 2 crores. The Government of India hold 49 per cent. of the capital of the Company with the option to acquire a further 2 per cent. at any time. Air-India has participated in it to the extent of 10 per cent., the remaining shares being subscribed by the general public. The Government of India have undertaken to make up the losses of Air-India International for a period of 5 years. Tata Sons Limited are the Secretaries and Treasurers of Air-India International and Air-India its Technical Managers. Air-India is also Air-India International's Chief Booking Agent in India. Agreements have been concluded between the Government of India and Air-India International and between Air-India International and Air-India, detailing the concessions given by Government for the operation of the services and the operating arrangements between the two Companies. We have mentioned the principal provisions of the agreements in para. 30, Chapter 2 of this Report. Air-India International started operations with a fleet of 3 Lockheed Constellation aircraft and its first service from Bombay to London via Cairo and Geneva was operated on 8th June 1948. The initial frequency was one service a week. An additional fortnightly service was operated from 24th September to 1st November 1948 when the frequency was increased to two services a week. It was further increased to three services a week from 15th October 1949. In January 1950, the Company started an air service from Bombay to Nairobi via Aden with an initial frequency of once a fortnight which has now been increased to one service a week. The existing fleet of the Company consists of 4 Lockheed Constellations.

121. **Statistics of Air-India International's operations and financial results for 1948 and 1949.**—The total transportation performed by the Company during 1948 and 1949 was 1,494,000 and 4,396,000 ton-miles respectively. During the first 3 months of 1950, the transportation performed, including the Bombay—Nairobi service, was 1,118,000-ton-miles. The expenditure and revenue figures of the Company were respectively Rs. 69.20 lakhs and Rs. 51.95 lakhs for 1948; and Rs. 148 lakhs and Rs. 148 lakhs, for 1949. The loss during 1948 of Rs. 17.25 lakhs, including provision for depreciation plus one-fifth of the preliminary expenditure on training etc. amounting to Rs. 2.54 lakhs or a total of Rs. 19.79 lakhs was made good to the company by the Government of India as provided in the agreement. For the year 1949, we understand that the Company is likely to break even after making provision for depreciation. The final audited accounts of Air-India International for 1949 have not yet been received and the picture will be clear only when such accounts are available.

122. **Reasons for its loss in 1948.**—It is striking testimony to the efficiency of Air-India International that an operation of the magnitude of the India—United Kingdom service was carried out from the start with remarkable smooth-

ness and without any hitch and that it could achieve the break-even point financially in the course of two years. A loss for the first year was to be expected taking into account several factors, viz.,

- (a) operation during the initial period involving preparation and development was bound to be expensive; the Company had to employ expensive check crew and special engineering personnel as a measure of caution, as operation of a new and complicated type of aircraft was involved; and
- (b) the capacity of its fleet was not fully utilised as the frequency was only gradually built up.

We are satisfied that the experiment of Air-India International has been a success.

**123. Commencement of services to the East.**—In regard to services to the East, Bharat Airways, which had purchased 3 Skymaster aircraft, proposed to the Government of India in 1949 that it should be allowed to operate air services on the route Calcutta—Bangkok—Hongkong—Shanghai—Tokyo. About the same time, Indian Overseas Airlines, which also had acquired a Skymaster, requested Government that it might be permitted to operate air-services to the East. In the then financial conditions, the Government of India were not in a position to give any financial assistance for such operations. They, however did not wish to stand in the way of these Companies who had suitable four-engined aircraft to put them to use in external operations and thereby gauge the traffic possibilities on the routes. Bharat Airways was accordingly given a provisional licence to operate on the route Calcutta—Bangkok—Hongkong—Shanghai—Tokyo and Indian Overseas Airlines on the route Calcutta—Bangkok—Singapore and thence to Australia, on the understanding that no financial assistance would be forthcoming from Government. Bharat Airways started operations to Hongkong on a fortnightly frequency in June 1949 but owing to conditions in China and the poor traffic offering restricted its operations up to Bangkok. It is now operating to Bangkok with a weekly frequency. The traffic carried still continues to be poor. Indian Overseas Airlines which met with financial difficulties could not operate on the route Calcutta—Singapore. Bharat Airways has now been given a licence for the extension of its Calcutta—Bangkok service to Singapore. The traffic potential on the routes to the East of India is at present not very high and competition is intense. Taking all the operators together, there are at present as many as twelve services a week to Bangkok and seven services a week to Singapore. The Indian service will have to compete with these services and unless it is suitably equipped and organised and is in a position to offer a service which can stand comparison with those of other operators, the chances of its making good are not bright. Bharat Airways has, however, already had some experience of operation on the routes, but with the unsettled conditions in China and only a very restricted service to Bangkok, it has not had a chance so far to exploit the position fully. With the proposed extension to Singapore, it is likely that the Indian service may prove worthwhile.

**124. Service to Teheran.**—In 1949, Indian Overseas Airlines was given a provisional licence to operate an air service from Bombay to Teheran, but the Company could not start operations on this route due to financial difficulties.

## **PART III**

# **REORGANISATION OF THE AIR TRANSPORT INDUSTRY**



## PART III

# REORGANISATION OF THE AIR TRANSPORT INDUSTRY.

## CHAPTER 5

### Reasonable cost of operation

125. **General.**—In order to be able to assess the probable measure of self-sufficiency which should be attained by the Air Transport Industry, the Committee has been faced with the necessity of estimating both the transportation revenue the Industry may expect to earn and the reasonable level of cost which it has to incur in providing that transportation. In this Chapter, we proceed to deal with the determination of the reasonable level of operating costs.

126. **Factors which govern reasonable cost.**—Three important factors govern the minimum reasonable cost)at which an airline operator may be expected to provide transportation:

- (a) The nature of the routes to be operated and the traffic potential existing on those routes.
- (b) The inherent characteristics, both economic and physical, of the types of aircraft available to the operator.
- (c) The managerial skill and productive efficiency shown by the operator.

We discuss these matters serially.

127. **Nature of Routes and Traffic Potential.**—In the problem before the Committee, this item was more or less fixed by the state of existing development of the Industry in India and the lack of evidence suggesting any spectacularly rapid rate of increase in traffic. For this reason (any general increase in the frequency of services on existing routes seems unlikely in the immediate future. This fact is of major importance in determining the maximum practical utilization of flying equipment and consequently is of great significance in its effect on operating costs.

128. **Elements which make up the operating cost.**—Within the framework imposed by the maximum practicable utilization which can be achieved with existing routes and existing traffic, the elements of cost which go to make up the total operating expense per hour of flying have been listed by the Committee in question 6 of its Questionnaire as follows:

(i) *Direct operating costs:*—

- (a) Fixed direct operating costs (i.e., irrespective of amount of flying)
  - (1) Depreciation—aircraft
  - (2) Depreciation—spare engines and propellers
  - (3) Aircraft insurance
  - (4) Aircraft housing fees
- (b) Variable direct operating costs (i.e., according to amount of flying).
  - (1) Fuel and oil
  - (2) Flight crew salaries (excluding hostesses)
  - (3) Aircraft servicing (labour, materials, overheads including stores organization)
  - (4) Aircraft overhaul (labour, material, overheads including stores organization)
  - (5) Landing fees and any other route charges.

(ii) *Indirect operating costs:*—

- (a) Operations on—costs (including flight crew insurance, travelling and accommodation expenses, uniforms and salaries, etc., for operations management and ground staff)

- (b) Training (all flight crew)
  - (c) Passenger services (meals, hostesses' salaries, etc., passenger insurance, surface transport, etc.)
  - (d) Traffic, sales and agencies (booking offices, including salaries for traffic management and personnel, rent, etc., agent's commissions, reservation control systems, etc.)
- (iii) *General costs:*
- (a) Interest on working capital, etc.
  - (b) Administration (including Directors' fees, salaries and overhead for top management, office management, etc.)
  - (c) Office rents and expenses [other than traffic included in (ii) (d)]
  - (d) General publicity and advertising [other than time-tables etc. included in passenger services (ii) (c)]
  - (e) Medical and welfare
  - (f) Accounts and audit
  - (g) Miscellaneous items.

Certain of these costs are more or less determined by the inherent characteristics of the aircraft as mentioned above and certain of them are very largely under the control of the operator. In the first category lie all the fixed direct operating costs, viz., depreciation, aircraft insurance and aircraft housing fees; certain of the variable direct operating costs, viz., fuel and oil, flight crew salaries and landing fees; and one item of general costs, viz., interest on working capital. We realise that expenditure on fuel and oil and on flight crew salaries is to some extent under the control of the operator but with the same type of aircraft the rate of fuel consumption will be of the same order with different operators, although it is capable of some reduction with refinements in operating technique and elimination of wastage, while a given type of aircraft will require the same number and grade of flight crew members for all operators. In this latter item of crew salaries there is certainly some room for the exercise of managerial control, in ensuring proper utilization of the crew members employed and in keeping scales of pay within reasonable limits, but the variations from company to company will not be very large. On the other hand, aircraft servicing and aircraft overhaul costs, all items of indirect operating costs and all items but interest on working capital from the general costs group will show very wide variations (even for the same type of aircraft and for the same aircraft utilization) as influenced by the efficiency of the operator.

For these reasons, consideration of the cost elements has been divided into the two categories indicated and they will be dealt with in that order, firstly, those items mainly dependent on the inherent characteristics of the aircraft, and secondly, the items whose control involves the exercise of efficiency in management. The reasonable level of costs will first be determined on the basis of expense per flying hour, but this, in itself, does not provide the necessary measure of cost related to a standard unit of transportation, such as a ton-mile of traffic. Therefore, after having determined the reasonable level of costs per hour for each type of aircraft, for a range of values of aircraft utilization, such costs will be related to the physical characteristics of the aircraft types concerned as well as to the particular stage distances on which they are employed, to determine the corresponding reasonable costs per capacity ton-mile.

**129. Characteristics of Aircraft Types.**—In considering this item, it is observed that by far the greater proportion of the air transportation of India, both scheduled and non-scheduled, is being performed by the aircraft known as the "Dakota". This 21-seat aircraft, fitted with two Pratt and Whitney Twin Wasp R-1830-92 (or SIC 3G) engines, is identical with the aircraft type designated by the United States Civil Aeronautics Administration as the

Douglas DC3C-SIC 3G. Although the DC3 first came into service in 1936, there are still far more of this type of aircraft than any other in service with commercial airlines throughout the world. We understand that some of them in U.S.A. and Australia have accumulated as much as 40,000 to 50,000 hours' flying and are still in use and in excellent condition. The Indian Dakota equipment is all derived from War-surplus stocks converted for commercial use and none has accumulated more than about 8,000 hours flying.)

Apart from a large fleet of over 90 of these Dakotas, the only other types now in use in Indian domestic scheduled air services consist of 12 British-built 27-seater Vickers type VCIB or "Viking" aircraft fitted with two Hercules engines, two French 10-seater aircraft built by the Societe Nationale de Construction des Avions de Sud-Ouest, Type 95, fitted with two SNECMA type 12S engines, and commonly known as the SO-95, and two British DH104 de Havilland "Dove" 8-seater aircraft fitted with DH Gipsy Queen engines. The latter two aircraft have not been in regular use for some time and the operator is endeavouring to dispose of them.

For external operations, 4 Lockheed "Constellation" Model 749 aircraft, fitted with 4 Wright Cyclone R-3350 engines, and 3 Douglas DC4 "Skymasters" with 4 Pratt & Whitney R-2000 engines, are at present owned by Indian companies.

Current difficulties in the way of raising fresh capital and the present very high prices of new types of transport aircraft make it impracticable to consider immediate replacement of present equipment, even if there were available proved types of aircraft whose economy of operation under conditions such as obtain at present in Indian air transport was likely to be superior to that of the types now in use. The Committee has, therefore, confined its detailed study to the operating costs of the types at present in use in this country, in particular the Dakota and the Viking. For purposes of comparison, however, the estimated cost levels which could be achieved with several other types of aircraft which have been suggested as suitable for operation in India have been included at the end of this Chapter.

130. **Speed.**—From a study of the data submitted by operators in reply to question 5(iv)(n) of the Committee's Questionnaire (and in the case of the Dakota after comparison of these data with figures for operations with similar aircraft in Australia), physical characteristics which may be regarded as typical for purposes of assessment of Indian results have been determined. The most important physical characteristics of an aircraft as affecting operating economics are speed, payload and fuel consumption. The speed which is of significance is the average attained from departure point to arrival at the unloading point at the destination; this is known as "block-to-block" or simply "block" speed. A great deal of information is available both in respect of the Dakota and the Viking, and to a lesser degree for the SO-95, as to the block time taken on stages of varying lengths under average operating conditions. The figures for block time have been ascertained after a careful study of the time tables of the operating companies. From these results the curves on Chart 2 (Appendix XV) have been constructed showing block time plotted against stage length. From these curves average block speeds have been calculated for the various distances and plotted against stage length on Chart 3 (Appendix XV). From Chart 3 may be read the normal average block speed obtained in operating a Dakota, Viking or SO-95 on route stages of varying lengths. It will be noted that the block speed drops sharply as the stage distance is reduced for the reason that there is always about the same amount of time taken in taxiing out, running up the engines, and the take-off run itself and landing and taxiing in. This time is not productive of distance travelled towards the destination, and the shorter the direct flight time, the greater the influence of this fixed and unavoidable time-interval in reducing the average speed.

131. **Payload.**—The other two factors, viz., payload and fuel consumption are interrelated, since the maximum permissible gross weight of the aircraft for take-off is prescribed at a fixed figure, determined on safety grounds in accordance with current airworthiness and emergency performance requirements of the Director General of Civil Aviation. Consequently the more fuel it is necessary to carry in order to provide a safe supply for the proposed length of flight, the smaller becomes the margin of weight available for payload. In determining the safe supply of fuel to be taken on board when planning a particular flight, it is not sufficient to calculate the number of gallons which would be consumed under cruising conditions in flying from point to point. Three further allowances must be made. Firstly, a quantity of fuel must be allowed for the period of very high consumption at full power during take-off, including an allowance for taxiing and engine run-up. Secondly, a quantity of fuel must be allowed for contingencies such as excessive head winds or the existence of some emergency condition which may prevent an immediate landing on arrival at the intended destination. Thirdly, a rate of fuel consumption appreciably in excess of the reasonable minimum must be assumed for flight planning purposes, to guard against occasions when consumption will actually be considerably higher due to some slight maladjustment of the carburettor or slight malfunctioning of the engine. Assumptions made in calculating weight payload curves shown on Chart 5 (Appendix XV) are as follows:

Item	A(Dakota)	B(Viking)	C(SO-95)	D(Skymaster)
Imperial gallons of fuel required for taxiing, engine run-up and take off.	20	30	12	50
Flight planning rate of consumption, Imperial Gallons of fuel per block hour, for appropriate stage distance (block time from Chart 2 in appendix xv). This rate of consumption is approximately 7 per cent above the reasonable minimum.	75	100	33	187
Minimum normal reserve fuel equivalent to 1 hour's additional flying	75	100	33	187
Maximum permissible gross weight	lbs. 26,200 (Passenger) 26,900 (freighter)	lbs. 34,100	lbs. 12,346	lbs. 70,700* 63,500 (landing) 59,000 (zero fuel)
Basic operating weight ready to receive fuel and payload [i.e. empty weight of aircraft plus oil, water, cabin equipment, passenger service items such as food, drink, newspapers, magazines, blankets, pillows flight crew, cabin attendant(s)]	18,850 (passenger) 17,600 (freighter)	24,400	9,571	44,000

[ TABLE No. 13 ]

\*In the case of the Skymaster, as with most of the more advanced types of present day aircraft, the weight-payload may be limited by at least two factors other than the maximum gross weight permissible for take-off. Firstly, the maximum permissible gross-weight for landing is fixed at a figure very much lower than the permissible take-off weight. The actual maximum permissible weight for take-off on short-range flights must therefore be determined by adding to the landing weight, the weight of fuel actually calculated to be consumed during the proposed flight (exclusive of reserve). Secondly, the maximum permissible weight of the loaded aircraft exclusive of fuel, (known as zero-fuel gross weight) is also laid down for reasons of structural strength and the difference between this figure and the basic operating weight sets an upper limit to the payload which may be carried under any circumstances. In the case of the particular Skymasters owned by Bharat Airways, this limit is 59,000—44,000—15,000 lbs. and since this is less than the weight payload determined by consideration of fuel consumption on stage below approximately 1,500 miles, it becomes the governing factor in fixing the weight payload for all likely domestic flights envisaged by this operator.



The weight-limited payload appropriate to a given stage distance does not necessarily represent a load which it is possible to carry in practice, as the space or volumetric limitations of the interior layout of the aircraft frequently impose a more severe restriction. In order to determine the volumetric limit payload for a passenger aircraft, it is necessary to take into account the number of seats installed and the total volume of all space provided for storage of baggage, freight and mails. It is also necessary to observe any structural strength limits which may be placarded by direction of the airworthiness authorities in respect of such compartments. It is usual to assume that a passenger with his 44 lbs. free baggage allowance will represent 200 lbs. of payload, *i.e.*, that the weight of an individual passenger averages 156 lbs. It is found by experience that passenger baggage seldom has an average density of more than 14 lbs. per c. ft. of volume occupied and that it is unrealistic to assume that the average density of a normal assortment of freight and mail bags will be greater than 10 lbs. per c. ft. It is further generally recognised that not more than 90 per cent. of the actual or "water" volume of the storage space provided can effectively be utilised. From these considerations the volumetric payload limits of the aircraft types under consideration may be calculated on a mutually consistent basis and the results are set out in Table No. 14. The figures obtained from this table, together with the assumptions previously indicated in regard to fuel uplift in accordance with flight planning requirements, have been used in preparing the range-payload curves on Charts 5A, 5B, 5C and 5D (Appendix XV). It should be noted that increase in the volumetric capacity by means of interior re-arrangement such as provision of more passenger seats is only of value provided the weight limited payload for the stage length on which it is proposed to operate the aircraft concerned is equal to or greater than the new volumetric payload. (In other words, the weight-limited payload must always be the overriding factor where it has a lower value than the volumetric limit.)

132. **Economic Characteristics.**—The principal fixed economic characteristic of a given type of aircraft is naturally the cost of the complete aircraft and of major items of essential spare equipment, particularly power plants. The capital items included in the original cost of each unit of equipment are taken to be

- (a) average purchase price of a fully equipped aircraft,
- (b) cost of spare power plants at 50 per cent. of the number installed in each aircraft, and
- (c) capital items of airframe spares at 10 per cent. of the value of the aircraft less power plants.



In the case of the aircraft under consideration, the appropriate capital values are considered to be as follows:—

Capital Item	Dakota Rs	Viking Rs.	SO—95 Rs.	Skymaster Rs.
(a) Fully equipped aircraft . . . .	1,33,850	6,69,000	5,25,000	8,00,000
(b) Spare power plants . . . . .	16,000	67,000	40,000	50,000
(c) 10% airframe spares . . . . .	10,185	53,500	44,500	70,000
Total . . . . .	1,60,035	7,89,500	6,09,500	9,20,000

[TABLE NO. 15]

**133. Hourly Operating Costs directly dependent on Aircraft Characteristics.—**

It is now possible to deal in turn with each of the items which go to make up the total cost of operation per hour under the headings listed in paragraph 128 of this Chapter.

**134. Fixed direct operating costs (i.e., irrespective of amount of flying).— Depreciation—aircraft and capital spares.**—After giving very careful consideration to the various alternative methods suggested for determining the reasonable allowance to be made for depreciation, the Committee reached the conclusion that a constant fixed sum should be set aside each year representing depreciation of the capital cost of the aircraft and its major essential items of capital spares over a life of an agreed number of years, and (that even after the book value has been written down to zero, the same amount should be set aside annually as an obsolescence and replacement reserve fund.) In determining a suitable life to be assumed in respect of each type of aircraft, it is necessary to take into account whether the aircraft is in fact a new type likely to remain an economic and attractive transport for some considerable time to come or whether it is a type which has been in existence for a number of years already and likely to be superseded on the grounds of economy of operation and passenger preference within a reasonably short time. It is also necessary to recognise, in the case of aircraft which may have been purchased from Disposals stocks, the fact that the purchase price may have been far below a normal market value for similar equipment and that a higher rate of depreciation is, therefore, justified in order to show a reasonable allowance towards the replacement reserve.) In the case of the Dakota, the Committee feels that depreciation to zero value over a life of four years represents the minimum charge that should be made against this head and the allowance per annum should, therefore, be approximately Rs. 40,000.) It is necessary to observe here that we consider inadequate the allowance of Rs. 25,000 per year proposed by the Director General of Civil Aviation in his reply to Question 30 of our Questionnaire. In the first place it is based on the minimum price of Rs. 1,25,000 paid for a fully converted Dakota and not the average actually paid by the Indian operators. Secondly, it presupposes that depreciation should be spread over a period of five years, which in all the circumstances we feel rather too long for this purpose. And thirdly it takes no account of the essential items of capital spares which should be depreciated along with the aircraft.)

In the case of the Viking, taking into account the fact that the aircraft was purchased as a new type, it is considered reasonable to assume a life of eight years which results in an annual charge of approximately Rs. 98,600 for depreciation.) Here again the figure of Rs. 75,000 used by the Director General of Civil Aviation is felt to be too low. While we are in agreement with the

assumed life of eight years, the capital value taken at Rs. 6,00,000 is considerably below the average actually paid for these aircraft by the Indian operators and, as in the case of the Dakota, no allowance has been made for essential items of capital spares.

In the case of the SO-95, although it was purchased as a new type, it is generally recognised that a relatively short effective life should be assumed in the case of small types of aircraft and a figure of six years has been taken in the Committee's calculations, resulting in an annual charge of approximately Rs. 1,01,000.

The Skymaster, while coming within the category of Disposals aircraft, justifies the assumption of a considerably longer life than that allowed for the Dakota, since it is of considerably more recent design and capital outlay involved is very much greater. On the other hand, we believe it would be unreasonable to take the same life as in the case of a new type such as the Viking and a compromise has been effected at 6 years, resulting in an annual charge of Rs. 1,53,300.

**135. Aircraft insurance.**—Evidence placed before the Committee showed that operators were paying varying rates for aircraft hull risk insurance ranging from  $7\frac{1}{2}$  per cent. to  $9\frac{1}{2}$  per cent. on the value of the completely equipped aircraft and for the purpose of these costs an average figure of  $8\frac{1}{2}$  per cent. has been assumed. This results in an annual charge for the Dakota of Rs. 11,200; for the Viking Rs. 56,870; for the SO-95 Rs. 47,000; and for the Skymaster Rs. 68,000.

**136. Aircraft housing fees.**—These housing fees have been taken directly from the table laid down in Section B of Schedule V to the Indian Aircraft Rules, 1937. As a concession by Government the Dakota is included in Aircraft Class D, although its maximum permitted gross weight for take-off exceeds the upper limit of the Class. In consequence, the housing charge for a Dakota amounts to Rs. 6,400 per annum. The Viking comes within Class E and the corresponding housing charge per annum is Rs. 9,600. The SO-95 lies in Class C for which an annual charge of Rs. 4,000 is made. The Skymaster comes within Class F and the charge per annum is Rs. 16,000.

**137. Variable direct operating costs (i.e., according to amount of flying)—Fuel and oil—Reasonable rate of fuel consumption of the Dakota.**—The Committee heard a great deal of evidence on the question of the minimum reasonable rate of fuel consumption which may be achieved with the Dakota. We felt compelled, however, to give full weight only to results which had been proved over a reasonably extended period in actual operation and results which represent the full amount of fuel actually put into the aircraft, i.e., including losses due to evaporation and fuel necessarily used in ground testing engines, flushing fuel filters, etc. The company which showed the minimum average fuel consumption per hour for the year 1949 (Air-India) achieved a figure of 63.2 gallons per hour. With considerable encouragement from the Director General of Civil Aviation, this Company had experimented during the early months of 1950 in an endeavour to bring the rate of fuel consumption down still further and for three months it was successful in achieving an average rate of approximately 63 to 64 gallons per hour. At this stage, however, dangerous effects of airframe vibration, possibly due to the low engine speeds employed, became apparent in the form of cracks in the elevator spars and the use of excessively low engine revolutions per minute was, therefore, abandoned during April 1950. Fuel consumption for this month immediately rose to 66.5 gallons per hour and the Company believes that the figure of 68 gallons per hour, achieved by it in 1949.

represents a reasonable working minimum that is likely to be obtained in regular operation. On the other hand, the Committee was faced with the fact that no other operator in India has yet consistently achieved a figure as low as 68 gallons per hour, several showing over 70 gallons per hour and as high as 78.3, the average rate for the six operators whose results for the last year are available in a reliable form being 71.5 gallons per hour. We are advised that it has not been found possible to maintain a rate of consumption even as low as 70 gallons per hour in Australia and there is some evidence that 75 gallons per hour is regarded as the normal rate of consumption by the engine and carburettor manufacturers. While we fully recognize the importance of avoiding waste in this item of expenditure, which accounts for a very considerable proportion of the direct operating costs, we are of the opinion that it would be unwise in view of the evidence presented to us to base our cost estimate on the assumption that an overall rate of fuel consumption less than 70 gallons per hour can consistently be maintained with safety, and this figure has accordingly been used in our calculations. The figure of 61 gallons per hour taken by Director General of Civil Aviation as the basis for his calculations of fuel costs appears to the Committee to have no foundation in practical achievement by operators either here or in other countries.

**138. High price of aviation fuel in India.**—The Committee notes with some concern the very high price of aviation fuel in India and has endeavoured to compare the situation obtaining here with that in other countries. Quite apart from the high rate of customs duty of As. 15 per gallon levied on such petrol used in India, the price received by the Oil Companies even at Bombay and Calcutta is higher for the same grade of fuel than that obtaining in Australia, in spite of the much greater distance of that country from sources of supply. After allowing for bulk rebates in both cases, the current prices received by the Oil Companies per Imperial Gallon for 100/130 grade aviation fuel are: Calcutta (Dum Dum) 28.4 pence (English) corresponding to Rs. 1-9-3, and Melbourne (Essendon) 23.0 pence (English) corresponding to Rs. 1-4-6. These figures take into account a very recent reduction in price of 9 pies per gallon in India and a very recent increase of approximately the same amount in Australia (but not a reduction in price of As. 2 a gallon given effect to from 15th August 1950). The customs duty payable in Australia is equivalent to As. 8 per gallon, making the average total cost to the Australian operator Rs. 1-12-5, as compared with the minimum Indian figure of Rs. 2-8-3, a difference of 42 per cent. Two other factors combine to aggravate still further the disability under which the Indian Operator labours in regard to cost of fuel. Firstly, most of the DC-3 operations including those in U.S.A. and Australia are on fuel of the grade known as 91/98 which is available there at an appreciably lower price than the higher octane grade of 100/130 in use in this country. In Australia, the Oil Company's price differential between these grades is approximately 10 per cent. Secondly, the average Indian operator has to buy a considerable percentage of his fuel at airports situated inland, where transport costs added by the Oil Companies raise the price very appreciably, frequently by As. 7 or As. 8 per gallon, and occasionally, as in the case of Mohanbari, by as much as Rs. 1-1-0 per gallon. After thorough inquiry, we conclude that there is no prospect of 91/98 grade fuel being made available in India at a lower cost than 100/130 grade and the Oil Companies have assured us that the prices charged at inland points do not include any "loading" beyond their actual increase in costs of transport and distribution, so that there appears to be little likelihood of relief on these points. The high cost of fuel therefore remains a very real factor in raising the cost of air transport in India.

**139. Cost of fuel and oil for the purpose of our calculations.**—In assessing the appropriate price per gallon to be used in computing the average cost to the Indian operator, a survey was made of the actual charges being made at the majority of airports served by Dakota aircraft, allowance being made for the

total quantity of fuel uplifted at each point. The prices at many of the points served are very considerably higher than those at the main ports of Bombay and Calcutta and it was found that the appropriate figure representing the current average price for Dakota operations would be Rs. 2-14-0 per gallon after allowing for the appropriate bulk rebate. Considerable variation exists in the rate of consumption of oil and this is only to a limited extent under the control of the operator, since it depends very largely on the basic condition of the individual engine and will vary throughout its life between overhauls. In his reply to question 30, the Director General of Civil Aviation has taken an allowance of 1/60 of fuel consumed, by weight, in computing the cost of oil. This figure appears to have been derived from a formula designed to determine the minimum amount of oil required to be carried for a given stage distance, having regard to the probable actual consumption of oil during flight. It does not take account of the wastage of oil at oil-change periods (at present prescribed as 100 hrs. in India) and at engine-change. Making allowance for these amounts in addition to that consumed during flight, it is considered that an allowance of 5 per cent. of the cost of the fuel gives a figure in reasonably close agreement with actual results.)

14). **Cost per hour for "fuel and oil".**—In the case of the Dakota, therefore, the expenditure per flying hour on fuel at 70 gallons per hour at Rs. 2-14-0 per gallon represents Rs. 201, plus an allowance of Rs. 10-3 for oil, the total being Rs. 211-3 per hour.

In the case of the Viking, Air-India in 1949 achieved an overall consumption of approximately 94 gallons per hour, while Indian National Airways showed a figure of 109 gallons per hour. This latter figure of 109 gallons appears to the Committee excessive and having regard to the opinions given before us regarding reasonable minimum consumption figures for the Hercules engines, we have accepted the 1949 results of Air-India as representative of normal conditions and have consequently based our calculations on a rate of consumption of 94 gallons per hour. Here the proposal of the Director General of Civil Aviation for adoption of 85 gallons per hour appears to us, as in the case of the Dakota figure, to be unrealistic. The appropriate fuel price in the case of the Viking differs from that which has been allowed for the Dakota, since Viking operations draw a larger proportion of the total fuel uplifted from the ports at which the cost is the lowest. An examination of the approximate amounts of fuel uplifted from the various points served by Viking operations leads us to the conclusion that the appropriate cost to be assumed for current conditions would be Rs. 2-10-0 per gallon (after allowing for appropriate bulk rebate.) Expenditure per flying hour on fuel and oil for the Viking, therefore, becomes Rs. 246-8 per hour for fuel, plus allowance for oil at 5 per cent., Rs. 12-3, making a total of Rs. 259-1 per hour.

Fuel consumption of the SO-95 appears to average approximately 31 gallons per hour and the appropriate price having regard to points of uplift is at present Rs. 2-12-0. Cost per hour of fuel and oil for SO-95 will, therefore, be fuel Rs. 85-2 plus allowance for oil Rs. 4-3, the total being Rs. 89-5 per hour.

Accurate statistics are not available for determining the actual rate of fuel consumption which has been achieved with the Skymasters in the hands of the Indian operators, but a very considerable volume of experience has been accumulated with this type of aircraft in Australia, where the average rate of fuel consumption is found to be approximately 175 gallons per hour. In the absence of more specific data of local application, the Committee has accepted this figure as a basis for its calculations, and for domestic operations the price of fuel for the Skymaster has been taken as the same as that appropriate to the Viking, *via.*, Rs. 2-10-0 per gallon. The fuel cost per hour is, therefore

Rs. 460 plus 5 per cent. allowance for oil Rs. 23, total being Rs. 483 per hour. In the case of external operations the whole of the customs duty of annas 15 per gallon is refunded. Taking account of the slightly higher cost of fuel at ports other than Calcutta on the external service, the average price appropriate to the Calcutta/Bangkok/Singapore route appears to be Rs. 1-11-0 per gallon. Fuel cost per hour is, therefore, Rs. 296 with oil Rs. 23 as before, making a total of Rs. 319 per hour. Since the report was finalised, the Committee was informed of a reduction in the price of aviation fuel by As. 2 per gallon, with effect from 15th August 1950. The above calculations do not take into account this reduction.

**141. Flight crew salaries (excluding hostesses)—Composition of crew.**—In the case of the Dakota and the Viking the standard Indian flight crew consists of captain, co-pilot and radio operator. We are informed that the standard flight crew on aircraft such as the DC3, and even more advanced types such as the Skymaster and Convair 240, in the United States and Australia comprises two officers only, the captain and co-pilot. Both these men are required to have proficiency as radio operators in addition to their flying qualifications. After hearing many opinions on the question of the practicability of reducing costs in India by adopting a similar system, we came to the conclusion that having regard in particular to (a) the less fully developed system of air navigational radio aids provided in this country and (b) the difficult flying conditions during the monsoon, it would not be desirable at the present juncture to introduce this system. The Committee noted, however, that there were other advantages in the use of a two-man flight crew apart from reduction in salary costs, namely, increased weight-payload due to the reduction in basic operating weight, and increased volumetric payload capacity through availability of the space now occupied by the radio officer for stowage of cargo. It is recommended, therefore, that the situation be kept under review, with the objective of introducing the two-man flight crew as soon as practicable consistently with the highest standards of safety.

**142. Emoluments of crew.**—The Committee has had a great deal of information placed before it concerning the present emoluments of the flight crews and is aware of considerable variations in the rate of pay for these officers. Taking into account the gradual improvement in the supply position, we believe that there is justification for assuming some reduction below the maximum rates which have been paid to officers in these categories recently. In this connection the rates suggested by the Director General of Civil Aviation as reasonable for captains were accepted as being representative of emoluments likely to be paid during the next few years, viz., a total emolument of Rs. 1,650 per month. In the case of co-pilots and radio officers, however, it was felt that the Director General of Civil Aviation had set his figures, at Rs. 900 and Rs. 420 respectively, rather lower than the likely average of payment to these crew members. The Committee believes that a total emolument of Rs. 1,000 for a co-pilot and Rs. 570 for radio officer represents a reasonable average of the salaries and allowances likely to be received by officers on these grades. Total crew pay per month, therefore amounts to Rs. 3,220,

**143. Reasonable flight crew utilisation.**—Considerable argument was heard on the question of a reasonable maximum number of flying hours per month to be obtained from each crew member. The Committee noted that crew utilization has in some cases recently been as high as 130 to 140 hours flying in a month, although the normal average in India at present appears to be 90 to 100 hours. The Indian Aircraft Rules do not at present specify any upper limit to the amount of flying which may be done within a specified period by

flight crew members, but Rule 42(2)(iv) requires medical examination on completion of 125 hours in the capacity of pilot within any period of thirty consecutive days. However, in certain other countries definite limitations on flight time are prescribed. In this connection it was noted that the appropriate section of the Australian Air Navigation Regulations, which is in turn based upon a corresponding Section of the United States Civil Air Regulations, lays down several limitations which are detailed in Appendix XVI. The Committee believes that such regulation of permissible flying time has been adopted by several other important countries on sound medical grounds, having regard particularly to the insidious effect of flight fatigue which may delay a pilot's reactions in response to an emergency such as engine failure during take-off, occurrence of fire in flight, or any similar situation demanding immediate and accurate mental analysis and decisive action in order to preserve safety. We believe that some such limitations should be adopted by the Director General of Civil Aviation in the interest of safety, though we understand the International Civil Aviation Organisation has not so far prescribed any limitation on maximum flying hours for crew members. We accordingly recommend that the flying hours of pilots should be limited to 1000 hours per year, following the practice in U.S.A. and Australia. Our assumptions regarding utilization of flight crew would then be based on such limitation. We are informed that an overriding limitation of 1000 hours flying per year leads in practice to an average utilization of all crew members of about 900 hours per year, corresponding to 75 hours per month, which figure has accordingly been taken as our basis in determining crew cost per hour.

144. **Cost per hour for flight crew salaries.**—The appropriate figure for flight crew salaries for Dakota or Viking will therefore be  $\frac{3220}{75}$  or Rs. 42·9 per hour.

In the case of the SO-95 the crew consists of a captain and a radio operator only. This is a fairly complicated and sensitive aeroplane to fly and, in view of the fact that the captain has no assistance from a co-pilot, it is considered necessary to allow a margin for the extra responsibility involved. In recognition of this, the captain's total emoluments per month have been assumed at Rs. 1,800 instead of Rs. 1,650 in the case of the Dakota, which, together with the radio operator's pay of Rs. 570, makes a monthly total of Rs. 2,370. At a crew utilization of 75 hours per month, this represents Rs. 31·6 per hour.

The case of the Skymaster involves the selection of crew with qualifications considerably in excess of those acceptable for the Dakota or the Viking, and, for the present at least, the provision of extra crew members. Bharat Airways in its estimates for the cost of operation of the external service to Bangkok and Singapore has taken the following crew and emoluments as the basis for calculation:

	Rs.
Captain . . . . .	2,000 per month
First Officer . . . . .	1,500 per month
Navigator . . . . .	2,000 per month
Radio Officer . . . . .	750 per month
Flight Engineer . . . . .	1,500 per month
Total	7,750 per month



In the opinion of the Committee these scales of pay are somewhat excessive even after allowing for the higher qualifications and greater degree of responsibility involved as compared with a Dakota crew. In our opinion, the following amounts are the maximum that would be justified for the purpose of estimating reasonable minimum costs:

	Rs.
Captain . . . . .	1,850 per month
First Officer . . . . .	1,200 per month
Navigator . . . . .	1,750 per month
Radio Officer . . . . .	650 per month
Flight Engineer . . . . .	1,000 per month
Total . . . . .	6,450 per month

At a crew utilization of 75 hours per month this represents Rs. 86 per hour for external operations. For internal operations, there will be no need to carry a flight engineer, but the remainder of the crew would be the same, giving a total crew salary per month of Rs. 5,450. The cost per flying hour for internal operation, at a crew utilization of 75 hours per month will therefore be Rs. 72.6. It may be possible for Bharat Airways after some experience to do without a navigator on the internal operations but it will be necessary to have a second co-pilot. The cost will then come down by Rs. 7.3 per hour.

**145. Landing fees.**—Landing fees are prescribed, according to the maximum gross weight of the aircraft types concerned, in Schedule V, Section B, of the Indian Aircraft Rules. As in the case of housing charges, the Dakota, although its maximum weight is above the upper limit of class D, has been granted a concession by the Government of India and is taken as coming within this class for the purpose of assessment of landing fees, which are imposed at the rate of Rs. 25 per landing. The average length of Dakota flight under the existing route pattern is of the order of 270 miles representing a block time of approximately 1.8 hours so that the allowance for landing charges per hour will be Rs. 14/-.

The Viking, in class D, is assessed at Rs. 50 per landing and in this case the average stage length of 650 miles corresponds to a block time of 3.63 hours resulting in an expenditure of Rs. 13.8 per hour.

The SO-95 in class C is charged Rs. 10 per landing and in this case the average stage distance of 263 miles represents 1.42 hours block time giving a figure of Rs. 7.1 per flying hour.

The Skymaster in class F is assessed at Rs. 150 per landing and in the case of external operations, the average duration of flight is approximately 5 hours resulting in an expenditure of Rs. 30 per flying hour for landing charges. In the case of internal routes it may be assumed that the Skymaster would operate on stages of same average length as the Viking which would give a flight time of 3.5 hours, the corresponding expenditure per flying hour being Rs. 42.9.

**148. Interest on working capital:** [Item (iii) (a) of question 6 of the Committee's Questionnaire].—The Committee's question regarding the opinions of operators as to the amount which should be allowed as an item of cost in the nature of interest on working capital was generally misunderstood, judging by the replies received. The intention is to provide an allowance for a reasonable

rate of interest, say 4 per cent. per annum, on the capital necessarily locked up in funds held to meet short term commitments such as, say, one month's payment of salaries and wages, and on the capital used in providing the essential stocks of spares and equipment for continuing operations. This figure is not amenable to exact calculation, but the Committee is of the opinion that some allowance for this factor should be made and suggests the following basis. For the Dakota aircraft operated at a utilization of 1000 hours per year, the minimum allowance per aircraft for one month's salaries and wages bill is estimated to be of the order of Rs. 25,000, while the cost of essential stocks of running spares and materials would be at least Rs. 50,000 per aircraft. Interest at 4 per cent. on this total sum of Rs. 75,000 represents Rs. 3,000 per annum or, at a utilization of 1000 hours per annum, Rs. 3 per flying hour.

For the Viking at 1000 hours utilization, the allowance for one month's salary may be taken as the same as that assumed for the Dakota, viz., Rs. 25,000, but the value of spares should probably be increased by 50 per cent. making a total of Rs. 1,00,000 on which the interest would be Rs. 4,000 per annum and the appropriate charge per flying hour Rs. 4.

For the SO-95 aircraft, the appropriate allowance for one month's salaries should probably be slightly less having regard to the reduced size and traffic potential of the aircraft, say Rs. 20,000. In his case, however, spares costs are high, and by reason of the fact that the operator of this equipment owns only two aircraft in the fleet, the necessary spares stocks will be proportionately greater per aircraft. For this reason a figure of Rs. 80,000 has been allowed for spares, giving, as in the case of the Viking, a total of Rs. 1,00,000 and therefore a cost of Rs. 4 per hour.

In the case of the Skymaster it is considered reasonable to allow Rs. 80,000 for one month's salaries and wages, and Rs. 82,500 for spares, giving a total of Rs. 1,12,500 on which the interest at 4 per cent. would be Rs. 4,500 per annum, resulting in an hourly expenditure of Rs. 4.5.

These rates of expenditure should properly be varied to some extent in relation to aircraft utilization, although the necessary stocks of spares and the appropriate salary and wages commitment will require a certain amount of increase for a greater amount of flying. However, having regard to the necessarily approximate nature of the allowances made, and to the small charges per hour involved, the Committee has adopted the simplifying assumption that these charges will be constant per hour for all values of aircraft utilization. It may be noted that no allowance was made for this item of cost by the Director General of Civil Aviation in his reply to question 30.

147. **Hourly operating costs dependent on skill and efficiency of management.**—From the data presented before the Committee we are of the opinion that variations in efficiency of administration and management of one airline as compared with others are reflected in the levels of cost per hour for similar categories of expenditure under each of the following headings, making up the remainder of the cost items set out in question 6 of our Questionnaire:

- |          |   |  |
|----------|---|--|
| (i) (b)  | { | (iii) Aircraft servicing<br>(iv) Aircraft overhaul   |
| (ii) (a) | { | (a) Operations on-costs<br>(b) Training<br>(c) Passenger services<br>(d) Traffic, sales and agencies |

- (iii) {
- (b) Administration
  - (c) Office rents and expenses
  - (d) General publicity and advertising
  - (e) Medical and welfare
  - (f) Accounts and audit
  - (g) Miscellaneous items.

The Committee devoted a great deal of time to a comparative study and analysis of the actual expenditure of the various operators on these items in an endeavour to determine whether there is evidence of inefficiency and wastefulness, and if so, how it may be remedied. Although in the case of the expense items dealt with in the earlier portion of this Chapter it was possible to determine a reasonable figure by approaching the problem more or less from first principles and calculating a reasonable value, such a method cannot be employed in the items now under review, with the possible exception of aircraft and engine overhaul. The Committee was, therefore, compelled to give a great deal of weight to the results which had actually been obtained by the various operators in the most recent 12 month period for which figures were available and to endeavour to assess whether any or all of these results appeared capable of improvement, and to what extent an improvement could reasonably be expected. The expenditure totals submitted by the various operators in reply to question 6 of the Committee's Questionnaire, stated separately for each type of aircraft were, therefore, divided by the total number of flying hours performed by the same type of aircraft in the period under review and the resultant costs per hour were examined in considerable detail. With the possible exception of publicity and advertising, it is very noticeable that those operators, whose costs are markedly above the average in any one of the items, almost invariably show higher costs in the other fields also. Careful examination of the make-up of the relevant costs, including such factors as scales of pay, convinces us that while there are differences in such rates between different companies, and particularly between different parts of the country, such differences in the rates of pay are by no means the primary reason for the extreme divergence in costs shown by actual results. It is clear to us that the companies showing the higher costs do so largely because they employ greater numbers of staff to achieve given results; in other words they are obtaining a significantly lower productivity from their employees than is the case with the operators showing relatively low costs. In an attempt to produce a rough yardstick for an overall comparison of efficiency between various operators, we have considered the total number of employees in relation to output of the end-product of the Industry, viz., capacity ton-miles of transportation provided per annum. We are conscious of the limitations of this measurement of efficiency, but making allowances for the influence of differing route patterns, etc., we feel that a useful degree of comparison is possible by this method, particularly where all operators are using very similar, if not identical, types of equipment, as is the case with the internal services in this country. From the figures for capacity ton-miles per employee flown by each of the operators during 1949 (or the latest 12 months' period for which reliable statistics were available), the Committee found that there was a great disparity between the highest and the lowest output. It was realised that a fair comparison could not be made without allowing for the differing degrees to which the various operators were self-sufficient in regard to maintenance and overhaul work. Some of them performed their own airframe and engine overhauls as well as routine servicing operations, while others performed airframe overhaul but not engine overhaul, and still others employed sufficient engineering personnel only for the purpose

of routine maintenance work and had all their overhaul work done outside. All personnel engaged in any aspect of engineering, whether routine servicing or overhaul (including supervisory staff, skilled, and unskilled workmen) were, therefore, eliminated from the total strength figures for each operator and the capacity ton-miles per annum per employee, on the basis of the remaining strength of staff, was computed again. Once more a very marked discrepancy was obvious between the productivity of staff shown by various operators in the same general order as had been shown by the figures based on total strength. As might be expected, the company showing the lowest output in capacity ton-miles per annum per employee also showed the highest costs under most of the expense heads being dealt with in this section and the operator showing the highest C.T.M. per employee showed the lowest costs on practically all items. We feel that these results are of considerable significance although absolute values of C.T.M. per employee are not of great importance in themselves and it is difficult to relate them accurately to results obtained in other countries. The analysis gave us a general indication of those companies where some extravagance in staffing policies might be expected to account for high expenditure and the results were borne in mind when examining the cost figures submitted.

148. **Aircraft servicing.**—Servicing cost per hour for the Dakota actually incurred by the company which in 1949 showed the highest figure was over 2½ times that shown by the operator whose expenditure was the least. The remainder are distributed fairly evenly between these limits, and in assessing a reasonable minimum figure it was necessary for us to determine whether there were any reasons why the lowest cost results achieved should not be generally attainable. We are advised by the Director General of Civil Aviation that the standard of servicing found by his Inspectors in their normal examination of the aircraft of this operator is in no way below the Department's prescribed safety standards. Inquiries were also made at Hindustan Aircraft Limited where aircraft maintained by various operating companies have been sent for complete overhaul and the figures gathered there showed that the average man-hours required on work necessary for re-issue of certificate of airworthiness on the aircraft of this particular operator were definitely not greater than in the case of the fleets of any other operator. This seems to confirm the opinion of the Director General of Civil Aviation that the low cost has not been achieved by any unwarranted lack of attention to the aircraft during servicing. A careful examination of the staff establishment and rates of pay in the engineering categories was made in respect of this operator and it was found that some of the rates paid are low in relation to other companies. This operator appears, however, to have been able to retain an acceptable standard of quality in his personnel within the framework of his rates of pay. It was felt, however, that the general upward trend of pay scales, dearness allowances, etc., in the area of this operator in recent months may cause some slight upward adjustment of costs in the near future. There was also some evidence that while giving the aircraft all the necessary attention fully to most safety requirements, there was perhaps a tendency to allow cabin interiors to deteriorate in appearance to an extent that may in the long run require some improvement. It was felt necessary for these reasons to set a minimum reasonable cost figure for aircraft servicing at a level somewhat higher than this minimum figure actually achieved. In this connection the figure submitted by the Director General of Civil Aviation in reply to question 80 in regard to the reasonable level of servicing costs under the existing system of separate operating companies amounts to Rs. 46.6 per hour which the Committee feels is still rather too close to the minimum achieved cost to be acceptable as a basic

standard. We are influenced in this consideration by the realization that any attempt to economise on maintenance beyond the prudent limit which can be reached with sound and efficient management, will inevitably, sooner or later, be reflected in a deterioration in safety margin, and this situation would of course be quite unacceptable from any point of view. We have, therefore, thought it wise to allow some margin in this particular sphere over and above the absolute minimum which might be attainable and have arrived at a figure (for 1500 hours utilization) of Rs. 55.5 per hour. It may be mentioned that the average of the Dakota costs under this head for the six main operators in 1949 was over Rs. 82 per hour, although the minimum was some 25 per cent. below the figure we have adopted.

Examination of the figures submitted for the Viking made it quite clear that, at least up to the present time, servicing costs per hour for this aircraft have been very much above those of the Dakota. After careful consideration we have decided that it would be reasonable to allow a figure of Rs. 84 per hour at 1500 hrs. utilization, i.e., approximately 50 per cent. higher than the corresponding allowance for the Dakota.

**149. Estimates of minimum costs submitted by operating companies.**—At this point it is pertinent to comment on the estimates of minimum cost of operation of those two types of aircraft submitted in reply to question 9(i) of our Questionnaire. Few operators gave the amount of care to their replies to this question which we had hoped for, although several, including Air-India, submitted useful statements. Under the heading of "aircraft servicing", this Company has shown a figure of Rs. 80 per hour for the Dakota and Rs. 198.4 per hour for the Viking, and the very great discrepancy between this cost level and that which we believe to be reasonable calls for some explanation. The matter was examined in some detail with the representatives of Air-India but they could not agree that any improvement below their estimated minimum figure was practicable of attainment. After examining the number of employees and the scales of pay for engineering personnel employed by Air-India as compared with other companies showing far lower servicing costs, the Committee is unable to accept the Company's contention that the figure mentioned represents the practical minimum. We feel that every effort must be made by this Company and others whose servicing costs are appreciably in excess of the Committee's figure to improve the output per head of staff employed in this activity. It is noticeable that the operators achieving low costs in this field employ proportionately a far lower number of unskilled men than do the operators whose costs are high and it would seem possible that an improvement in output could be attained in such cases by reducing very considerably the number of unskilled employees in the maintenance shops even if this meant some slight addition to the ranks of skilled men, whose efficiency and interest in the work is likely to be much higher.

**150. Influence of aircraft utilisation on "Servicing" cost per hour.**—As regards the influence of aircraft utilization on the hourly cost of servicing it is sometimes assumed that there will be no change in this cost irrespective of the utilization. While, at first sight, this might appear likely to arise, we think that there must be some benefit gained even in this field by reason of increase in the amount of flying. For instance, the strength of supervisory staff need not be changed directly in proportion to the increased number of hours flown and the man-hours required for daily inspections will be spread over a greater number of flying hours. After consideration of the factors involved we came to the following conclusions. Servicing cost per hour for a utilization of 2000 hours per annum should be taken at 5 per cent less than at 1500 hours per annum giving a figure of Rs. 52.8 for the Dakota and Rs. 80 for the Viking. Servicing cost per hour at 1000 hours utilization should be taken at 7 per cent higher than at 1500 hours, giving Rs. 59.5 per hour for the Dakota, and Rs. 90 per hour for the Viking.

151. "Servicing" cost per hour for SO-95.—While sufficient data has not yet been accumulated regarding operating results obtained in India to permit of a really accurate assessment of the minimum reasonable servicing costs for the SO-95, an endeavour has been made to estimate the approximate order of such expenditure, taking into account the general characteristics of the type in comparison with the Dakota. Although the aircraft is much smaller than the Dakota, it is of a rather elaborate design, particularly in details of equipment and installations. Taking this fact into account together with the lack of the vast background of past experience which is of so much assistance in the case of the Dakota, it is clear that its servicing costs, at least during the initial years of operation, will be relatively high. In our opinion, for 1000 hrs. utilization, a cost lower than Rs. 55.0 per hour (as against Rs. 59.5 for the Dakota) is unlikely to be achieved for some considerable time. Appropriate figures for 1500 hrs. and 2000 hrs. utilization would be 51.3 and Rs. 48.8 respectively.

152. "Servicing" costs per hour for Skymaster.—The Skymaster operations in India have been too brief and too spasmodic to give a reliable basis at this time for determining an appropriate servicing cost level. However, with an aircraft  $2\frac{1}{2}$  times the weight of the Dakota, and with four power plants, as well as considerably more elaborate equipment, the cost per hour will obviously be much higher. We understand that operations over several years in Australia, with both Dakotas and Skymasters flying under similar conditions, have shown that the servicing cost per hour for the Skymaster is not likely to be lower than three times that of the Dakota. Accordingly we base our estimate on figures of Rs. 178.5 per hour at 1000 hrs. utilization, Rs. 166.2 at 1500 hrs. and Rs. 158.2 at 2000 hrs. (three times the Dakota figures).

153. Aircraft overhaul; Airframe.—Dealing firstly with the overhaul cost per hour appropriate to the airframe as distinct from the power plants, a similar examination to that conducted in the case of the servicing costs showed similar marked disparity between minimum and maximum figures. The same companies occupied generally the same positions on the cost scale as in the case of servicing, and the figures for the company showing the highest cost being approximately 2.4 times that for the operator achieving the lowest cost. A detailed examination of the overhauls conducted by the latter operator during the year showed, however, that through additions to the fleet during the period under review, it had been unnecessary for it to have a major overhaul done in respect of certain aircraft of its fleet. Adjustment for this factor would have brought the actual cost of overhaul up by about 17 per cent. On the other hand, this company has its overhaul work done by Hindustan Aircraft Limited whose charges have dropped considerably during the past 12 months. For this reason, it feels that it may still be possible to maintain the cost at somewhere near the actual figures achieved in 1949. Having examined recent bills actually charged by Hindustan Aircraft Limited for C. of A. overhauls and taking into account costs of delivery and return flying, as well as the extra items of overhaul work necessary during the year on instruments, certain items of electrical and hydraulic equipment, landing gear, etc., we consider that the total airframe overhaul cost per annum, under the present basis of annual C. of A. overhaul, would average approximately Rs. 49,000. At 1,500 hours utilization this represents Rs. 32.5 per flying hour, at 2000 hrs. utilization Rs. 24.5 and at 1000 hrs. utilization Rs. 49.0.

154. 'Airframe overhaul' cost per hour for Viking.—In the estimates of minimum cost of Viking operation submitted by Air-India as in the case of that Company's sub-division of actual costs for 1949 under the headings suggested

by the Committee, it was clear that a considerable sum had been included in the routine servicing charges which could more reasonably have been regarded as overhaul work. This includes a major inspection involving extensive work particularly on the wings of the aircraft, which has hitherto been required by the Director General of Civil Aviation (in accordance with the manufacturers' recommendations) at intervals of 600 flying hours, recently extended to 800 hrs. The Company's servicing costs estimate for the Viking was  $2\frac{1}{2}$  times that for the Dakota, whereas overhaul of the Viking was taken as only 25 per cent. in excess of the Dakota cost. In the case of the Committee's figures, Viking servicing costs have been taken as only 50 per cent above the Dakota expenditure and the re-allocation of charge explained above naturally results in a considerable increase in the Viking overhaul allowance. After consideration of the actual costs achieved by both the Viking operators and bearing in mind the tendency for some reduction in the inspection requirements on this aircraft, we believe that the reasonable figure to allow for all overhaul work performed throughout the year as well as the annual major overhaul would be Rs. 98,000, i.e., double the Dakota allowance. The corresponding hourly charges would, therefore, be as follows: 1000 hrs. utilization, Rs. 98.0 per hour; 1500 hrs., Rs. 65.0; 2000 hrs., Rs. 49.0.

155. 'Airframe overhaul' cost per hour for SO-95.—No experience has yet been accumulated in regard to SO-95 airframe overhaul cost, but for the first few years of operation it is bound to be relatively high, even if only for the reason that the staff will be unfamiliar with its particular characteristics and requirements in comparison with, say, the Dakota. Furthermore, the equipment and installation, control systems, etc., of the SO-95 are rather complex, and overhaul time may be rather high. In addition, the cost of replacement parts is high. For these reasons, in spite of the small size of the aircraft, we feel that the minimum allowance for annual overhaul charges should be of the order of Rs. 40,000, as compared with Rs. 49,000 for the Dakota. Costs per hour are therefore taken as Rs. 40 at 1000 hours utilization, Rs. 26.7 at 1500 hours, and Rs. 20 at 2000 hours.

156. 'Airframe overhaul' cost per hour for Skymaster.—Although local experience is again limited in the case of the Skymaster, results over a considerable period obtained in Australia show that under comparable circumstances, approximately  $2\frac{1}{2}$  times the cost appropriate to the Dakota must be allowed for the Skymaster in respect of airframe overhaul. The Committee has adopted this as the basis for its estimate, giving an annual charge of Rs. 122.500 resulting in figures of Rs. 122.5 per hour at 1000 hours utilization, Rs. 81.2 at 1500 hours and Rs. 61.2 at 2000 hours.

157. Change in the periodicity of airframe overhaul.—The Committee heard a great deal of evidence on the question of the desirability of some change in the present airworthiness requirements in this country in relation to aircraft overhaul. It was brought to our notice that in the country of origin of the D.C.3, namely, U.S.A., this aircraft, in common with all other types, is overhauled on a basis related to the number of hours flown and not to the lapse of a calendar year. We understand that the particular period approved in the case of each specific operator is arrived at by the Civil Aeronautics Administration after a full review of the experience and past results achieved by the overhaul organisation of the operator concerned and of the particular conditions under which the aircraft are used. These factors, taken in conjunction with the special characteristics of the aircraft type in question, are then made the basis for authorising the performance of a certain number of flying hours between complete overhauls, and this figure is included in the approved maintenance specifications of the operator concerned. In the case of the Douglas

D.C. 3, the periods between overhauls vary between different American operators from approximately 7000 flying hours to 10,000 hours. We are also informed that a similar system has been adopted in Australia where the present period applied in the case of Trans-Australia Airways is 7000 hours for the D.C.3 and 8000 hours for the Skymaster. We have discussed this matter with the Director General of Civil Aviation, who is fully aware of its significance from the point of view of economy in operation by reason of the fact that any extension in time between overhauls is directly reflected in a reduction in the hourly charge under this head. We understand that the D.G.C.A. is himself favourably disposed towards an alteration in the current Indian system of annual Certificate of Airworthiness overhauls and that the question of a liberalisation of the present policy is under active consideration. The Committee is able to state that the consensus of opinion expressed before it is that there would be no risk of a deterioration in the standard of safety involved in a relaxation of the present requirement to the extent of calling for an overhaul after 4000 flying hours or not more than two years from the last overhaul, whichever limit is reached earlier, and we would recommend that this basis be seriously considered by the Director General of Civil Aviation as a suitable starting point for developing a more rational system of overhaul requirements than is at present being enforced. It is clear to us that very considerable expenditure is at present being incurred by all operators on account of this requirement relative to overhaul. The incidence of this expenditure is particularly heavy on those operators who are unable to achieve high aircraft utilization and we came across many instances where full overhauls had to be carried out under the existing rules where the aircraft concerned had flown only a few hundred hours in the preceding 12 months. Although we hope to see some rationalisation of policy in this direction, we have thought it proper to give our estimates of reasonable cost on the present basis of annual overhaul and this basis has been used in assessing the foregoing figures.

158. **D.G.C.A.'s estimates of cost per hour for 'airframe overhaul'.—**Under this head, in his estimates submitted in reply to question 30, the D.G.C.A. has assumed a total average annual cost for airframe overhaul, for a mixed fleet consisting of 10 Vikings and 40 Dakotas, of Rs. 30,000 per aircraft. This appears to be considerably less than the total cost incurred at the present time for the annual complete overhaul of a Dakota alone and, having regard to the very considerably higher costs appropriate to the Viking, we are of the opinion that the figure is quite unrealistic and probably of the order of half of the actual costs, which must be expected to be incurred under the present airworthiness requirements.

159. **Engine overhaul.**—Turning now to overhaul costs for engines, propellers and power plant accessories, there is not quite the same disparity in costs shown by the various companies under this heading as is the case in regard to aircraft servicing and airframe overhaul. Where a very low figure was shown, it was found that some adjustment was required in order to make allowance for new engines brought into service during the year and consequent reduction in the number of overhauls actually performed. Even allowing for this fact, again the lowest costs were shown by operators having their engine overhauls conducted by Hindustan Aircraft Limited. Taking into account the cost of overhaul of propellers, engine driven accessories, oil coolers, etc. as well as the complete overhaul of the engine itself, we consider it necessary to allow approximately Rs. 9,700 per power plant for the total cost of having such work done at the present H.A.L. rates, including transport and other charges involved in having the work done at Bangalore. It appears that the average number of flying hours actually achieved between overhauls of Dakotas



engines at present amounts to approximately 600, as compared with the maximum period of 700 hours between overhauls permitted by the D.G.C.A. The low figure takes into account the engines which had to be removed and overhauled for various causes before expiry of the maximum permitted flight time. For the two engines in the Dakota the cost per flying hour will therefore be  $\frac{19,400}{600}$  or Rs. 32.4 per hour. This figure will not vary with aircraft utilization, but it will of course be reduced by any increase in the period between engine overhauls. As already mentioned, we have adopted the basis of H.A.L. charges in assessing this cost, as we find that the lowest costs for engine overhaul over a period of 12 months have undoubtedly been shown by those operators who had their engines overhauled at H.A.L. and not in their own workshops. There appears to be little reason why it should not be possible to bring down the cost of engine overhaul in the workshops of those operators who re-condition their own power plants to a level competitive with the H.A.L. charges.

160. **'Engine overhaul' cost per hour for Viking.**—In the case of the Bristol Hercules engines fitted to the Viking, the work is not done by H.A.L. but only in the workshops of the operators using this equipment. From the evidence before us we feel it necessary to allow at least 70 per cent. over the cost of engine overhaul for the Dakota having regard to the extra man-hours involved in the case of the Hercules and also the higher cost of spares. This results in a figure of Rs. 55 per hour, again irrespective of aircraft utilization.

161. **D. G. C. A.'s estimate of 'engine overhaul' cost per hour.**—In connection with engine overhauls as with airframe overhaul, the Director General of Civil Aviation has again assumed the same figure for both Dakota and Viking, which does not appear to be in line with facts. Furthermore, the assumed cost per engine overhaul is taken at Rs. 6200 plus an allowance of Rs. 800 for propeller and accessory overhauls, giving a total of Rs. 7,000. This is very considerably below the minimum cost yet incurred by any operator in this country for the Dakota power plant alone and, as has already been pointed, the cost of overhaul of the Viking engine is very much higher.

162. **'Engine overhaul' cost per hour for SO-95.**—The Committee discussed the cost of SO-95 power plant overhaul with the representatives of Air Services of India, and formed the opinion that it will be a very expensive proposition in relation to the size of the engine. The engines cost approximately Rs. 60,000 each, and it has cost about Rs. 23,000 per engine to have them shipped to France and back for overhaul. It must be very much more economical to set up a workshop here and perform the work locally, and this the company intends doing. Taking this into account, we have accepted the view that it may be possible to bring the cost down to the same figure as applies in the case of Dakota and have used this figure of Rs. 32.4, but would reiterate that this result has not yet been achieved and up to the present time costs have been much higher.

163. **'Engine overhaul' cost per hour for Skymaster.**—The Skymaster has four units each slightly more powerful than the type employed in the Dakota and, under normal conditions, overhauled in the same workshops, it would be reasonable to expect a total cost per hour under this head approximately  $2\frac{1}{2}$  times the figure for the two engines in the Dakota. Unfortunately, however, owing to the very limited demand, there are at present no facilities in India for overhauling the Pratt & Whitney R-2000 engine, and operators are sending them overseas, Bharat Airways to U.S.A. and Indian Overseas Airlines to Europe. This is an extremely costly process and while it continues we believe

total engine overhaul costs are unlikely to be less than double the figures which may eventually be achieved, if local overhaul facilities are set up, i.e., at present  $4\frac{1}{2}$  times the cost per hour for engine overhaul for the Dakota must be allowed for the Skymaster. The appropriate cost per hour should therefore be  $4.5 \times 32.4 = \text{Rs. } 146.0$ .

164. Administration, office rents and expenses, operations on-costs and flight training; (i.e., General Costs items (b) and (c) and Indirect Operating Costs items (a) and (b) as set out in question 6).—In endeavouring to make comparisons between the costs achieved under the separate headings grouped in this section, it was found that very different standards of interpretation as to the items which should be included in each section had been adopted by the different operating companies. It was felt, however, that all the significant costs which the Committee intended to be included under the various heads would at least appear somewhere within the four sub-groups here taken together and accordingly comparisons were made of the total sum represented by these four classifications. In this group, probably more than in any other, the level of cost is very largely a matter of company policy. An operator could probably carry on a safe and reliable service with a very low expenditure under this heading (with the possible exception of flight training) but on the other hand, if this expenditure is reduced too far, the quality of administration is likely to suffer. For example, failure to secure fully competent officers by reason of low salaries offered may adversely affect general efficiency. Similarly difficult working conditions by reason of inferior office accommodation will also affect efficiency. A reasonable compromise must therefore be reached somewhere within the range from approximately Rs. 34 per hour to almost Rs. 70 per hour shown in the group totals for existing operators. Any decision to adopt a particular figure as representing a reasonable standard must in the case of these costs be made arbitrarily and in this particular case the Committee has adopted for the Dakota a figure which represents Rs. 40.9 per hour at 1500 hours utilization, reducing it by 10 per cent to Rs. 37 at 2000 hours utilization and increasing it by 13 per cent. to Rs. 46.2 per hour at 1000 hours utilization. The figure given by the D. G. C. A. for these items in his estimate of minimum cost is quite consistent with that adopted by us, if allowance is made for the fact that he has included in this figure the costs of accounts and audit which the Committee has shown under a separate head. In the case of the Viking, flight training will be more costly, and because of the greater earning capacity of the aircraft on account of its increased seating accommodation and payload it is necessary to make some adjustment to the Dakota cost. We have adopted a figure which represents an increase of  $13\frac{1}{2}$  per cent. over the Dakota cost, giving Rs. 46.4 per hour at 1500 hours utilisation, Rs. 42.4 at 2000 hours utilization and Rs. 52.4 at 1000 hours utilization. It will be justifiable to charge the items grouped under this head for the SO-95 at a considerably lower rate than applies in the case of the Dakota both because of the much smaller amount of traffic handled per aircraft and because of the smaller crew carried. The rate adopted, after consideration of the factors involved is Rs. 30 per hour at a utilization of 1000 hours per annum, Rs. 26.1 at 1500 hours and Rs. 23.1 at 2000 hours.

In the case of the Skymaster, on the other hand, for internal operations it is considered that a rate of 20 per cent. above the Dakota figure is the lowest that may reasonably be assumed, i.e., Rs. 55.5 at 1000 hours utilization, Rs. 49.1 at 1500 hours and Rs. 44.4 at 2000 hours.

In respect of external services, on a comparatively infrequent schedule it is believed that increased crew expenses and office expenses will raise the appropriate figures to at least 50 per cent in excess of the Dakota allowance, namely Rs. 69.3 at 1000 hours utilization and Rs. 61.3 at 1500 hours.

165. **Passenger services.**—Under this heading the cost of meals and refreshments provided to passengers, cost of surface transport of passengers to and from the airport, cabin attendants' salaries and supply of various items for cabin use would appear capable of fairly detailed and accurate cost calculation. They might be expected to show fairly uniform results from operator to operator. This is certainly not the case in actual fact, as the figures range from approximately Rs. 19 to Rs. 43 per hour. The Committee feels that there is room for considerable improvement in passenger services on some Indian airlines and such improvement might assist in attracting and retaining traffic. For this reason, we do not consider it desirable to adopt the lowest actual figure for our purposes. By the same token, there is obviously no justification for going to the other extreme, which certainly appears to reflect expenditure on too lavish a scale. After examining in some detail the minimum cost estimate prepared by the D. G. C. A. on this item of expenditure, the Committee felt that it represented a reasonable basis for fixing the likely cost, and has therefore adopted his figure. It is computed for 2000 hours utilization and is equivalent to Rs. 30·6 per hour. For lower utilization, the overheads in this cost will have to be spread over a smaller number of hours and the cost per hour will rise slightly. We have assessed the approximate effect as a rise of 3 per cent. (i.e. to Rs. 31·6) at 1500 hours and of a further rise of 4 per cent. (i.e. to Rs. 32·8) at 1000 hours.

The Viking cost level will be similar except for the larger number of passengers carried (an increase in seating capacity of 28·5 per cent.), but this will increase the cost of meals and other cabin service items. An overall increase of 10 per cent. has been adopted in our estimate, giving Rs. 36·0 at 1000 hours utilization, Rs. 34·7 at 1500 hours and Rs. 33·7 at 2000 hours.

For the SO-95, the costs will be much lower on account of the fact that seating accommodation is provided only for 47·5 per cent. of the Dakota capacity, but the reduction cannot be assumed to apply fully at this percentage on account of the fixed charges included. We have assumed that the costs can be reduced to 60 per cent. of the Dakota expenditure, giving Rs. 19·7 at 1000 hours utilization, Rs. 19·0 at 1500 hours and Rs. 18·4 at 2000 hours.

Since the Skymaster in domestic operation would carry considerably more than double the number of passengers as compared with the Dakota, it would be necessary to allow a much higher cost on this account, and also in view of the fact that a second cabin attendant would be carried. The figure is likely to be at least 75 per cent. greater than the Dakota allowance, viz., Rs. 57·5 at 1000 hours utilization, Rs. 55·3 at 1500 hours and Rs. 53·5 at 2000 hours. On external routes, the number of passengers carried will be much less, but this influence will be partially out-weighed by the generally higher costs of supplies, etc. On balance, a figure 50 per cent. in excess of the Dakota allowance has been adopted i.e. Rs. 49·2 at 1000 hours utilization and Rs. 47·3 at 1500 hours.

166. **Traffic, sales and agencies.**—"Traffic, sales and agencies" expenditure as calculated by the D. G. C. A. appeared to the Committee to be a sound appraisal of the minimum reasonable cost. His resulting estimate of Rs. 36·8 at 2000 hours utilization is about half the actual costs shown by two of the operators in 1949 and well below most of the remainder, but it has been slightly bettered by the operators at the lower end of the cost scale. It is believed that considerable room for improvement in cost levels in this field does exist in some quarters and we do not feel justified in adopting any higher figure than that mentioned. We have assessed the effect of lower utilization as introducing a probable increase of 8 per cent. at 1500 hours (i.e. Rs. 39·8) and a further 13 per cent at 1000 hours (i.e. Rs. 44·8).

The Viking's increased passenger complement of 28.5 per cent in our opinion will involve at least a 5 per cent. increase in the costs incurred under this heading, giving results, of Rs. 38.6 for 2000 hours utilization, Rs. 41.8 for 1500 hours and Rs. 47.0 for 1000 hours.

In the case of the SO-95, the booking office work will be greatly reduced, as will commission on tickets sold through agencies, and we have considered a 25 per cent. reduction below the DC3 costs capable of achievement. The resulting figures are therefore Rs. 27.6 at 1000 hours utilization, Rs. 29.8 at 1500 hours and Rs. 33.6 at 2000 hours.

The Skymaster with its greatly increased passenger capacity for domestic operation appears in our opinion to require a cost allocation for this purpose 50 per cent greater than the Dakota, giving Rs. 67.2 at 1000 hours, Rs. 59.6 at 1500, and Rs. 55.1 at 2000 hours utilization. On external routes, although the number of passengers carried may not be large, it will be necessary to maintain adequate establishments in the way of booking office and traffic handling facilities. We feel that costs at the likely route frequencies which are expected to obtain for the next few years are not likely to be less than double the figure assumed for the domestic services, viz., Rs. 134.4 at 1000 hours and Rs. 119.2 at 1500 hours.

**167. Publicity and Advertising.**—The D. G. C. A. has suggested for the Dakota an allowance equivalent to Rs. 6.4 per hour, which is in general agreement with our belief that expenditure on a level representing approximately 1 per cent. of revenue is fully justified in conducting a well planned publicity campaign in order to build up traffic to its maximum potential. This figure will remain constant for varying utilization. Of all the operators in 1949, the one showing the lowest costs in practically all other items showed expenditure on publicity and advertising which came nearest to our figure. The Committee feels that some increased amounts used on this item in the right manner would be of real benefit to the Industry. For the Viking, the increased revenue potential justifies the assumption of a somewhat higher figure and in consequence Rs. 7.0 has been taken in this case. On the other hand, the SO-95 will not support more than 60 per cent. of the Dakota figure, i.e., Rs. 3.8, while the Skymaster should readily allow double the Dakota amount, giving a figure of Rs. 12.8 per hour.

**168. Medical and Welfare.**—Expenditure is shown under this head by most of the operators but generally far below what is felt to be the necessary level. Although the D. G. C. A. does not appear to have made any specific allowance for this item in his minimum cost estimate, the Committee considered it desirable to adopt a reasonably high figure in line with the actual maximum expended by one operator, and agreed on Rs. 4.0 per hour at both 1000 and 1500 hours utilization, dropping to Rs. 3.0 at 2000 hours. The same figure has been taken for Viking costs. For the SO-95, the smaller number of staff involved will justify some slight reduction. For simplicity Rs. 2 has been allowed for all utilization. The greater establishment of personnel involved in Skymaster operations requires a higher figure to be allowed in this case and Rs. 5 has been taken as an approximation for all utilization factors.

**169. Accounts and Audit.**—The actual Dakota cost figures presented by the various operators for this item showed extreme variation, from approximately Rs. 3.5 per hour to about Rs. 27. We are satisfied that in some instances the costing and accounts organization of certain airlines will need considerable strengthening in order to achieve the detailed knowledge of expenditure distribution so necessary as the first step in obtaining a firm control

of costs. On the other hand, several of the operators appear to have accumulated appreciable surplus staff in this department, accounting for very high cost in regard to this item. After careful study of the situation and taking into account the experience of foreign operators, we have decided that Rs. 13·0 per hour represents a reasonable allowance for accounts and audit costs, at 2000 hours utilization of the Dakota. Although largely related to the volume of traffic and hence tending to remain at a steady rate per hour for varying utilizations, nevertheless the influence of the fixed charges will cause some increase as utilization drops. We have adopted a 7 per cent. rise for 1500 hours and a further 10 per cent. rise for 1000 hours, giving Rs. 13·9 and Rs. 15·2 respectively. For the Viking, the corresponding figures are assumed to be 18·5 % above the Dakota costs, i.e. Rs. 15·4 for 2000 hours, Rs. 16·5 for 1500 and Rs. 18·0 for 1000 hours utilization. The SO-95 has been allotted 60 per cent. of the Dakota costs under this head, viz., Rs. 9·1 for 1000, Rs. 8·3 for 1500 and Rs. 7·8 for 2000 hours utilization. In the case of the Skymaster, a 5 per cent. increase is regarded as the minimum acceptable and this gives Rs. 22·8 for 1000, Rs. 20·8 for 1500 and Rs. 19·5 for 2000 hours utilization.

170. **Miscellaneous.**—Finally, a small amount for items not included elsewhere is felt to be necessary and this has been set arbitrarily at Rs. 5 per hour in the case of the Dakota, Rs. 5 for the Viking, Rs. 3 for the SO-95, and Rs. 5 for the Skymaster.

171. **Total Cost.**—The costs determined under each of the headings examined have been collected together and set out in the three tables Nos. 16, 17 and 18 for values of aircraft utilization of 1000 hours, 1500 hours, and 2000 hours, giving the total operating cost per hour for each of the four aircraft types considered.

✓ *Estimate of reassemblable costs in Rupees per hour  
Aircraft utilization 1,000 hours per year.*

Item.	Dakota	Viking	SO-95	Skymaster	
				Internal	External
(i) and (ii) D precision Air- frame and power plants.	40.0	98.6	101.0	153.3	153.3
(iii) Aircraft insurance . . .	11.2	56.9	47.0	68.0	68.0
(iv) Aircraft housing fees . . .	6.4	9.6	4.0	16.0	16.0
Fixed direct operating costs sub-total.	57.6	165.1	152.0	237.3	237.3
(v) Fuel and oil . . .	211.3	269.1	89.5	483.0	319.0
(vi) Flight crew salaries . . .	42.9	42.9	31.6	72.6	86.0
(vii) Aircraft servicing . . .	59.5	90.0	55.0	178.5	178.5
(viii) (a) Airframe overhaul . . .	49.0	98.0	40.0	122.5	122.5
(b) Engine overhaul . . .	32.4	55.0	32.4	146.0	146.0
(c) Landing fees . . .	14.0	13.8	7.1	42.9	30.0
Variable direct operating costs sub-total.	403.1	558.8	255.6	1045.5	882.0
(i) Operations on-costs, train- ing, administrative, office rent and expense.	46.2	52.4	30.0	55.5	69.3
(ii) Passenger services . . .	32.8	35.0	19.7	67.5	49.2
(iii) Traffic, sales and agency . . .	44.8	47.0	27.6	67.2	131.4

(f) Interest on working capital	3.0	4.0	4.0	4.0	4.5	4.6
(ii) Publicity and advertising	6.4	7.0	3.8	3.8	12.8	12.8
(iii) Medical and welfare	4.0	4.0	2.0	2.0	5.0	5.0
(vi) Accounts and Audit	15.2	18.0	9.1	9.1	22.8	22.8
(v) Miscellaneous	5.0	5.0	3.0	3.0	5.0	5.0
Indirect and General sub-total	157.4	173.4	99.2	99.2	230.3	303.0
<b>GRAND TOTAL</b>	<b>324.1</b>	<b>397.3</b>	<b>506.8</b>	<b>1513.1</b>	<b>1422.3</b>	

[TABLE No. 16]

*Estimate of reasonable costs in rupees per hour  
Aircraft utilisation 1,500 hours per year.*

Item.	Dakota	Viking	SO-96	Skymaster	
				Internal	External
(i) & (ii) Depreciation Airframe & power plants..	26.7	65.8	67.4	102.2	102.2
(iii) Aircraft insurance . . . . .	7.4	37.8	31.3	45.3	45.3
(iv) Aircraft housing fees . . . . .	4.3	6.4	2.6	10.7	10.7
Fixed direct operating costs sub-total.	38.4	110.0	101.3	158.2	158.2
(i) Fuel and oil . . . . .	211.3	259.1	89.5	483.0	319.0
(ii) Crew Salaries . . . . .	42.9	42.9	31.6	72.6	86.0
(iii) Aircraft servicing . . . . .	55.5	84.0	51.3	166.2	166.2
(iv) (a) Airframe Overhaul . . . . .	32.5	65.0	26.7	81.2	81.2
(b) Engine overhaul . . . . .	32.4	55.0	32.4	146.0	146.0
(v) Landing fees . . . . .	14.0	13.8	7.1	42.9	30.0
Variable direct operating costs sub-total.	388.6	519.8	238.6	991.9	826.4
(i) Operations on—costs, training, administration, office rent and expenses.	40.9	46.4	26.1	49.1	61.3
(ii) Passenger services . . . . .	31.6	34.7	19.0	55.3	47.3
(iii) Traffic, sales and agencies . . . . .	39.8	41.8	29.8	59.6	119.2
(i) Interest on working capital . . . . .	3.0	4.0	4.0	4.5	4.5



Estimate of reasonable costs in rupees per hour  
Aircraft utilization 1,500 hours per year.---(contd.)

Item	Dakota.	Viking.	SO-95	Skymaster	
				Internal	External
(ii) Publicity and advertising . . .	6.4	7.0	3.8	12.8	12.8
(iii) Medical and welfare . . .	4.0	4.0	2.0	5.0	5.0
(iv) Accounts and audit . . .	13.9	16.5	8.3	20.8	20.8
(v) Miscellaneous . . .	5.0	5.0	3.0	5.0	5.0
Indirect and General sub-total . . .	144.6	159.4	96.0	212.1	276.9
GRAND TOTAL . . .	571.6	789.2	435.9	1362.2	1262.5

[TABLE No. 17]

*Estimate of reasonable costs in rupees per hour  
Aircraft utilization 2,000 hours per year*

Item	Dakota	Viking	SO-95	Skymaster (Internal)
(i) & (ii) Depreciation Airframe & power plants . . . . .	20.0	49.3	50.5	76.7
(iii) Aircraft insurance . . . . .	5.6	28.4	23.5	34.0
(iv) Aircraft housing fees . . . . .	3.2	4.8	2.0	8.0
Fixed direct operating costs sub-total . . . . .	<u>28.8</u>	<u>82.5</u>	<u>76.0</u>	<u>118.7</u>
(v) Fuel and oil . . . . .	211.3	259.1	89.5	483.0
(vi) Flight crew salaries . . . . .	42.9	42.9	31.6	72.6
(vii) Aircraft servicing . . . . .	52.8	80.0	48.8	168.2
(viii) (a) Airframe overhaul . . . . .	24.5	49.0	20.0	61.2
(b) Engine overhaul . . . . .	32.4	55.0	32.4	146.0
(ix) Landing fees . . . . .	14.0	13.8	7.1	42.9
Variable direct operating costs sub-total . . . . .	<u>377.9</u>	<u>499.8</u>	<u>229.4</u>	<u>963.9</u>
(i) Operations on—costs, training, administration, office rent & expenses. . . . .	37.0	42.4	23.1	44.4
(ii) Passenger services . . . . .	30.6	33.7	18.4	53.5
(iii) Traffic, sales and agencies. . . . .	36.8	38.6	33.6	55.1
(iv) Interest on working capital. . . . .	3.0	4.0	4.0	4.5
(v) Publicity and advertising . . . . .	6.4	7.0	3.8	12.8
(vi) Medical and welfare . . . . .	3.0	3.0	2.0	5.0

*Estimate of reasonable costs in rupees per hour  
Aircraft utilization 2,000 hours per year—(contd.)*

Item	Dakota	Viking	SO-95	Skymaster (Internal)
(iv) Accounts and Audit . . . . .	13.0	15.4	7.8	19.5
(v) Miscellaneous items . . . . .	5.0	5.0	3.0	5.0
In Direct and General sub-total . . . . .	<u>134.8</u>	<u>149.1</u>	<u>95.7</u>	<u>199.8</u>
GRAND TOTAL . . . . .	541.5	731.4	401.1	1282.4

[TABLE No. 18]

It will be seen from the tables that the total reasonable costs of operation for the Dakota, the Viking, the SO-95 and the Skymaster at different utilizations are—

	Utilization of 1000 hrs. Rs. per hour	Utilization of 1500 hrs. Rs. per hour	Utilization of 2000 hrs. Rs. per hour
Dakota . . . . .	624.1	571.6	541.5
Viking . . . . .	897.3	789.2	731.4
O-95 . . . . .	506.8	435.9	401.1
Skymaster :			
Internal . . . . .	1513.1	1362.2	1282.4
External . . . . .	1422.3	1262.5	.....

[TABLE No. 19]

172. **Estimates of costs submitted by D.G.C.A.**—The estimate submitted by the Director General of Civil Aviation in reply to question 30 was based on a utilization of 2000 hours. The figures given by him as the reasonable minimum costs per mile for the present group of operators correspond to Rs. 452.5 per hour for the Dakota and Rs. 623.5 for the Viking, which are 16.4 per cent. and 14.9 per cent. respectively below the figures which the Committee feels should be regarded as the reasonable minimum. The Director General of Civil Aviation also gives figures for the costs which he considers would be attainable in the event of nationalisation of all air transport services under his unified control, namely Rs. 374.3 for the Dakota and Rs. 514.5 for the Viking, which are 30.9 per cent. and 29.7 per cent. respectively below our figures. We are constrained to say that we feel both these sets of figures to be quite unrealistic, for reasons many of which have been explained earlier in this Chapter. The D.G.C.A. also furnished for comparison with his reply to Question 30 cost figures based on results obtained by Braniff Airlines in U.S.A. in 1948. He claimed that this comparison confirmed his direct calculation to a very high degree of accuracy. The Committee, however, is of the opinion that the very wide divergence of cost levels, productivity of labour, availability of spares, and general operating conditions which exists between U.S.A. and India makes it practically impossible to develop a sufficiently complete and realistic set of correctives for adjusting the American figures to Indian conditions and finds it difficult to accept that the results claimed by the D.G.C.A. have any real significance in relation to actual operating costs in India.

173. **Standard Cost Charts—Cost per hour.**—From the figures now determined as reasonable costs together with calculations on the same basis for utilisation of 500 hours and 2500 hours, curves have been drawn plotting cost per hour against aircraft utilization (*vide* Appendix XV). From the curves shown on Charts Nos. 1A, 1B, 1C and 1D, it will be easy to determine the appropriate cost per hour for any utilization which may actually be achieved or may be anticipated by an operator for a period under review. It has been thought desirable to plot in each case two curves for each type of aircraft; the upper curve gives the overall operating cost per hour, representing a figure at which we consider it should be possible to operate an airline on a regular

continuing basis under the conditions at present obtaining in India; and the lower curve gives the variable direct operating costs only. It will enable one to determine the minimum "out of pocket" expenditure incurred for each additional hour of flying without the corresponding adjustments to administration and other establishments and items of expenditure which would be involved if the increased level of flying were to be maintained for an extended period.

**174. Cost per mile.**—The cost of operation per hour can readily be converted to cost per mile by dividing it by the average block speed appropriate to the length of flight stage concerned. This has been done by combining the results shown on charts Nos. 1A, 1B, 1C and 1D with those of chart No. 3, and the resultant costs per mile are plotted against stage length on charts Nos. 4A, 4B, 4C and 4D(i) and 4D(ii) where curves are drawn for several different rates of aircraft utilization, so that appropriate figures for any particular utilization can easily be determined by interpolation between the curves at the appropriate stage distance.

**175. Cost per ton-mile.**—We have pointed out earlier in this Chapter that the cost which is of ultimate significance is the cost per ton-mile of transportation. Having determined already the cost per mile for varying stage lengths and also typical values of payload for a similar range of stage lengths, it is a simple matter again to divide one set of results by the other, giving cost per ton-mile and this has been done in the final set of charts Nos. 6A(i), 6A(ii), 6B, 6C, 6D(i), 6D(ii), 6D(iii) and 6D(iv). The important fact to be borne in mind when examining these charts is that they represent the minimum cost per ton-mile which could be attained only if the maximum permissible payload (i.e. 100 per cent. load factor) were reached on each flight. This is, of course, not possible in practice. Minimum practical cost level for any given values of the three variables, viz., stage length, aircraft utilization and average payload factor, for a particular route can be obtained for any of the four types of aircraft concerned by merely reading off the cost per ton-mile at 100 per cent. load factor from the appropriate chart for the desired stage length and utilization, and dividing the result by the load factor percentage; for example, this has the effect of doubling the cost per ton-mile if the load factor is 50 per cent. and multiplying it by 1.539 (100/65) if the load factor is 65 per cent.; and so on.

**176. Significance of Results.**—We have now presented a set of cost charts (Appendix XV) which we recommend should be regarded as the standard by which operating expense results may be estimated and compared in the ensuing period. All these costs curves will be found easy to adjust, if necessary, for changes of significant degree occurring in basic factors, such as the cost of fuel, a major change in crew salaries, an alteration in the permissible hours between engine overhauls, or a change from the present calendar time limit to a more liberal basis of hours flown in respect of airframe overhaul. We suggest, however, that unless and until such changes assume a sufficient magnitude, say, such as would change the overall total by 2½ per cent., minor adjustments of the standard cost totals should not be contemplated, as the degree of accuracy attainable (particularly in forecasting the achievable level of efficiency in management) is necessarily not precise and small alterations for slight changes in conditions would, therefore, not be warranted. Furthermore, it is felt desirable that the Industry should have a fixed target of expenditure at which to aim and that such target having once been determined, as has been done by this Committee, it should, as far as possible remain stable for a period long enough to provide a reasonable opportunity of measuring the ability of various sections of the Industry to achieve working results within the set limit.

**177. Cost levels attained by the companies as compared to our standard costs.**—Even after setting depreciation rates at the level adopted by the Committee and taking into account the equipment utilization actually achieved, Air-India in the year 1949 showed costs 24.5 per cent. above the standard arrived at in this Chapter. Similarly, in the case of Dakota operations, Indian National Airways showed total operating costs 16 per cent. above the set standard, with Air Services of India, Indian Overseas Air lines, Kalinga Airlines and Deccan Airways exceeding the figure by smaller percentages. Himalayan Aviation, Airways (India) and Bharat Airways showed cost figures which were slightly lower than the figures we have adopted, but in such cases, for reasons mentioned in the earlier part of this Report, we do not feel that the actual costs for the year under review were truly representative of a normal operating period, and we feel that these companies will be doing very well if they can maintain in the current period a level of cost no greater than the assumed standard.

**178. Our standard costs figures make no allowance for profit.**—We are fully conscious of the difficult task involved for most operators in bringing their expenditure down to this standard level, but we have done our best to make the results realistic and representative of what we believe attainable in practice through the exercise of firm control by management and the encouragement of "cost-consciousness" at all levels of staff. Unless the Industry as a whole does improve its situation to something very close to the standards here developed, we can see very little prospect of its achieving a healthy stability, as we have serious doubts of the ability of the traffic on which it depends to bear the rates of tariff which would be necessary in order approximately to meet cost at their present average level. If, on the other hand, the operators are successful in reducing their costs to the standard level, the results are not entirely out of line with the present standard fares excluding those charged on the night mail services. In making use of the standard cost figures it should be borne in mind that they contain no allowance for profit; in other words, if passenger fares, freight rates and mail rates were worked out so as to produce, at the assumed load factor, an income per mile equal to the cost arrived at from the charts, then the operator should be expected just to "break even" on his overall results. The costs given as rupees per ton-mile can, of course, be converted to equivalent rates of annas per passenger-mile, on the usual assumption that a passenger and his 44 lbs. free baggage total 200 lbs merely by multiplying by 1.428. Here again, however, it must be recognised that the average level of revenue is normally somewhat below that corresponding to the passenger rate. This is due largely to the fact that the freight rate per ton-mile in practice is always appreciably lower than the passenger rate and the passenger revenue itself is depressed to a slight extent by the carriage of children as concession fare passengers. These influences are seldom out-weighed by the allowance of a higher rate per ton-mile for mail because of the relatively small proportion of total traffic usually represented by mail.

**179. Typical results.**—Table No. 20 sets out typical results drawn from the charts, relating to the types of aircraft now in service on the internal routes when operated on typical stage lengths. For comparative purposes, a uniform load factor of 65 per cent. has been assumed, for it is believed that this represents the maximum continuing overall load factor likely to be achieved. We are led to this conclusion both from the consideration of results in other countries and from observation of the trend of the load factor curve for Indian operations. The reason for this appears to be that if load factors of, say, 75 per cent. or higher are consistently maintained, it is a clear indication that a proportion of the flights are actually departing completely full, and that, in all probability, traffic

TYPICAL RESULTS FROM CHARTS IN APPENDIX XV  
 Standard costs for types now in service on Internal Services

Type	Typical Stage	Block time of journey	Pay-load	1500 hours Utilisation		2000 hours Utilisation	
				Cost per ton-mile at 65% load factor	Equivalent cost per pass. mile at 65% load factor	Cost per ton-mile at 65% load factor	Equivalent cost per pass. mile at 65% load factor
Dakota 21 seater . . . . .	300 miles	1 hr. 59 min.	5450 lbs. = 2.43 tons.	Rs. 2.6-0 = As. 38-0	As. 3.39	Rs. 2.4-0 = As. 36-0	As. 3.22
Dakota Freighter . . . . .	300 miles.	1 hr. 59 min.	7650 lbs. = 3.37 tons.	Rs. 1.11-8 = As. 27-7	Freight only.	Rs. 1.5-2 = As. 21-2	Freight only.
Viking 27 Seater . . . . .	600 miles.	3 hr. 19 min.	6240 lbs. = 2.78 tons.	Rs. 2.7-1 = As. 39-1	As. 3.50	Rs. 2.4-0 = As. 36-0	As. 3.22
SO-95 10 Seater . . . . .	300 miles.	1 hr. 37 min.	2060 lbs. = 0.92 tons.	Rs. 3.12-11 = As. 60-9	As. 5.43	Rs. 3.7-7 = As. 55-6	As. 4.96

[TABLE No. 20]

is being turned away on those occasions to the railways or other alternative transport. When this stage of affairs is reached, as is already the case on several routes, the only way in which additional traffic can be catered for is by providing additional frequencies of schedules. Operation of an additional frequency naturally lowers the average load factor, at least temporarily, well below 65 per cent., although if the operator's judgment is proved correct it will gradually build up again to a remunerative level. It is only by the addition of frequencies that the desired and expected growth of air transport can be achieved, and we feel that it would therefore, be unrealistic to consider cost results and corresponding overall tariff levels on the assumption of an average load factor appreciably higher than 65 per cent. although in the case of particular routes where a high load factor has been achieved and maintained the assumption of a load factor higher than 65 per cent. would not be unjustified.

**180. Operating costs of Dakota and Viking when operated at their optimum stage lengths.**—It will be observed that, when employed on stage distances typical of their actual application, the Dakota and the Viking show very similar equivalent costs per seat mile, ranging between approximately annas  $3\frac{1}{2}$  and  $3\frac{3}{4}$  depending on utilization. Of course, if either aircraft is used on a stage length appreciably beyond the optimum range for the type, the drop in payload raises the specific cost to a marked degree. For instance, the Viking, operating Bombay—Calcutta non-stop, 1036 miles, at 65 per cent. load factor, shows an equivalent cost per seat-mile of 4.5 annas. Similarly the Dakota, operating Bombay—Madras non-stop, 641 miles shows at, 65 per cent. load factor, an equivalent cost per seat mile of 3.96 annas. Even at its optimum stage distance, however, the SO-95 shows a cost level per seat-mile of annas 5 to  $5\frac{1}{4}$ , i.e., more than 50 per cent. in excess of the other two types. This illustrates the extreme difficulty of obtaining profitable operation with a small type of aircraft at least within the existing low rate structure. We would reiterate that in all cases the figures mentioned illustrate cost per seat-mile and that because, as already pointed out, average revenue per ton-mile is usually below the equivalent passenger fare and also in order to allow a reasonable margin of profit the passenger fare levels should actually be fixed somewhat higher than what these figures indicate.

**181. Future prospects.**—In an attempt to forecast whether or not it is reasonable to expect that the introduction of more efficient types of modern aircraft may make possible a significant reduction in the economic level of fares, our Technical Adviser has used the best available information in respect of three types of aircraft whose application has been suggested on Indian routes and has compared the resulting costs with those obtainable with a type already owned by two Indian operators but not used on internal services, viz., Douglas DC4 Skymaster. The types of aircraft considered are the Bristol New Type 170 fitted with 2 Bristol Hercules engines, the Airspeed Ambassador fitted with 2 Bristol Centaurus 661 engines, and the SAAB Scandia fitted with 2 Pratt and Whitney R-2180 engines.

The Bristol New Type 170 is a development of the original Bristol Freighter and is already in fairly extensive service, although chiefly as a freighter only. However, strong claims have been made on its behalf by the local representatives of the Bristol Company, Messrs. Greaves Cotton Limited (who submitted replies to our Questionnaire and gave oral evidence before the Committee), that the use of this aircraft would make possible a very significant reduction in passenger fares, although no claims are made for a particularly high degree of comfort or speed.



The Airspeed Ambassador is to only developed British type of high-powered twin-engined high-capacity aircraft, corresponding to the American Convair-Liner CV240, which has proved so successful in U.S.A. and Australia, or the Martin Model 404 of very similar design now going into production for American operators. The Ambassador is a thoroughly modern piston engine transport of high-wing, nose-wheel lay out, pressurized, equipped with 47 passenger seats, and capable of quite high performance. It has been ordered in considerable numbers by British European Airways Corporation and delivery of the first production model to that Corporation is scheduled for January 1951. Regular passenger services are expected to commence in July 1951. An estimate of the costs appropriate to the Convair-Liner or the Martin 404 has not been made, as they would be very similar to the figures determined for the Ambassador. It is assumed that scarcity of Dollar funds would preclude the serious consideration of American aircraft types at least for some time to come.

The SAAB Scandia is a Swedish type using American power plants, propellers and instruments, developed specifically as a replacement for the Dakota. It again is a thoroughly modern design, of nosewheel layout, and is fitted with either 30 or 38 seats. The 38 seats version appears to be quite comfortable and in view of the present emphasis on low costs in this country, the 38 seats version has been used in this study. The Scandia has been purchased by A. B. Aero-Transport, Sweden, and by Aerovias do Brazil, and deliveries are now taking place.

The only other types which are known to be under development at present which hold any promise of being economically competitive as a Dakota or Viking replacement are either of two relatively smaller British types, the Handley Page-Miles "Marathon" and the De Havilland "Heron", both fitted with four Gipsy Queen engines of comparatively low power or the more elaborate 40 seat Vickers Viscount, which is fitted with four Rolls Royce Dart propeller-turbines. Delivery of the latter type is not expected until late 1953, although the developmental prototype has been flying for about two years. Sufficient details are not available to permit of an accurate cost analysis of the light types mentioned, which are 14 to 18 seat capacity, but it is not anticipated that they will show costs per seat-mile lower than those of the Dakota. On the other hand, when operated under favourable conditions, the Vickers Viscount and possibly certain straight-jet types of aircraft, such as the Avro Jetliner built in Canada, may show results superior to the Dakota, but the conditions in India do not appear to be at all conducive to optimum economy with gas turbine aircraft. These aircraft, particularly the pure jet type, and to a lesser degree the propeller turbine types also, use a far greater quantity of fuel than do piston engined aircraft of the same general capacity. Their protagonists claim that this extra expense will be offset, firstly by the benefits of their greater speed which will enable considerably more miles to be flown per day with each aircraft and secondly by reason of the reduction in man-hours required for servicing and overhaul, because of the extreme simplicity of the power plants as compared with piston engines. In this country, where fuel, as we have seen, is extremely costly (even kerosene being likely to follow the pattern of petrol in this regard) and labour is relatively less expensive and where the volume of traffic does not appear likely to be enough to permit of greatly increased frequency of schedules, the conditions cannot be said to favour the introduction of the gas turbine and no attempt has therefore been made to estimate the economics of such types under Indian conditions.

ESTIMATED REASONABLE COSTS.  
Potential Replacement Types on Internal Services.

Type	Typical stage	Assumed block speed m.p.h.	Block Time of journey	Pay-load	1500 Hrs. Utilisation		2000 Hrs. Utilisation.	
					Cost per ton-mile at 65% load factor	Equivalent cost per mile at 65% load factor	Cost per ton-mile at 65% load factor	Equivalent cost per mile at 65% load factor.
Douglas D.C.-4 Skymaster.	600 miles.	187.5	3 h. 12 min.	9,400 lbs. = 4.20 tons.	Rs. 2-10-10 =As. 42.8	As. 3.82	Rs. 2-8-2 =As. 40.2	As. 3.59
50 Seater.	600 miles.	187.5	3h.12 min.	12,230 lbs. = 5.46 tons.	Rs. 2-1-1 =As. 33.1	As. 2.96	Rs. 1-15-0 =As. 31.0	As. 2.77
61 Seater.	600 miles.	187.5	3h. 12 min.	14,080 lbs. = 6.29 tons	Rs. 1-12-7 =As. 28.6	As. 2.56	Rs. 1-11-0 =As. 27.0	As. 2.41
61 Seater.	300 miles.	173.0	1h. 43 min.	14,080 lbs. = 6.29 tons.	Rs. 1-14-10 =As. 30.66	As. 2.74	Rs. 1-12-11 =As.28.9	As. 2.68
New Bristol	300 miles.	151.0	1h. 59 min.	8,350, lbs. = 3.73 tons.	Rs. 2-5-8 =As. 37.17	As. 3.37	Not computed.	
Air speed Ambassador.	600 miles.	231.0	2h. 36 min.	9,930 lbs. = 4.44 tons.	Rs. 2-2-12 =As. 34.75	As. 3.11	Rs. 1-15-6 =As. 31.55	As. 2.70
S.A.A.B. Scandia	300 miles.	183.5	1h. 38 min.	7,246 lbs. = 3.686 tons.	Rs. 2-7-7 =As. 36.6	As. 3.87	Rs. 2-0-10 =As. 32.80	As. 2.93
38 Seater	600 miles.	165.5	3h. 04 min.	7,220 lbs. = 3.226 tons.	Rs. 2-7-2 =As. 29.2	As. 3.50	Rs. 2-3-2 =As. 35.15	As. 3.14

182. **Estimated capital costs of the three new types of aircraft.**—Table No. 21 sets out the estimated operating costs per hour for the Bristol New Type 170, the Ambassador and the SAAB Scandia, using assumptions consistent with those employed in the case of the 4 aircraft already examined. Capital costs assumed are as follows:—

*Bristol New Type 170*

	Rs.
Purchase price £58,000 Sterling or . . . . .	7,73,000
Cost of one power plant . . . . .	70,000
Value of airframe spares at 10% airframe cost . . . . .	63,300
Total capital value . . . . .	9,06,300

*Airspeed Ambassador :*

Purchase price £175,000 Sterling or . . . . .	2,40,000
Cost of one power plant . . . . .	2,13,000
10% Airframe spares . . . . .	1,91,400
Total capital value . . . . .	27,44,400

*SAAB Scandia :*

Purchase price £1,25,000 sterling (of which approximately 40% would be payable in hard currency) . . . . .	16,65,000
Cost of one power plant . . . . .	1,25,000
10% air frame spares . . . . .	1,41,500
	Rs. 19,31,500

[TABLE No. 22]

In each case, depreciation to zero value over a life of eight years has been assumed.

183. **Payload of Bristol New Type 170.**—The maximum permissible take-off weight for the Bristol New Type 170 has been taken as 40,000 lbs., although there is some doubt as to whether the aircraft at this weight fully meets desirable emergency performance standards for passenger-carrying aircraft in the event of engine failure during take-off. If any reduction in operating weight were found to be necessary, it would, of course, reduce the pay-load here assumed. Its basic operating weight has been taken from the figures submitted by Messrs. Greaves Cotton with the addition of one further cabin attendant, since it is felt that two would be necessary to look after 38 passengers. The resulting figure is 29,100 lbs., leaving 10,900 lbs. available for fuel and pay-load. Fuel consumption has been taken as 100 gallons per hour in accordance with information supplied by Messrs. Greaves Cotton and speed as identical with that of the Dakota. This assumption is, if anything, slightly favourable to the Bristol. A range-pay-load curve calculated from

these figures in the manner described earlier in this Chapter gives a weight limited pay-load of 8550 lbs. at 200 miles range dropping to 6880 lbs. at 700 miles. Owing to its large fuselage and hence large space available for stowage of cargo, volumetric capacity will not be a governing factor with this aircraft.

**184. Pay load of Ambassador.**—The Ambassador's gross weight for take-off has been assumed as 52,000 lbs. and basic operating weight from best available information is 37,250 lbs. leaving 14,750 lbs. available for fuel and pay-load. Fuel consumption has been taken as 164 gallons per hour and block speed has been computed from test data which is believed to be accurate. The range-pay-load curve calculated on the standard basis adopted earlier in this Chapter gives a weight pay-load figure of 11,800 lbs. at 200 miles range, dropping to 8,050 lbs. at 1,000 miles. In this case, however, the volumetric capacity will be the limiting factor below 300 miles range and is calculated as follows:—

47 passengers	...	7,342 lbs.
47 sets of free baggage at 44 lbs. each.	...	2,068 lbs.
		corresponding to 147.8 c.ft.

The total usable cargo space is 342.5 c. ft., leaving approximately 195 c. ft. available for freight and mail, which at 10 lbs. c. ft. represents 1,950 lbs. This gives a total volumetric capacity pay-load of 11,360 lbs.

**185. Pay load of Scandia.**—The take-off weight of the latest version of the SAAB Scandia is 34,850 lbs. and the basic operating weight is estimated to be 24,600 lbs., leaving 10,250 lbs. available for fuel and pay-load. Block speed has again been computed from test results and the fuel consumption is expected to be approximately the same as for the Viking, viz., 94 gallons per hour. The range pay-load curve shows a weight pay-load of 8,910 lbs. at 100 miles stage distance, reducing to 6,180 lbs. at 900 miles range. Volumetric capacity of the 38 seater version will not be a limiting factor, since it gives almost 9,000 lbs. of capacity, there being approximately 148 c.ft. for freight and mail, after accommodating the baggage of 38 passengers.

**186. Costs of operation of the 3 new types and comparison with those of Dakota and Viking.**—Table No. 21 sets out typical results obtained on the basis of these assumptions in comparison with the potentialities of the Sky-master in each of the 3 versions discussed previously, viz., the 38 seater as at present used by Bharat Airways, secondly a typical normal airline 50 seat interior, and thirdly a suggested coach-class interior seating 61. Examining the results in equivalent cost per passenger-mile at 65 per cent. load factor and comparing them with the corresponding figures obtained for the Dakota and Viking, it will be seen that the Bristol New Type 170 shows a result almost identical with that for the Dakota. On a 600 mile stage, the Ambassador at 1500 hours utilisation shows a result 11 per cent. better than the Viking on the same stage and at 2000 hours utilisation for each aircraft, this advantage is increased to 16 per cent. in favour of the Ambassador. At 300 miles, the Scandia at 1500 hours utilisation is about 3½ per cent. more economical than the Dakota on an equivalent distance, and at 2000 hours utilisation in each case this improvement rises to 9 per cent. in favour of the Scandia. These results show that in spite of their high purchase price, more modern aircraft of efficient design could probably be operated with an economy competitive with that of the Dakota and the Viking, the chief obstacle to their adoption being the heavy capital outlay involved. It is equally clear, however, that the cost of operation of such types is very sensitive to the degree of utilisation achieved

and that, unless high utilisation could be obtained, their operation would be uneconomical. The problem then becomes one of deciding whether the traffic potential in India is such that a high degree of utilisation with a high capacity aircraft can actually be achieved, without having to operate unremuneratively low load factors. It is evident that no substantial improvement in cost per seat mile is likely to be achieved, even with the most modern equipment, except by the achievement of really high rates of utilisation and it is under such conditions that modern aircraft types, such as the Convair, have proved their superiority in the United States and in Australia. We understand that T. A. A. is consistently achieving a utilisation of 3,000 hours per year with its Convair aircraft and that the economic results are very considerably superior to those obtained by the same Company with its D.C. 3 equipment.

197. **Costs of operation of 61-seat Skymaster.**—It will be observed from Table No. 21 that none of the new type aircraft examined show costs as low as the 50 seater or 61 seater Skymaster. In the case of the 61 seater at 2000 hours utilisation, equivalent cost per seat mile is 25 per cent. below that of the Viking, viz., 2.41 annas per mile (without allowance for profit). It would appear from these figures that in the effective application of these aircraft lies the most practical possibility of the economic achievement of passenger fare levels of the order of 2½ annas a mile. But even here the same difficulty is likely to arise due to the restricted traffic potential which appears to be available. At least 40 passengers per trip would be needed to bring Skymaster costs down to the indicated level, as against 16 to 20 at present forming the average load travelling by Dakota or Viking.

198. **Possible reduction of cost if all operations were under one management.**—The foregoing calculations have been made on the assumption that the Industry remains under the control of a number of separate operators. Although it is difficult to estimate with any degree of certainty the savings in operating costs which might be achieved if the entire air transport system of the country were operated by a single corporation, it is desirable to examine the probable order of such savings.

There appears to be no reason to assume any lowering of charges for depreciation, insurance, interest on working capital, housing fees, landing charges, fuel and oil, flight crew salaries, medical and welfare or miscellaneous items. In the case of the Dakota at 2000 hours utilisation, these items account for Rs. 308 out of Rs. 541.5, or 57 per cent. of the total cost per hour.

Of the remaining items, those in the direct operating cost group, namely, servicing, airframe overhaul and engine overhaul will not be greatly affected, but by means of more effective planning, made possible by reason of the greater volume of work, the reasonable cost which we have calculated as Rs. 109.7 might be reduced by 10 per cent., to Rs. 98.7.

In the indirect and general costs group, administration, office rents, operations on-costs, training, and accounts and audit expenses should show some reduction owing to the elimination of duplication in overheads, say 12½ per cent. This would bring their combined total from Rs. 50 down to Rs. 43.7.

Passenger services may be capable of a little reduction, say 7½ per cent. decrease, from Rs. 30.6 to Rs. 28.3, mainly due to pooling of passenger transport facilities. A larger reduction should be possible in the item "Traffic, Sales and Agencies". In this item it should be possible to eliminate many redundant booking offices and to streamline the higher traffic organisation. A reduction of 30 per cent. in costs may not be too much to hope for, representing

a decrease from Rs. 36·8 to Rs. 25·8 in the hourly cost. Publicity and advertising may be allowed to remain at its original figure, since it has been taken as a fixed percentage of revenue.

The new total cost per hour would, under these assumptions, be Rs. 510·9 as against our original figure of Rs. 541·5, representing an overall reduction of 5½ per cent. While this percentage is by no means a precise figure, and while it would vary from aircraft type to aircraft type, we think it represents a realistic estimate of the likely order of reduction in costs made possible by the amalgamation of all operations under one management.

**189. Reduction of cost consequent on increased utilisation.**—Another factor, considered in relation to single-unit operation, is the increase in aircraft utilisation which should be possible, given freedom to develop operational routing plans for the airline network as a whole. It should be possible both to schedule more hours of flying per day with the serviceable aircraft available for route flying and to reduce appreciably the number of spare aircraft held as operational reserves against the development of mechanical defects, delay in return to base owing to bad weather, etc. This problem of operational planning is a highly technical and specialised study, and we feel that no useful purpose would be served by our attempting to suggest an actual pattern to be followed. But it seems to us quite possible that careful attention to this problem might enable a single operating unit to raise the average utilisation of the aircraft in its fleet from, say, 1800 hours (which appears to be about as high a figure as may be expected with the separate operating units) to, say, 2200 hours. In the case of the Dakota it will be seen from Chart I A (Appendix XV) that this means a reduction in cost per hour, from Rs. 552 to Rs. 535 or a drop of 3 per cent. Thus if it is assumed that the average utilisation of the Dakota under our proposed scheme of separate operators is 1800 hours, representing a reasonable cost per hour of Rs. 552, the reduction in minimum reasonable cost to be anticipated if the Industry were brought under the control of a single corporation would be 3 per cent. to Rs. 535, on account of increased utilisation, and a further 5½ per cent. to Rs. 505, on account of the factors mentioned earlier. The overall improvement in cost level with existing equipment might therefore be approximately 8½ per cent. In other words, a fare level of annas 4 per mile could be reduced to annas 3·66.

**190. Possibility of effective use of Skymaster aircraft under unified operation.**—There is a further possibility that the operation of all internal air services under one management would enable effective use to be made of the Skymaster on the heavy traffic routes, particularly Bombay—Delhi, Bombay—Calcutta and Delhi—Calcutta. As mentioned earlier in this Chapter, the use of Skymaster equipment with a suitable interior layout such as the suggested 61 seat arrangement should bring about an appreciable reduction in operating cost per ton-mile and hence in the level of economic fares. We are not in a position to estimate the practicability of this application of the Skymaster since its success would depend on the availability of sufficient traffic to maintain reasonable load factors. As we have already indicated, it is by no means certain that this demand does exist at the present time. We think, however, that it should be possible within the near future to develop more traffic on the routes mentioned and we recommend that the situation should be kept under constant review in order to ensure that benefits arising from the use of more economical equipment may be passed on to the travelling public as soon as it is practicable to operate such equipment on the internal routes.

### Reorganisation of the Air Transport Industry

**191. Paragraph (d) of our terms of reference.**—Paragraph (d) of our terms of reference requires us to recommend the manner in which Indian air services, internal and external, could best be operated with the maximum economy, having due regard to all relevant factors, including passenger fares, freight and mail rates during the five years 1950-54, providing also for adequate development of the air services. We propose to deal with this subject in this and the succeeding chapters.

**192. Brief recapitulation of development of air services.**—In the matter of the reorganisation of the Industry, we are faced with certain obvious difficulties. We might first briefly recapitulate how the present air routes developed. Internal air services in India were first started as auxiliaries to the operation of Imperial Airways. The Aviation Department of Tata Sons known as Tata Airlines, the predecessor of Air-India, for example, commenced operation in 1932 with a weekly air mail service between Karachi and Madras to connect with Imperial Airways' service which operated only as far as Karachi. Similarly, Indian National Airways began in 1934 to carry mail between Karachi and Lahore linking its service with that of Imperial Airways at Karachi. Thereafter, these two companies and Air Services of India began to operate on several routes. There was no regular system of licensing and, so long as the companies conformed to the technical requirements of the Indian Aircraft Rules, it was open to any company to operate scheduled services provided ground facilities were available. When the Empire Air Mail Scheme was introduced in 1938, the Karachi-Madras service of Tata Airlines and Indian National Airways' Karachi-Lahore service were utilised for the operation of the Scheme so far as India was concerned. The Government of India entered into 15-year contracts with those companies for the carriage of mail on their routes. The Karachi-Madras service was extended to Colombo for the carriage of mails to and from Ceylon. The second World War began in 1939 and with it most of the civil air transport operations came to an end, the resources of the civil air operators having been placed at the disposal of Government for War purposes. At the end of the War, air transport attracted great interest as a field for speculative investment. Capital flowed into this new industry where easy profits were anticipated on the basis of war-time experience. Government had decided a little earlier that, in order to secure orderly development of civil air transport, a system of control should be introduced. Accordingly, in 1946, the Government of India amended the Indian Aircraft Rules and set up an Air Transport Licensing Board to co-ordinate and control air transport operations in the whole of the country. Under the amended Rules, from 1st October 1946, no scheduled air transport service could be operated except under a licence given by the Board. Rule 147 of the Indian Aircraft Rules, however, laid down that in the case of a scheduled air transport service which was in operation on 1st July 1946, provided an application for a licence had been made by the operator concerned before 1st August 1946, the Board was bound to grant a provisional licence, authorising the airline concerned to continue to operate the service until a licence was issued to it under rule 141, or in the event of its application being rejected, until the expiry of three months from the date of such rejection. Those companies, therefore, who were operating scheduled air transport services on 1st July 1946 and applied for licences were entitled to get provisional licences under rule 147. The companies and the routes in respect of which provisional licences were issued under rule 147 were as follows:—

Statement showing scheduled air services in operation on 1st July, 1946, in respect of which licences were issued under rule 147 of the Indian Aircraft Rules, 1937

Name of the company	Route	Frequency
Air-India, Bombay	(i) Karachi-Ahmedabad-Bombay-Hyderabad-Madras-Colombo	Six times a week (with an additional weekly frequency on the Karachi-Ahmedabad-Bombay sector).
Indian National Airways, New Delhi	(ii) Bombay-Ahmedabad-Delhi	Daily.
	(iii) Bombay-Nagpur-Calcutta	Once a week.
	(i) Calcutta-Allahabad-Kanpur-Delhi-Lahore-Rawalpindi-Peshawar.	Daily.
	(ii) Delhi-Jodhpur-Karachi	Daily.
Air Services of India, Bombay	(iii) Delhi-Lucknow	Daily.
	(iv) Lahore-Bikaner-Jodhpur-Ahmedabad.	Twice a week.
	(i) Bombay-Jaipur-Karachi.	Daily.
	(ii) Bombay-Bhopal-Kanpur-Lucknow.	Once a week.

[TABLE No. 24]

It would appear from the above table that Air-India, Indian National Airways and Air Services of India obtained provisional licences in respect of most of their present routes practically automatically and almost as a matter of right. We understand that the applications of several of the companies which were given provisional licences were not finally decided under rule 141 until 1st July 1949 when term licences were issued. Till then only provisional licences continued to be issued under rule 146. Immediately after the new rules came into force, Deccan Airways was granted provisional licences under rule 146 in respect of the following services:—

Delhi-Bhopal-Nagpur-Hyderabad-Madras;  
Hyderabad-Bangalore.

These services were in operation on 1st July 1946 but as the application for a licence in respect of them was not made before the prescribed date, viz. 1st August 1946, the provisional licences were issued not under rule 147, but under rule 146. There were numerous applications for other routes from the different companies and those were dealt with by the Air Transport Licensing Board under rule 146. The operations in the Bengal and Assam region were entrusted to Bharat Airways and Airways (India). The Board also issued licences to Ambica Airlines and Jupiter Airways, but those two companies subsequently went into liquidation. Dalmia Jain Airways was granted a licence to operate the Delhi-Srinagar route, but it later surrendered its licence and confined itself to charter operations. Mistri Airways, the predecessor of Indian Overseas Airlines, was given a licence to operate the Bombay-Nagpur-Calcutta stopping service. Later on, it was given licences to operate Nagpur-Hyderabad-Bangalore-Madras route and Nagpur-Jubbulpore-Allahabad-Kanpur-Lucknow route. The operations on both these routes, however, came to an end before the end of 1948. In February 1949, it was permitted to run a night airmail service on the routes Bombay-Nagpur-Calcutta and Delhi-Nagpur-Madras. It was, however, unable to operate the night airmail service after June 1949. So far, all the companies were operating under provisional licences. From 1st July 1949, the Air Transport Licensing Board granted 10-year licences to the various operators in respect of most of their routes. In October 1949, a provisional licence for operating the night airmail services was given to Himalayan Aviation. Kainaga Airways was given a provisional licence to run a freighter service between Calcutta and Agartala in May 1949. The present position indicating the route mileage, flying hours, traffic carried in ton-miles and revenue of the various licence holders is shown in table No. 24.



*Transportation performed and revenue earned by scheduled air transport operators during the latest financial year for which figures were submitted.*

	Route mileage on 1st July 1950	Year	Flying hours	Capacity ton- miles operated	Total trans- portation per- formed in ton- miles	Revenue Rs.
<b>Term Licence-holders.</b>						
1. Air-India . . . . .	5940	1949	28,061	9,917,395	7,356,140	1,86,61,075
2. Indian National Airways . . . . .	3880	1948-49	10,323	3,866,880	2,624,137	76,60,545
3. Air Services of India . . . . .	2548	1948-49	17,935	2,137,891	1,575,975	45,33,139
4. Deccan Airways . . . . .	1819	1949	10,305	3,099,753	1,893,888	47,02,236
5. Airways (India) . . . . .	2016	1949	11,385	3,670,286	1,974,241	54,69,406
6. Bharat Airways . . . . .	3233	1948-49	6,440	1,998,083	1,035,317	28,31,622
<b>TOTAL . . . . .</b>	<b>19,435</b>		<b>74,449</b>	<b>24,659,688</b>	<b>16,459,698</b>	<b>4,38,48,023</b>
<b>Provisional Licence-holders.</b>						
1. Indian Overseas Airlines . . . . .	1,037	*1948-49	7,901	2,247,955	1,030,136	10,36,136
2. Himalayan Aviation . . . . .	2132	†	10,056	3,837,600	2,656,752	52,11,960
3. Kalinga Airlines . . . . .	196	‡	5,024	2,775,678	2,585,296	39,11,460
<b>TOTAL . . . . .</b>	<b>3,365</b>		<b>22,681</b>	<b>8,911,233</b>	<b>6,278,184</b>	<b>1,01,59,556</b>
<b>GRAND TOTAL . . . . .</b>	<b>22,800</b>		<b>97,130</b>	<b>33,570,921</b>	<b>22,737,882</b>	<b>5,40,07,579</b>

\* During 1948-1949 this company was operating a number of air services which have now been discontinued.

† Adjusted to one year from figures for the period 1-7-1949 to 31-3-1950.

‡ Adjusted to one year from figures for the period from 1-1-1950 to 30-6-1950.

193. **Present unbalanced distribution of route mileage and traffic among the companies.**—It would be observed that the distribution of the route mileage and the traffic between the various companies is altogether unbalanced, and that one operator, viz., Air-India, does the largest amount of flying and earns by far the largest amount of revenue. We realise that this is partly due to historical reasons. Tata Airlines, the predecessor of Air-India, was the first to come into the field of civil air transport and started the Industry as early as 1932. Even before the Air Transport Licensing Board began to function, it was operating many of its present routes. It got additional frequencies on its then existing routes. With the acquisition of Vikings, the Company began to operate direct services between Bombay on the one hand and Karachi, Delhi and Calcutta on the other in addition to its stopping services. The only additional route for which Air-India obtained a term licence is the Madras-Bangalore-Cochin-Trivandrum route, which it had been operating under a provisional licence from January 1947. It also holds a provisional licence for the night air service on the Bombay-Delhi route, which it obtained in February 1950. Air-India thus does almost one-third of the total scheduled flying in India and handles about one-third of the total traffic. The rest of the traffic is divided between the remaining five scheduled term licence-holders and three scheduled provisional licence-holders. Some of the most remunerative routes were already in the hands of Air-India, and rule 147 of the Indian Aircraft Rules made it obligatory on the Air Transport Licensing Board to give provisional licences in respect of all those routes. It is, therefore, not surprising that the remaining operators had to rest content with less remunerative routes.

194. **Too many operators for the available amount of traffic.**—The present plight of the Industry has been variously attributed to the fact that there are too many operators for the amount of traffic available in the country. This subject has been considered by us in Chapter 3 and we have come to the conclusion as stated therein, that the fault is not entirely that of the Air Transport Licensing Board. We have referred to the fact that far too many companies were allowed to come into the field by grant of permits for floating capital and, surplus Dakotas being available from the Disposals at extremely low prices, the companies equipped themselves with far more aircraft than were necessary. Many of the companies have complained that this was due to the manner in which rule 140(4) of the Indian Aircraft Rules with regard to availability and suitability of "aircraft" was interpreted in practice by the Air Transport Licensing Board as meaning that the applicant companies should have equipped themselves with the necessary aircraft before their applications for licences could even be considered. On the other hand, it is possible that the applicant companies thought that their claims for routes would be strengthened if they possessed the necessary equipment and on that account purchased aircraft before submitting their applications to the Board. We cannot say whether there is any substance in the complaint made by the companies. But the fact remains that the rules were amended recently enabling the Air Transport Licensing Board to grant a licence as soon as the applicant satisfied the Board with regard to the requirements of clauses (1), (2) and (3) of rule 140, i.e., relating to economic strength and route organization, and leaving the applicants to satisfy the Director General of Civil Aviation with respect to the requirements of sub-rule (4) and other rules, i.e., relating to aircraft, personnel and other technical matters before a particular date, after which only the licences granted by the Board could take effect. This might suggest that there is some justification for the complaint made by the companies, or at any rate, the rules, as they stood, could have been interpreted in that sense. There was a scramble for obtaining licences for operating the routes without a proper investigation of the traffic necessities. The companies now complain that there has not been sufficient

amount of traffic on the routes for which they obtained licences. But this position should have been carefully examined by them as prudent businessmen before they applied for licences and purchased their equipment. We do not wish here to apportion blame between the companies and the Air Transport Licensing Board. But it is clear that with the exception of Air-India, all the other scheduled operators have inadequate amount of flying and insufficient traffic. Even after the position was stabilised by the grant of term licences to the seven scheduled operators in June 1949, the Air Transport Licensing Board thought fit to introduce into the field two new operators by granting provisional licences to Kalinga Airlines and Himalayan Aviation. The position which was already sufficiently serious was considerably worsened by the introduction of these two provisional licence-holders.

**195. Situation complicated by grant of term licences.**—If term licences had not been issued in June 1949 and the companies had continued to operate on the basis of provisional licences, it might have been possible for us to suggest either the elimination of some of the operators or a redistribution of routes on a more equitable basis, especially after the amendment of rule 151 of the Indian Aircraft Rules. That rule, as it stands now, retains the right for a renewal of a licence only in favour of a holder of a licence other than a temporary or a provisional licence. But for this amendment, even a provisional licence-holder would have had a right to have his licence renewed by Air Transport Licensing Board, if the Board was satisfied that the air transport service had been operated efficiently and in the best interests of the public. After the amendment of the rule, it would have been open to us to suggest a redistribution of the routes. But the grant of term licences in June 1949 has undoubtedly had the effect of stabilising the position then existing, and we are now faced with the fact that there are at present six term licence-holders (the term licence of Indian Overseas Air Lines was converted into a provisional licence in September 1949 following the difficulties of the Company) who are entitled to operate scheduled services on their respective routes for at least nine more years. Rule 148 of the Indian Aircraft Rules undoubtedly reserves the right to the Board to revoke a licence under certain conditions none of which could, however, be applied in respect of the term licences of the six operators, except perhaps clause (c) thereof. That clause says—"a licence may be revoked or suspended if the Board is satisfied that having regard to the financial resources of the holder of the licence or the losses incurred by him, he cannot be relied upon to continue the operation of the services in a safe, efficient and reliable manner". It is true that most of the term licence-holders are incurring losses. But it cannot be inferred therefrom as a necessary corollary that the operation of those services by them would be unsafe, inefficient or unreliable. Many of them have considerable financial backing and may be expected to operate the services in a safe, efficient and reliable manner, even though at a loss to themselves.

**196. Committee's recommendations to take into account existing position as stabilised by grant of term licences.**—The position, therefore, is that the present pattern, so far as term licence-holders are concerned, has been stabilised for ten years. We must accept the position as we find it and suggest possible ways of reorganisation of the Industry for the next five years on the footing that the six term licence-holders will have the right to operate their routes unless some of them bring about one or more voluntary mergers. Of course, it is possible to allow the normal economic forces to take their own course, resulting in the elimination of the weaker units of the Industry and leaving only a few strong units in the field. But, such a policy will undoubtedly further weaken the financial position of all the companies and jeopardise the stability of the entire Air Transport Industry itself. We presume that it is not the intention

of Government to allow this to happen, for we have been called upon by our terms of reference to suggest the manner in which the Indian air services could be operated with the maximum economy, having due regard to all the relevant factors.

**197. Possibility of reduction in number of operating units being brought about by voluntary mergers.**—Most of the companies and others who have answered our Questionnaire have suggested that there should be reduction in the number of operators. But apart from saying that the provisional licence-holders should not have their licences renewed, they have made no concrete suggestions as to how this reduction is to be brought about, in view of the difficulty created by the grant of term licences. The possibility of a voluntary merger has been mooted. An ideal pattern would be to have only four operators with their bases at Bombay, Delhi, Calcutta and Hyderabad. This would be a good geographical and zonal distribution and each unit could be expected to develop its routes and promote air-mindedness among the public in the respective zones. This plan also coincides with the existence of very good facilities for servicing and overhaul at the four places. We tentatively suggested such an arrangement to the operators, but we sensed a difficulty so far as the operators based at Calcutta were concerned. A fusion of Bharat Airways and Airways (India) both of whom operate from Calcutta in the same or closely contiguous area, would conduce materially to the increase of efficiency, elimination of competition and lowering of costs. But, if this union is not practicable, we must reconcile ourselves to the position that there will be two operators based at Calcutta. We understand that there have been negotiations for a merger between Air Services of India and Deccan Airways. We would strongly recommend such a union and would venture to suggest that the unit should operate from Hyderabad where very good maintenance and overhaul facilities now exist, although it will have to maintain a fairly complete base at Bombay also for its operations in Saurashtra. The comparatively cheap labour that is obtainable at Hyderabad affords an additional argument in favour of the unit being based there.

**198. Elimination of provisional licence-holders.**—Even if this proposal for merger of Deccan Airways with Air Services of India were carried through, there would still remain five term licence-holders, four of whom have little prospect, in the existing state of the Industry, of securing adequate traffic for their economic working. We have, therefore, to find some suitable method for the re-organisation of the Industry by allocating new routes to the term licence-holders who have been in the field for a number of years, who have invested a large amount of capital and borne the risks of pioneering development and who have substantially contributed to the building up of the Air Transport Industry in the country. We can find no new routes for allocation to these term licence-holders which would appreciably increase their traffic. Such being the situation, the first step in the direction of the Industry's re-organization, in our opinion, is to eliminate the provisional licence-holders in respect of the scheduled services. Regarding the latter, Government have made no serious commitments and they are all operating under provisional licences which may or may not be renewed as the Air Transport Licensing Board thinks fit. The three operators who are affected by this suggestion are Indian Overseas Airlines, Himalayan Aviation and Kalinga Airlines.)

**199. Indian Overseas Airlines.**—So far as Indian Overseas Airlines is concerned, the only service that it operates at present is the day stopping service on the route Bombay-Nagpur-Calcutta. The latest published balance sheet of this company that is available to us is for the year ended 31st March 1948. According to that balance sheet, it made during that year a small profit of

Rs. 69,000, but this was possible only by transferring an expenditure of about Rs. 9 lakhs to the Development Account. According to its own statement of revenue and expenditure for that year, the company (incurred a loss of about Rs. 5 lakhs). We have since received the Company's provisional balance sheet for the year ended 31st March 1949, which discloses that the Company incurred during that year a loss of Rs. 35.41 lakhs without making adequate provision for depreciation. We do not know how its financial situation has altered since 31st March 1949. But we have reason to believe that it could not be satisfactory at all. In 1948-49, the Company did 9,686 hours of flying with Dakotas and its operating costs came to more than Rs. 5 per aircraft mile. Such high operating costs, combined with the low load factor of 39.6 per cent., must inevitably result in heavy losses. There has apparently been no improvement in the situation, and its operation during the current year must also result in a heavy loss. The Company is in possession of perhaps the largest fleet of aircraft owned by any operator in this country, consisting of 15 Dakotas, 1 Sky-master, 13 Norseman, 1 Expediter and 4 Harvards, while perhaps not more than 4 Dakotas are necessary for its present scheduled service. That must necessarily add very considerably to its high cost of operation, and the comparatively unremunerative nature of its only service must land it in heavy losses. It appears to us that it will merely be a question of time when this concern will have to cease functioning. It does not appear to us possible, by any rearrangement of routes, to give it any additional services or route mileage. The Company has asked that the direct service between Bombay and Calcutta, which is now in the hands of Air-India, may be given to it. But, that service is already being operated by Air-India under a term licence. (It is, therefore, not possible to suggest the grant of this route to Indian Overseas Air Lines). The Company has also suggested that the night airmail service which it operated for four months in 1949, may be restored to it. When it did have in opportunity of running the night airmail service, there was a financial crisis in its operations. The crisis was of such magnitude that at one time it had only one Dakota which had a valid certificate of airworthiness, and it had therefore to discontinue the night airmail service, first between Delhi and Madras and then between Bombay and Calcutta. (We have not been made aware that there has been any material improvement in the Company's financial position, and it is now operating one non-paying route under a provisional licence. We consider that, on the whole, there is no case for this Company to continue to operate and we recommend that the provisional licence granted to it should not be renewed).

**200. Himalayan Aviation. How it came into the field of scheduled operations.**—So far as Himalayan Aviation is concerned, the position is somewhat different. This Company was only a non-scheduled operator till October 1949, and an extraordinary set of circumstances enabled it to come into the field of scheduled operations. After the night airmail service run by Indian Overseas Airlines came to an end in June 1949, it appears to have been decided by Government that, as the monsoon had supervened, no further steps should be taken for continuing the night airmail service, especially as Government were not then satisfied about adequate ground facilities being available for operations during the monsoon. The question, however, of re-starting the night airmail service after the monsoon was taken in hand in September 1949. After protracted negotiations, five airlines, namely, Air-India, Air Services of India, Deccan Airways, Indian National Airways and Airways (India) offered to run the night airmail service after the monsoon for carrying mail, freight and passengers, provided Government gave a guarantee to them of revenue equivalent to at least Rs. 3 per aircraft mile flown. Bharat Airways offered to run the night service on a guarantee of Rs. 2/12/- per aircraft mile flown. Government did not then wish to undertake the burden of a guarantee. Himalayan Aviation, which was till then a non-scheduled operator, offered to run the service with-

out any guarantee. The Director General of Civil Aviation informed Government of the replies he had received from the various operators and the Director General of Posts and Telegraphs, under instructions from Government, approached the Air Transport Licensing Board for the licensing of an airline to resume the night airmail service with effect from 15th October 1949. After seeing all the correspondence between the airlines and the Director General of Civil Aviation, the Air Transport Licensing Board gave a licence to Himalayan Aviation to operate the service for a period of three months. Indian Overseas Airlines, who had got into financial difficulties after the failure of the Exchange Bank of India and Africa who were financing it, was not considered sound enough to be allowed to resume the service. Himalayan Aviation started the service within 15 days of the grant of a licence to it and justified its selection by the punctuality, safety and operational efficiency of its services.

**201. Renewal of its provisional licence up to end of January 1951.**—Before the three months of its provisional licence were over, Himalayan Aviation applied for a term licence. The usual prescribed procedure was followed and, in the course of the hearing that ensued, all the airlines opposed the grant of this licence to Himalayan Aviation, and five of them, viz., Air-India, Air Services of India, Indian National Airways, Deccan Airways and Airways (India) jointly offered to operate the service. Bharat Airways and Indian Overseas Airlines urged their individual claims. However, on the grounds that (i) Himalayan Aviation had taken the risk and (ii) it had made large investments to operate the services by purchase of additional aircraft and spares and had engaged additional personnel, the Board, by a majority, did not feel justified in taking away its licence and giving it to those who had previously refused to operate the service without a guarantee but who had subsequently come forward to operate it without any such condition. Having regard, however, to the appointment of the Air Transport Inquiry Committee and its terms of reference, the Board renewed Himalayan Aviation's provisional licence up to the end of January 1951.

**202. Examination of the position of the other companies in regard to operation of night air services and of the grounds for giving provisional licence to Himalayan Aviation.**—It seems to us that both the grounds on which one year's provisional licence was given to Himalayan Aviation in January this year are open to criticism. One ground is that the Company had purchased additional aircraft and spares to operate the night service. When three months' licence was given to it to operate the night service in October 1949, it had to purchase a certain number of Dakotas in addition to those which it possessed as a non-scheduled operator. It obtained those aircraft on a deferred payment system, and we were informed that the payment for the first Dakota was made on 14th October 1949 and for the remaining two Dakotas the payment was made in the months of November and December 1949. The Company does not appear to have made any further commitments after the grant to it of the three months' provisional licence which would substantiate its claims for the continuance of that licence on the expiry of the three months' period. It had not invested any very large amounts during the period of its interim licence so as to justify this factor weighing heavily in its favour. The other argument why the licence was renewed in favour of Himalayan Aviation, viz., that it had taken a risk while others had asked for a guarantee appears to arise out of a sense of moral obligation to the Company which had come to the assistance of Government to implement their scheme without asking for any kind of guarantee. In our view, it was not unreasonable on the part of the companies to have asked for a guaranteed revenue of Rs. 3 per aircraft mile, if Government wanted their scheme to be implemented. We have indicated elsewhere that the reasonable total costs of operating a Dakota are very much higher than Rs. 3 per mile and, if Government did desire that a night airmail service

should be in operation, it was not unreasonable on the part of the companies to have asked for a minimum guaranteed revenue of Rs. 3 per mile. If the companies actually obtained revenue of Rs. 3 or more per mile, Government would not have been under any liability even if the guarantee were given. If, on the other hand, the revenue did not cover their costs, then there was some justification for asking Government to make up the deficit for experimenting with a service, the prospects of which were till then unknown. If they had asked for no such guarantee and had in fact earned only a revenue of, say, Rs. 2/8/- per aircraft mile, would it have been proper on their part to have incurred that risk without asking for any guarantee? The companies were public limited concerns in the position of trustees of the monies of their shareholders. Himalayan Aviation, on the other hand, was a private limited company, the bulk of whose capital was subscribed by two or three persons. Government could not reasonably expect public limited companies to have rushed headlong without knowing what the prospects were and without protecting themselves against a possible loss. Government on the other hand decided not to incur the risk of a guarantee and accordingly the A.T.L.B. granted a provisional licence for a period of three months to the operator who was prepared to operate the service without insisting on a guarantee. It is true that Himalayan Aviation took a certain amount of risk, and that, after the interim period of three months, the other operators wanted to profit by the experience of Himalayan Aviation which had taken that risk. But, it is also possible to argue that the companies realised the gravity of the losses to which they were exposed by the operation of Himalayan Aviation and wanted to cut those losses by agreeing to take over those operations themselves.

**203. Examination of the grounds for renewing Himalayan Aviation's provisional licence in January 1950.**—Whatever justification there may have been for granting a provisional licence to Himalayan Aviation in October 1949 because it was prepared to operate the service without imposing any obligation on Government, in deciding the question of extending Himalayan Aviation's licence in January 1950 for a further period of one year, the Air Transport Licensing Board should, in our view, have attached more importance to the interest of the Industry as a whole than to that of one individual operator. There can be no doubt that the extension of the licence of Himalayan Aviation deprived the older airlines of a substantial amount of traffic which would have helped them in their financial difficulties. It may be granted that the non-renewal of the licence of Himalayan Aviation would have caused a certain amount of hardship to the Company. It is also true that the other operating companies were taking advantage of the risks undertaken and the experience obtained by Himalayan Aviation. Even so, we consider that it would have been in the best interests of the Industry if the established airlines had been allowed to operate the night air service and a new scheduled operator not brought into the field. It undoubtedly accentuated what was already a difficult situation in the Industry.

**204. Financial results of Himalayan Aviation's operation of the night services.**—It has been contended before us that Himalayan Aviation has justified itself as indicated by its operational efficiency and sound financial position. So far as the technical efficiency is concerned, we have no hesitation in joining with others in paying a tribute to the manner in which Himalayan Aviation has carried out the task entrusted to it. Some of us have had actual experience of the way in which the night services were being operated and we have no doubt that Himalayan Aviation has made a success of the task undertaken by it so far as technical efficiency is concerned. But we are not altogether happy in respect of the argument advanced about the experiment having become a financial success. Himalayan Aviation has not yet completed one

year of its operations. We have, however, been supplied with a provisional balance sheet of the Company for the year ended 30th June 1950. According to the balance sheet, the Company would be showing a small loss for the period ended 30th June 1950, after taking into consideration Rs. 3½ lakhs of revenue from petrol rebate. As we have pointed out in Section (9) of Chapter 3, the loss would, on a proper examination of the accounts, be considerably higher. We were informed by the General Manager in a letter dated 15th August 1950 that the loss during the year was largely attributable to the fact that during 3 months of 1949 (July, August and September) before starting the Night Air Mail Service the Company had incurred a loss of Rs. 4 lakhs. We have not been supplied with any accounts which would substantiate this position. We are also informed that the Company has still some claims against Government which are outstanding and which might convert this loss into a profit. These outstanding claims against Government refer to the refund of Rs. 0/7/3 per gallon as sales tax on the price of petrol uplifted at Nagpur, the refund of 15½ annas per gallon out of the sales tax on the oil uplifted at Nagpur and the refund to the Company of the additional cost involved, owing to the rise in the cost of petrol as a result of devaluation, viz., As 5¼ a gallon. The Company claims that in respect of all these three items, an assurance was given by the Director General of Civil Aviation that the Company would get relief. The Director General of Civil Aviation informs us that no such assurance was given, but that the Company was merely told that Government would make an effort to persuade the Madhya Pradesh Government to give to the Company a rebate of a part of the sales tax levied by them. We are, therefore, not certain that the anticipated revenue from the outstanding claims will necessarily accrue to the Company and convert its losses into profit.

**205. Exceptional circumstances in which Himalayan Aviation operates.—** But, even assuming that the Company is able to break even, if not to make a profit, it seems to us that these figures do not give us the correct picture so as to enable us to compare its operations with those of the other Companies. The Company is operating under somewhat exceptional circumstances. It is getting a very large percentage of mail, although some inroads have been made into it since Air-India was allowed to operate the night air service between Bombay and Delhi. Even so, it is found from the provisional balance sheet that the income from mails during the year ended 30th June 1950 was 27.3 per cent. of its total revenue. We have found that the mail revenue of an operator, before the night services were instituted, normally constituted only about 3 to 15 per cent. of the total revenue, whereas in the case of Himalayan Aviation, under the peculiar circumstances under which it is operating, the mail revenue forms a very large percentage of the total revenue. The mail load by itself would undoubtedly have been quite insufficient to defray the costs of working the service. The passenger fares were fixed under the terms of the licence at 12½ per cent. above the corresponding First Class railway fares. The passenger fare by itself is uneconomical and it is quite clear (and the fact was admitted before us) that the mail revenue is in fact subsidising the passenger traffic. If the mail revenue remains constant as it is likely to, any increase in its frequency to cater for additional passenger and freight traffic will only add to the Company's losses.

**206. Further points to be taken into account in assessing financial results of Himalayan Aviation.—** There are two or three additional factors which must be remembered in assessing the financial results of Himalayan Aviation. For the first 3 or 3½ months since the commencement of its night air mail service operations, the Company was having a particularly large revenue from mail, which went down in March 1950 when Air-India started the night air service



between Bombay and Delhi. The Company therefore cannot expect now to earn mail revenue on the same scale in the future. To that extent the mail revenue of the Company for the period from 15th October 1949 to 30th June 1950 shows a figure which it is not likely to maintain in the future.

Further, Himalayan Aviation is in a particularly favourable position as it is running its scheduled services during the night and is, therefore, able to utilise its aircraft during the day for charter operations. Other companies which run their scheduled services during the day are not in the same happy position, as there are very few charter operations undertaken during night.

Although on the basis of nine months' working, which include only 5½ months of scheduled operations, the Company's operating costs per mile are not high (viz., Rs. 3/6/- per mile) there are factors which go to show that its expenses are likely to go up in the near future. (The Company has by no means reached the maximum limit of its normal expenditure) It is still in the process of organising and, during recent months, has added to its staff. Its ground facilities at Nagpur have still to be expanded and fully organised.

Further, the Company is at present getting its traffic and sales work done through Mercury Travels from whom it has been able to secure exceptionally favourable terms which, in actual practice, work out at 3 per cent. on bookings. We understand that Mercury Travels are now likely to make a demand for a revision of the agreement to bring it more in line with the normal commission of 5 per cent. We were informed that such a request would be favourably considered. This would result in an increase in the costs of operations.

Himalayan Aviation's revenue, on the other hand, is likely to decrease as the pay load of the Company's aircraft is tending to become progressively smaller. The Company started operation with aircraft having no interior furnishings, which have now been provided practically on the same standard as the day services of other companies. More seats have been provided with greater convenience to the passengers. Provision has also been made for carriage of refreshments. Additional radio and navigational equipment has been installed. All this would result in a decrease of the pay load capacity of the company's aircraft. Although, therefore, we acknowledge the operational and technical efficiency of this Company, we are by no means satisfied that its financial results are any better than those of most other Companies.

**207. Provisional licence of Himalayan Aviation not to be renewed on its expiry in January 1951.**—Moreover, there are other points to be considered in this connection. This Company was only a non-scheduled operator till October 1949 unlike most of the companies who have been in the field as scheduled operators for several years. It is a private limited Company with its capital predominantly owned by two or three individuals, unlike the other scheduled companies, the issued capital of which is subscribed by a large section of the public. Himalayan Aviation has not yet made any big capital investments in the Industry unlike several other scheduled operators who have invested large capital in establishing their concerns. If the Industry is to be rehabilitated and if it unfortunately becomes necessary for certain operators to go out of scheduled operations and some pruning has to be done, we think that the considerations set forth above would suggest that the least harm would be done to the public and to the Industry as a whole if the provisional licence of Himalayan Aviation, which expires at the end of January 1951, is not renewed.

**208. Kalinga Airlines.**—So far as Kalinga Airlines is concerned, it was also a non-scheduled operator till May 1949. Although the Questionnaire was sent to it as long as the first week of April 1950, we were not favoured till the

end of July with its views on any of the items included in the Questionnaire nor with any figures showing its present financial position and its operating results. We were on the other hand treated to an unfortunately worded letter. Our personal request, when we visited its offices in Calcutta, however, evoked some response inadequate though it still is. We have now received a statement of revenue and expenditure for six months ended 30th June 1950, which shows that on its operation (both scheduled and non-scheduled) it made a profit of Rs. 3 lakhs. Its non-scheduled operations were conducted on a wide scale, during the last six months particularly, owing to the situation in Bengal and Assam, and this brought it a revenue of Rs. 10 lakhs. Its only scheduled run is a freighter service between Calcutta and Agartala. It is true that it is doing well at present owing to the special conditions prevailing in Bengal and Assam, but it is impossible to say how long these special conditions will continue. We recommend in a subsequent Chapter that no purely non-scheduled permit-holder should be allowed to operate on routes on which scheduled services are in operation. The recent institution of scheduled services by Bharat Airways to Kumbhigram, Imphal, Jorhat and Mohanbari will vitally affect the revenue of Kalinga Airways from non-scheduled operations which were mostly conducted in that area during the last six months. There appears to be no particular advantage in continuing its provisional licence when the traffic carried by it could well be managed by the older scheduled operators based at Calcutta. Its investment in the Industry does not appear to have been very substantial. We cannot visualise in any system of rationalisation the continuance of a unit operating on such a small scale when we are proposing the elimination of much bigger units from the field of scheduled operations.

**209. Additional route mileage for term licence-holders can only be made available by elimination of provisional licence-holders.**—Although we have examined in some detail the financial position of the three provisional licence-holders, we base our recommendation for the non-renewal of the provisional licences of these companies primarily on the ground, as explained earlier in this Chapter, that it is necessary that some additional route mileage should be provided to the term licence-holders and we can see no obvious ways of suggesting new routes which could be allotted to them. Such routes would, therefore, have to come from other licence-holders. These proposals only amount to rectifying a situation which was brought about by the grant of provisional licences in 1949. The Honourable Minister for Communications had made a statement in Parliament on 9th April 1949 that "it was not the intention of Government to grant licences to any new companies." Even so, new provisional licences were issued. As the three companies, *viz.*, Indian Overseas Airlines, Himalayan Aviation and Kalinga Airways, hold only provisional licences and Government do not stand committed to the continuance of their operations, we think that the interests of the Industry require that the provisional licences of these three operators should not be renewed. On this basis, we proceed to consider the question of the redistribution of the routes within the limitation imposed upon us by the grant of the term licences. Our proposals in this regard and an estimate of their financial results are discussed in the following Chapters.

## CHAPTER 7

### Redistribution of Routes

**210. Details of redistribution.**—We suggest that under the new set-up, the distribution of routes may be as follows:—

*Air-India.*—This Company should retain the present routes for which it holds licences. Its provisional licence for the night airmail service between Bombay and Delhi should be converted into a term licence.

**Indian National Airways.**—It should retain all its present routes for which it holds licences. It should also be given as soon as practicable a licence for running a night service between Delhi and Calcutta direct.

**Air Services of India & Deccan Airways.**—On the assumption that the negotiations which are under way at present between Air Services of India and Deccan Airways for a merger will reach a successful conclusion, the new Company should take over the routes for which the two Companies at present hold term licences. Later in this Chapter, we have suggested some rearrangement in the operation of those services. The new Company should, in addition, be given the night service at present operated by Himalayan Aviation on the route Delhi-Nagpur-Madras.

**Airways (India).**—This Company should retain the present routes for which it holds term licences. It should, in addition, be given the licences for the Bombay-Nagpur-Calcutta night service and also for the stopping day service Bombay-Nagpur-Calcutta at present operated by Indian Overseas Airlines.

**Bharat Airways.**—It should retain the present routes for which it holds term licences. By the elimination of Kalinga Airlines from scheduled operations, it will get the whole of the freight traffic between Calcutta and Agartala, which route it is already operating at present. If a licence for Calcutta-Patna-Khatmandu route is to be given in future, the airline which could operate it most economically would be Bharat Airways.

211. **Reasons for redistribution.**—We proceed to explain why we have suggested the above pattern.

212. **Air-India.**—We do not think that Air-India requires any further route mileage to be assigned to it. It has already got the cream of the traffic. It has practically all the main routes radiating from Bombay, viz., to Karachi, Delhi, Calcutta, Madras and Colombo. It therefore operates not only the main routes, but some of the most remunerative routes in the country. It has the highest utilization per aircraft and a very satisfactory load factor. Under these favourable circumstances, it seems to us surprising that it should exhibit such a heavy loss for 1949. Air-India's revenue per mile is satisfactory, being nearly the highest in India. Including the non-transportation revenue, it was 73.7 annas per mile in 1947; 80.0 annas per mile in 1948; and 75.2 annas per mile in 1949. Its primary difficulty is not that its revenue is low, but that its operating costs are high. They were 70.2 annas per mile in 1947; 79.4 annas per mile in 1948; and 85.2 annas per mile in 1949. Thus the profit of 3.5 annas per mile in 1947 and of 0.6 annas per mile in 1948 and a loss of 10 annas a mile in 1949 reflected themselves in the profit of Rs. 14 lakhs which the Company made in 1947, a profit of Rs. 2 lakhs in 1948 and a loss of about Rs. 30 lakhs in 1949. It has now recognised the fact that its organisation is on far too big a scale for its needs. It has stated that its organisation was intended for about 50,000 hours of flying a year, whereas it does only about 27,000 hours at present. It is true that from the outset it set out to establish an industry in India operated entirely by Indians. If a company desires to develop an industry like Civil Aviation, it has continuously to develop its organisation and train its flight and engineering personnel. It was this process of development which enabled Air-India to effect a smooth transition from Dakota operations to Viking operations and thence to Constellations. Even bearing all these facts in mind, it cannot be denied that its costs of operations are high, the highest in India. We therefore suggest that Air-India should re-examine its cost structure, effect economies

wherever practicable and thus reduce operating costs. As we indicate in a later Chapter, if it brings down its costs to what we consider to be reasonable levels, it should make a reasonable profit even on its present scale of revenue. We do not therefore consider that on our scheme of redistribution any more routes need be assigned to Air-India. But we suggest that its provisional licence for the night service between Bombay and Delhi may be converted into a term licence. We did consider the question of recommending the non-renewal of its provisional licence and assigning the route to some other operator. But Air-India is already running a Viking day service and a stopping Dakota service to Delhi. The only other two operators to whom this night service could have been assigned are Indian National Airways or the merged unit of Air Services of India and Deccan Airways. We are proposing that Indian National Airways should run a night Viking service from Delhi to Calcutta in conjunction with its non-stop day Viking service, which will give it full utilisation for its Vikings. It would not be right to introduce a third competitor on the Bombay-Delhi run. Air Services of India—Deccan do not possess Vikings, which are more economical than Dakotas for a non-stop stage of this length. As Air-India is already operating a non-stop day Viking service between Bombay and Delhi, it would be most convenient and economical if it also operated the night service with a Viking, as it is doing at present under a provisional licence. It would help it to increase its utilisation of Vikings. We therefore recommend that the provisional licence should be converted into a term licence.)

**213. Indian National Airways.**—So far as Indian National Airways is concerned, its revenue per mile has been steadily falling during recent years. It was 84.2 annas per mile in 1947-48; 78.1 annas per mile in 1948-49; and 75.8 annas per mile in 1949-50. Even so, it is probably the highest in India. As in the case of Air-India, Indian National Airways' operating costs are high. They have, however, been steadily going down. They were 90.7 annas per mile in 1947-48; 86.8 annas per mile in 1948-49; and 79.4 annas per mile in 1949-50. It is possible that the reduction in the last year or two may be partly due to the fact that the Company has now stopped insuring its aircraft against flight operations. But with economy in other directions and further improvement in our relations with Pakistan, on which the revenue of Indian National Airways depends to an appreciable extent, its position should improve considerably. We suggest that a direct night service be instituted between Delhi and Calcutta, as we understand that the route organisation is now adequate for that purpose. Fortunately, Indian National Airways possesses Vikings which it is using on its direct non-stop day flight between Delhi and Calcutta. The grant of a licence to it also for a night service on that route would give the Company a much better utilisation for its Vikings. It will, we think, enable it to break even provided it brings down the costs to what we consider to be reasonable levels.

**214. Air Services of India—Deccan Air Services of India's present position.**—If Air Services of India and Deccan Airways merge, as we hope they will, their situation will improve considerably. Air Services of India operated its services in 1949-50 at the heaviest loss per mile in India. Its revenue during the three years steadily went down; it was 74.8 annas per mile in 1947-48; 67.7 annas per mile in 1948-49; and 52.2 annas per mile in 1949-50. Its operating costs were 71.3 annas per mile in 1947-48; 70.9 annas per mile in 1948-49; and went up to 74.8 annas per mile in 1949-50. Thus the loss for the year 1949-50 was 22.6 annas per mile. This was, in a large measure, due to the insufficient utilisation of the Company's SO-95s and the character of the short stages involved on its routes between Bombay and Saurashtra, which make the operating costs per mile comparatively high. The seasonal character of its traffic has also contributed to its losses.

**215. Deccan Airways' present posit on.**—Deccan Airways has made a gallant attempt during the last few months to improve its situation which was inherently difficult. It has made serious efforts to bring down its costs. Its costs were 51.6 annas per mile in 1947; 67.8 annas per mile in 1948; and 68.8 annas per mile in, 1949, but on the basis of the first three months' operations, they may come down to 58.9 annas per mile in 1950. There has been a noticeable reduction in the Company's indirect operating costs which came down from 15.4 annas per mile in 1949 to 10.5 annas per mile in 1950, the lowest in India. This means it has cut down its overhead expenses as much as possible. But there has been a precipitous fall in its revenue from 68.5 annas per mile in 1948 to 52 annas per mile in 1949 and 47.5 annas per mile in 1950. Its revenue is the lowest in the whole of India. Its fortunes were seriously affected by the institution of the night airmail service in October last year. It lost a very substantial portion of its mail revenue and a part of its passenger revenue.

**216. Position under the merger.**—A merger of Air Services of India and Deccan Airways would result in a unit with better prospects of economic operation. A re-arrangement of the frequencies and of the halts on its daily run between Delhi and Madras and some alterations in its Bombay-Hyderabad-Bangalore run may result in the elimination of any wasteful flying hours. It is intended, we understand, that the Delhi-Madras run should be *via* Gwalior, Indore, Nagpur and Hyderabad, and that it should be thrice-weekly, with one aircraft covering the routes in opposite directions on alternate days. Another proposal is that the Bangalore-Hyderabad-Bombay service should also run on a similar thrice-weekly basis and extend to Indore and connect with the Madras-Delhi service at Hyderabad and Indore on the respective days. By this re-arrangement, Air services of India's Bombay-Indore-Gwalior-Delhi service could be discontinued. We suggest that the Delhi-Madras night service should be assigned to the Air Services of India—Deccan merged unit. Deccan Airways, one of the units of the proposed merger, is already operating the day service on the route Delhi-Nagpur-Hyderabad-Madras and it will conduce to considerable economy if it also operates the night service. Such addition to its route mileage would enable it to get a much better utilisation of its aircraft and reduce its overall operating costs. Air Services of India's operation on the Bombay-Poona-Bangalore route with SO-95's seems to us to be most unattractive financially. This single run gives very little utilisation for the two machines owned by the Company and would therefore result in very high costs of operation. We suggest that the Company should seriously consider the question of disposing of these aircraft. We do not see any economic justification for continuing the Bombay-Poona-Bangalore service, as the new unit would still be operating the Bangalore-Hyderabad-Bombay service at present operated by Deccan Airways. (If it is thought necessary to retain Poona in the picture, this could easily be done by introducing it as an additional halt on the Bangalore-Hyderabad-Bombay service without involving much diversion.

**217. Airways (India).**—Airways (India) shows, on the whole, the best results in its operations. Its operating costs are probably the lowest in India. They were 57.3 annas per mile in 1947; 55.6 annas per mile in 1948; and 59.2 annas per mile in 1949. (On the basis of the first three months' operations this year, the Company hopes to achieve 51.4 annas per mile in 1950). As we have pointed out elsewhere, the figure for 1949 is fortuitously low. Some of the Company's aircraft and engines which were due for overhaul in 1949 were replaced by new equipment. This circumstance will increase its expenditure on overhaul during the current year. As we have mentioned in an earlier Chapter, the Company has also been able to secure and retain its staff at rates of pay somewhat lower than those of other operating companies. Airways (India)'s revenue has remained more or less steady. It was 58.1 annas

per mile in 1947; 60.2 annas per mile in 1948; and 60.7 annas per mile in 1949 and on the basis of the first three months' working this year, it should remain at 60.2 annas per mile in 1950. This last figure includes 56.3 annas per mile as direct transportation revenue. This revenue was exceptionally high this year because of the Assam operations which enabled Airways (India) to run many frequencies on its routes to North Bengal, Assam and Pakistan with a high load factor. Most recent advices from Calcutta, however, indicate that there has now been a falling off in this traffic. The Company has had to reduce its frequencies on the Calcutta-Bagdogra route and is now facing keen competition on its Calcutta-Gauhati route. The institution of the night service as operated by Himalayan Aviation has had serious consequences on its long route from Calcutta to Madras. It will be hard put to it even with its low cost of operations to break even. Having regard to the efficiency with which the Company has conducted its operations, we recommend that Airways (India) be given a licence to operate the night service on the Calcutta-Nagpur-Bombay route. Air-India is operating a daily Viking service between Bombay and Calcutta and it might therefore be thought that the night service may also be operated by it. There are, however, two reasons why this would not be a desirable course. Air-India does not stand in need of any additional route mileage, regard being had to the needs of other operators. It is already running a night service between Bombay and Delhi, and the operation of the night service between Bombay and Calcutta might be left to another operator, preferably to one based at Calcutta. We are therefore suggesting that the night airmail service between Calcutta and Bombay may be assigned to Airways (India). It may also be given the licence to operate the day stopping service Bombay-Nagpur-Calcutta which is now being operated by Indian Overseas Airlines. That service is at present a liability. Put in the hands of the operator who runs the night service on the route, it should be possible to improve the results considerably.

218. **Bharat Airways.**—The position of Bharat Airways is not altogether happy, and as shown in its balance sheet, its accumulated losses up to 30th June 1950 amount to about Rs. 20 lakhs. It has, however, made no provision for depreciation, which, under the normal rates allowed for income-tax purposes, would account for a further Rs. 40 lakhs, with the result that the accumulated loss would stand at about Rs. 60 lakhs against the paid-up capital of Rs. 80 lakhs. According to the figures furnished to us by the Company, its operating costs were 67.4 annas per mile in 1947-48; 57.3 annas per mile in 1948-49; and 64.5 annas per mile in 1949-50. These figures are somewhat unreal, for the reason that the accounts make no provision for depreciation. The Company's figures of its revenue are 62.8 annas per mile in 1947-48; 48.1 annas per mile in 1948-49; and 61.0 annas per mile in 1949-50. The heavy loss for 1948-49 of As. 9 per mile was due in a large measure to the purchase of and operations with the Skymasters. These aircraft appear to have been specially purchased for the external services to the East. We were informed by the Company that this step was taken on some kind of verbal assurance from the authorities of assistance from the State. These aircraft did not get sufficient utilisation and on this account and on account of the low load factor on the Company's external services between Calcutta and Bangkok, the operations have resulted in a heavy loss. Separate accounts of these operations are not being maintained. They form part of the accounts of the single unit of Bharat Airways operating both internal and external services. The licence to run the external service from Calcutta to Bangkok has just been extended to cover operations to Singapore and it is hoped that this will improve the financial results of the Company's external operations. The result of the Company's operations on the internal services during the first 3 months of 1950 show an improvement. But this is mainly due to the intensity of its

operations in Assam and to Eastern Pakistan since February this year. We do not suggest that any additional route should be given to Bharat Airways. But if, as we have recommended in the previous Chapter, the provisional licence of Kalinga Airlines is not renewed, Bharat Airways will get considerably more traffic on the Calcutta-Agartala route, on which Kalinga Airlines is at present operating freighter services at a high frequency. We notice that Indian National Airways has been given a temporary licence to operate on the route Calcutta-Patna-Khatmandu. Due to weather conditions, operations on this route have not yet commenced. We think it would be most appropriate to assign the route to Bharat Airways. Patna has already been connected with Delhi and Calcutta by the stopping service operated by Bharat Airways, and the traffic from both the directions could be most conveniently taken from Patna to Khatmandu by Bharat Airways, as it need only extend its stopping service from Patna to Khatmandu.

**219. Results of the redistribution.**—The results of this redistribution are as follows:—

- (1) All the scheduled operators would get contact with four or more important places in India and the adjacent countries. For example, Air-India, operating from Bombay, will have connections with Karachi, Delhi, Calcutta, Madras and Colombo. Indian National Airways, operating from Delhi, will have connections with Karachi, Lahore, Srinagar, Calcutta and Rangoon. Air Services of India-Deccan, operating from Hyderabad and Bombay, will have connections with Karachi, Delhi, Madras and Bangalore. Bharat Airways, operating from Calcutta, will have connections with Delhi, Chittagong, Bangkok and Singapore. Airways (India), operating from Calcutta, will have connections with Bombay, Madras, Bangalore and Dacca.
- (2) The above re-arrangement would not dispossess any of the term licence-holders of any of its existing routes.
- (3) The night services will be operated by four out of the five units, Air-India operating the Bombay-Delhi service, Indian National Airways operating the Delhi-Calcutta service, Air service of India—Deccan operating the Delhi-Nagpur-Madras service and Airways (India) operating the Calcutta-Nagpur-Bombay service.
- (4) The principle of "one route—one operator" would be implemented to the maximum extent practicable under the circumstances.
  - (a) The Bombay-Delhi route would be operated almost entirely by Air-India. It will have a day and a night Viking service and also a Dakota stopping day service. The competition from Air Services of India—Deccan would not be appreciable as its service from Bombay to Indore would run in conjunction with the stopping service Madras-Hyderabad-Nagpur-Indore-Gwalior-Delhi on alternate days and would thus cater primarily for sector traffic.
  - (b) The Delhi-Calcutta route would be operated mostly by Indian National Airways with a day and night Viking service. The Company's Vikings could be most usefully utilised in this way. Bharat Airways' day stopping service would be no real competition so far as through traffic was concerned. It serves most of the important towns in Bihar and Uttar Pradesh and is primarily intended for their benefit.

- (c) The Delhi-Madras run will be entirely in the hands of Air Services of India—Deccan. Deccan Airways is already operating the day stopping service. It would also be running the Delhi-Madras night service. There would be no competitor on that route and it will be free to develop it.
- (d) The Bombay-Calcutta service is at present in the hands of three operators. Air-India runs the day Viking service, Indian Overseas Airlines the day stopping Dakota service and Himalayan Aviation the night service. Under our proposals, there will be only two operators on this route, Air-India and Airways (India), one operating the day Viking service and the other operating the day and night stopping Dakota services.
- (5) So far as route mileage is concerned, the existing position is, and the future position would be, as follows:—

Company	Route mileage as on 1st July 1950	Under the pro- posed redistribution.
Air-India . . . . .	5,940	5,940
Indian National Airways . . . . .	3,880	3,880
Air Services of India—Deccan . . . . .	2,548 } 1,319 }	4,611
Airways (India) . . . . .	2,016	
Bharat Airways . . . . .	3,233	3,233

[TABLE No. 25]

There is no change in the route mileage of Air-India and the conversion of its provisional licence for the Delhi-Bombay night service into a term licence does not give it any additional route mileage as it is already operating a direct Viking service between Bombay and Delhi. It only amounts to adding a night frequency to its daily Viking service.

Similarly, in the case of Indian National Airways, the grant of a licence for night service between Delhi and Calcutta does not give it any additional route mileage, as it is already operating the Delhi-Calcutta non-stop Viking day service.

The present combined route mileage of Air Services of India and Deccan Airways is 4,367, and if the new merged unit is given the Delhi-Madras section of the night service, it would add 1,095 route miles, but the re-arrangement of the other services and the omission of the Bombay-Poona-Bangalore service would mean a reduction. The net result would, however, be an increase in route mileage which under our proposals would be 244 miles, bringing the total to 4,611 miles.

The increase in the route mileage of Airways (India) is due to the proposed grant of the Calcutta-Bombay section of the night service to it. The proposal to give it a licence for operating the day



stopping service between Bombay and Calcutta now operated by Indian Overseas Airlines would not give it any additional route mileage as this would only amount to an additional frequency on this stopping service.

There is no change in the route mileage of Bharat Airways as no additional route is proposed to be given to it. It will only get additional traffic on its Calcutta-Agartala route by reason of Kalinga Airlines going out of scheduled operations.

(6) So far as flying hours are concerned the position is as follows:—

Company	Hours flown during the latest year for which the Companies have submitted figures		Flying hours per year on the basis of scheduled operations on 1st July 1950	Flying hours under our proposals
	Year	Hours		
Air-India . . . . .	1949	28,061	28,629	26,629
I. N. A. . . . .	1948-49	10,323	13,333	16,131
A.S.I. . . . .	1948-49	7,935	6,474	14,375
Deccan . . . . .	1949	10,305	8,335	
Airways (India) . . . . .	1949	11,385	18,650	22,901
Bharat Airways . . . . .	1948-49	6,440	17,300	23,215

[TABLE No. 26]

The estimate with regard to flying hours under our proposals has been based mostly on the present time-tables of the respective companies for the various routes and their existing frequencies. Our proposals do not envisage Air-India doing any more or any less flying than it is actually doing at present. The increase in the case of Indian National Airways is due to our proposal to give it the Delhi-Calcutta night service. The combined flying hours of Air Services of India and Deccan Airways will be about 14,375 hours. We have already referred to the possibility of the Delhi-Madras daily service and the Bangalore-Hyderabad-Bombay daily service being converted into thrice-weekly services. On the other hand, the flying hours of the new unit would increase as a result of the proposal to give it the Delhi-Nagpur-Madras night service. In the case of Airways (India), there has been a considerable increase of flying this year by reason of the Assam operations. The further increase involved under our proposals is due to the addition of the day and night stopping services on the route Calcutta-Nagpur-Bombay. In the case of Bharat Airways, its flying hours will go up by 5915 hours, due to the freighter services now being operated by Kalinga Airlines becoming available to it.

The next point to be considered is the financial results of the reorganisation and before we proceed to examine these, it will be necessary to make an estimate of the revenue which the companies are likely to earn under the Scheme. The revenue depends on the passenger fares and freight and mail rates that are charged by the companies. We therefore consider in the following Chapter the question of the fixation of fares and freight and mail rates.

**Fixation of fares, freight rates and mail rates**

**220. Dependence of revenue of operating companies on tariff levels.**—In order to get a fairly correct picture of the financial position of the Industry, it is necessary for us to visualise what the income of the operating companies would be under the new set-up. Appendix XVII gives a comparison of the financial results of the operations of each of the companies during the first quarter of 1950 on the basis of (a) their cost of operation during the latest financial year for which figures were furnished to us, and (b) the standard cost of operation evolved by us, the revenue in both cases remaining the same, *viz.*, the actual revenue earned during that quarter. Under our Reorganisation Scheme, the amount of transportation performed by each unit would be different, and with it the revenue likely to be earned would change. The revenue would of course also depend on the tariffs in regard to passenger fares and freight and mail rates charged by the companies. In view of the fact that the revenue is very largely derived from passenger traffic, we proceed to consider what would be the proper level at which passenger fares should be fixed. Thereafter, we shall examine the question of freight and mail rates.

**221. Review of position relating to tariff structure prior to formation of Committee.**—It would probably be useful if we first briefly reviewed the position in regard to passenger fares and freight rates in the period following the end of the War. Prior to the establishment of the Air Transport Licensing Board, licences for scheduled operations were granted by the Director General of Civil Aviation who prescribed a maximum passenger fare of 4 annas per mile within which the actual fare to be charged was worked out by the operator and approved by the D.G.C.A. The freight rate was related to the passenger fare, the weight of a passenger together with the baggage allowance of 44 pounds being taken as 200 pounds, and was fixed at  $\frac{1}{2}$ % of the passenger fare per pound of freight, with exceptions in certain cases. These rates were approved by the Air Transport Licensing Board which was set up in October 1946 and were continued until 1st December 1947 when the companies were allowed to increase the actual fares then in force by 10 per cent. where the increased fares did not exceed the maximum of 4 annas per passenger mile. Higher fares than 4 annas were, however, permitted on certain short sectors in recognition of the generally higher level of costs on such sectors. With effect from 15th April 1948, permission was given for the raising of fares upto the 4 annas limit and passenger fares which were already in excess of 4 annas were allowed to remain unchanged. Similarly, freight rates were allowed upto a maximum of  $\frac{1}{2}$ % of the passenger fare per pound, but rates already fixed in excess of that limit were allowed to remain unchanged.

**222. Position after 1st July 1949.**—With effect from 1st July 1949, a minimum of  $2\frac{1}{2}$  annas per passenger mile was introduced, the maximum being retained at 4 annas as before. Minimum and maximum limits were also prescribed for freight rates which were allowed to vary between  $\frac{1}{4}$ % and  $\frac{3}{8}$ % of the passenger fare for each pound of freight. The special rates charged on certain sectors were, however, allowed to continue and the actual fares and freight rates in all cases were subject to the prior approval of the Licensing Board. On the introduction of the night air services from 15th October 1949, the passenger fares on these services between any two points were fixed at the first class railway fare by the direct route *plus* 12 $\frac{1}{2}$ %, but not lower than  $2\frac{1}{2}$  annas per passenger mile by the direct air route. The freight rates on these services were the same as those for the day services on the same routes. The next change took place on 7th November 1949 when discretion was given to the operating companies to introduce any passenger fare between 3 annas and

4 annas per passenger mile subject to subsequent approval or alteration thereof by the Board. Where the operating companies wished to introduce fares lower than 3 annas or higher than 4 annas per passenger mile, they were required to obtain the prior approval of the Board.

223. **Freight rates delinked from passenger fares.**—With effect from 3rd December 1949, the Board delinked the freight rates from the passenger fares and gave discretion to the operating companies to introduce any freight rate between 14 annas per ton-mile and Rs. 2/12/- per ton-mile, subject to subsequent approval by the Board. The prior approval of the Board was, however, necessary in the case of services operating on foreign routes including the Indo-Pakistan, Indo-Ceylon and Indo-Burma routes.

224. **Effects of the changes in tariff levels on the revenues of the companies.**—We have examined the effect of the above changes in rates on the volume of traffic and revenues of the various companies and we are in a position to say that, except for the introduction of Himalayan Aviation's night services in October 1949, the changes had no adverse effect on the revenues of the companies. Air-India has mentioned that its night Viking service on the Bombay-Delhi route introduced from 1st March 1950 on a reduced fare of Rs. 118 is operating on a high load factor without affecting the traffic on its day services for which the fares are considerably higher. Air Services of India and Indian National Airways did not experience any marked changes in their revenue position while the effect in the case of Bharat Airways was generally good. The introduction of the night services in October 1949 hit Deccan Airways rather badly but even in the case of this Company, any changes in its revenue position until then were not due to the changes in the tariff.

225. **Factors to be borne in mind in fixation of passenger fares.**—It has been represented to us by all the operating companies except Himalayan Aviation that the fares allowed to be charged by the latter Company, based on First Class Railway fare by the direct route plus 12½%, are unduly low, having regard to the costs of operation, and that the forces of competition have compelled the other operators to bring down the fares on several of their routes below the economic level. The fixation of a proper level of passenger fares must necessarily take into account the costs of operation with the addition of a reasonable profit, but it must also take into account the capacity of the traveller to pay, the need for expansion of air traffic and increasing air-mindedness in the country and the prevailing rates for surface transport. In Chapter 5, where we have studied the costs of operation of the different types of aircraft now in this country we have shown that at a 65% load factor, the cost of operation of a Dakota works out to 3.39 annas per seat mile for 1500 hours utilisation. In other words, to break even without making any provision for profit, the passenger fare would have to be fixed at 3.39 annas per mile. In the case of a Viking, the corresponding fare would be 3.5 annas per mile. The operating companies have suggested fares ranging from 3 to 5 annas per mile, but they all recognise that a fare in excess of 4 annas may prove to be deterrent to air travel. From the point of view of nationalised railway transport, the State cannot subsidise air transport to undersell the State Railways while the costs of air transport are higher. For the convenience and the saving of time and of certain incidental advantages secured through air travel, the air passenger must be prepared to pay more than the cost of First Class travel by rail.

226. **Levels of fares to be such as to give a 10 per cent. return on investment of operator.**—The basis on which we have proceeded is to find out in the first instance what should be the margin (between revenue and operating costs) per ton-mile of transportation performed by each company which would enable it to earn a gross profit of 10% on its reasonable capital investment. We have then ascertained what the profit must be in respect of each route, and added that amount to the reasonable cost of operation of that particular route. Having thus arrived at the revenue which has to be earned for giving the desired margin of profit, we have calculated what it amounts to in terms of rupees per ton-mile in proportion to the ton-miles of traffic expected on it. On that basis, we have calculated what the passenger fare will have to be in order to enable the company to earn that rate of revenue. This is the manner in which Air India has made its calculations in replying to Question 9(ii) of our Questionnaire, and we think that that basis of calculation is sound.

227. **Estimation of capital investment for each operator.**—We have tried to estimate in respect of each company what would be the necessary capital investment required, in our opinion, for its operations. For instance, in the case of Air-India, we have assessed that the fleet that it requires after making provision for reserves, is 9 Dakotas and 7 Vikings and the required capital to be Rs. 27 lakhs for the 9 Dakotas and Rs. 70 lakhs for the 7 Vikings. We shall indicate on what basis we have assumed the capital to be Rs. 3 lakhs in respect of each Dakota and Rs. 10 lakhs in respect of each Viking.

	Rs.
Capital cost of 10 Dakotas @ Rs. 1,33,800 for each Dakota . . . . .	13,38,000
10 spare Power Plants @ Rs. 16,000 each . . . . .	1,60,000
Airframe and other spares partaking of the nature of fixed capital assets on the basis of 20% of the cost of the aircraft . . . . .	2,67,000
Other capital expenditure in the shape of hangars, buildings, furniture, vehicles, workshop equipment etc. . . . .	12,50,000
	<hr/>
TOTAL . . . . .	30,15,000
	<hr/>
Or . . . . .	3,00,000
	in respect of each Dakota.

The other items of expenditure required for running the service, including the cost of consumable spares, would go to constitute the costs of operating the aircraft and would be reflected in the reasonable costs of operating the aircraft per mile. The fixed capital assets therefore may fairly be calculated on the basis of Rs. 3 lakhs per Dakota.

Similarly, for a Viking, we have made the estimate as follows:—

	Rs.
Cost of 10 Vikings @ Rs. 6.69 lakhs per Viking . . . . .	66,90,000
10 spare Power Plants @ Rs. 67,000 each . . . . .	6,70,000
Airframe and other spares partaking of the nature of fixed capital assets on the basis of 20% of the cost of the aircraft . . . . .	13,38,000
Cost of hangars, buildings, furniture, vehicles, workshop equipment, etc. . . . .	12,50,000
	<hr/>
TOTAL . . . . .	99,48,000
	<hr/>
Or . . . . .	Rs. 10 lakhs in respect of each Viking.

228. **Explanation of the statements in Appendix XVIII.**—The necessary calculations for arriving at the reasonable levels of fares are shown in Appendix XVIII. Taking the case of Air-India, we find that the required capital is Rs. 27 lakhs for 9 Dakotas and Rs. 70 lakhs for 7 Vikings. The total capital therefore is Rs. 97 lakhs. Columns 1 to 4 of the statements in Appendix XVIII detail respectively the routes, frequency, equipment used, and flying hours operated. Column 5 gives the capacity-ton-miles operated on each route. Column 6 gives the load factor actually attained during the first quarter of 1950 and column 7 the load factor which we have assumed as reasonable under the Scheme. The latter closely follows the figure in column 6, but we have made slight variations where we considered that the potentialities of the traffic justified those alterations. These variations were adopted as a result of two considerations—(a) we estimated that, in respect of some routes, a small alteration in either direction would be justified by the probable trend of traffic; and (b) where the load factors were high, we were of the opinion that either those load factors could not be maintained for any length of time or the operating company may have to put on an additional frequency, on a daily, twice-weekly or thrice-weekly basis, with the result that there will be a reduction in the combined load factor. Column 8 gives the probable traffic on the basis of the reasonable load factor assumed. The total under this column for each company gives the total transportation that company will perform in a year under our Scheme. In the case of Air-India, this figure comes to 6,873,200 ton-miles. In order to make a profit of 10% in its capital of Rs. 97 lakhs i.e., Rs. 9,70,000, Air-India will have to earn a profit on its operations at the rate of Rs. 0.141 per ton-mile of transportation performed by it. Column 9 of the statement gives the reasonable cost per hour for the particular type of aircraft used. This figure is got by first working out the Company's utilisation hours per year for that type of aircraft (total hours flown with that type of aircraft by the company during the year divided by the total number of that type of aircraft) and reading off the cost of operation for that utilisation from Charts Nos. 4A to 4D in Appendix XV. In the case of Air-India, for instance, the total Dakota hours and Viking hours under our scheme would amount to 14,492 and 12,137 respectively, so that the utilisations would be  $14,492 \div 9$  or 1,610 hours in the case of Dakota and  $12,137 \div 7$  or 1,731 hours for Viking. The corresponding reasonable costs of operations are Rs. 562 per hour and Rs. 758 per hour, respectively. Column 10 gives the total cost of operation on that route, on the basis of the reasonable cost. Column 11 indicates the reasonable profit to be earned on that route (transportation ton-miles on that route multiplied by the required profit per ton-mile.). Column 12 gives the total revenue required to be earned on the route to give that profit (the sum of the figures in columns 10 and 11). Columns 13 and 14 give the corresponding revenue in terms of annas and rupees per ton-mile of transportation and the final column, the passenger fare per mile to be charged to give that revenue.

229. **Calculation of fare for Air-India's Bombay-Calcutta non-stop service.**—On Air-India's Bombay-Calcutta Viking service, on the assumed reasonable load factor of 75%, we expect that there will be a traffic per year of 1,138,500 ton-miles. On the basis that the Company will have to earn a profit of Rs. 0.141 per ton-mile, this particular route must yield a profit to Rs. 1,60,500. On the basis of our reasonable costs of operation, the cost of working the route will be Rs. 30,92,000. In order to enable the Company to earn a profit of Rs. 1,60,500 on the route, the total revenue to be earned must be Rs. 32,52,500. That indicates that the revenue must be earned on a scale of Rs. 2.86 per ton mile. This gives us the passenger fare of As. 4.09 per mile. We actually find that the present passenger fare on that service is

As. 3-4 per mile. This leads one to the conclusion that the charge at present made per passenger mile is too low, as it is not sufficient to give the Company the necessary profit margin over the reasonable cost of operation of that route. On the other hand, fixation of a fare over 4 annas a mile on the internal trunk routes might act as a deterrent to traffic. Even a too sudden rise of the fare to 4 annas a mile from the present fare may not be entirely desirable.

230. **Drawing up of range of fares for the routes in India and to neighbouring countries.**—We have made similar calculations for every one of the routes of all the scheduled airlines and have indicated what in respect of each route should be the revenue per ton-mile and the equivalent fare per passenger mile in order that each route may give the operating company concerned a profit of 10% on its capital cost on the basis of reasonable costs of operation for that route, *vide* the statements in Appendix XVIII. We notice that in some cases the estimated reasonable charge per passenger mile does not differ materially from the fare at present in force. But there are instances where the fare requires to be altered in one direction or the other. For instance, in the case of the Bombay-Delhi night service, the reasonable fare charge for a passenger would be As. 3-32 per mile, whereas the present fare is only 25 annas a mile. Obviously the present charge is uneconomical and has to be raised. On the other hand, in the case of the Bombay-Delhi day service, for instance, the reasonable passenger fare is 3-32 annas per mile, while the present fare works out to Rs. 3-96 annas per mile. There is therefore a case for reducing the fares on that route. In the case of sector fares on the Delhi-Amritsar-Jammu-Srinagar route the reasonable fares calculated on the above basis are above four annas per mile. We do not think that on the whole, as a general rule, the maximum fare on the internal trunk routes should be more than annas 4 a mile. But there may be special cases. For instance, in the case of traffic between Bombay and Kathiawar, there is justification for permitting a higher fare on account of the convenience offered to the passengers when compared with the difficulties of surface travel. On these considerations we have worked out the ranges of fares on the various routes in respect of each company; a statement of these fares will be found in Table 27. It will be seen that the routes divide themselves for the purpose of fares into three categories: the first category includes the inland trunk routes, for which the reasonable fare, in our opinion, may vary from 3½ as. to 4 as. per mile; the second category consists of routes where the reasonable passenger fare may vary between 3½ and 4½ annas per mile; and the third category comprising international routes and sectors on the Delhi-Amritsar-Jammu-Srinagar and Bombay-Kathiawar-Karachi routes where the reasonable fare may vary between 4½ and 5½ annas a mile. There are also some routes on which there is a certain amount of competition. We have had instances brought to our notice where in order to attract traffic, fares have been lowered to such an extent as to make the working of that route uneconomical. We have also got to consider the fact that in some instances the competition lies between a direct fast service and a slower stopping service. It has been the general practice to permit the stopping service to charge a slightly lower rate for a through passenger in order to enable it to compete with a fast direct service. For this purpose we have suggested certain fares on those competitive routes for both kinds of operations.

#### *Ranges of Fares*

##### FARE RANGE OF 3½ TO 4 AS. PER MILE.

###### *Air-India.*

Bombay-Calcutta . . . . .	Direct service . . . . .	(Fare fixed @ Rs.243)
Bombay-Delhi . . . . .	Day direct service . . . . .	(Fare fixed @ Rs. 165).
Bombay-Delhi . . . . .	Night direct service. . . . .	(Fare fixed @ Rs. 165).
Bombay-Dehi . . . . .	Stopping service . . . . .	(Fare fixed @ Rs. 155).

Bombay-Colombo . . . . .	Direct Service	(Fare fixed @ Rs. 150).
Bombay-Madras . . . . .	Direct Service	(Fare fixed @ Rs. 150).
Madras-Trivandrum . . . . .	Direct Service	(Fare fixed @ Rs. 150).
<b>Indian National Airways.</b>		
Delhi-Calcutta . . . . .	Day Direct service	(Fare fixed @ Rs. 203).
Delhi-Calcutta . . . . .	Night Direct service	(Fare fixed @ Rs. 203).
<b>Air Services of India-Deccan</b>		
Delhi-Madras . . . . .	Night service	
Delhi-Gwalior-Indore-Nagpur-Hyderabad-Madras.		For Delhi-Madras through passengers, the rate may be on the direct distance.
Bangalore-Hyderabad-Bombay-Indore.		For Bangalore-Bombay through passengers, the rate may be on the direct distance.
Bombay-Madras . . . . .	Stopping service	(Fare for Bombay-Madras through passengers fixed at Rs. 140/-).
<b>Airways (India).</b>		
Calcutta-Madras-Bangalore . . . . .		
Calcutta-Bombay . . . . .	Day stopping service	(Fare for Calcutta-Bombay through passengers fixed at Rs. 220).
Calcutta-Bombay . . . . .	Night stopping service	(Fare for Calcutta-Bombay through passengers fixed at Rs. 220/-).
<b>Bharat Airways</b>		
Calcutta-Delhi . . . . .	Stopping service	(Fare for Calcutta-Delhi through passengers fixed at Rs. 185/-).
<b>II. FARE RANGE OF 3½ TO 4½ As. PER MILE.</b>		
<b>Air-India</b>		
Bombay-Karachi . . . . .		Non-stop.
Bombay-Karachi . . . . .		Stopping service.
<b>Indian National Airways</b>		
Delhi-Karachi		
Delhi-Lahore		
Delhi-Srinagar		
Delhi-Amritsar-Jammu-Srinagar . . . . .		(In respect of Delhi-Srinagar through passengers only).
<b>Air Services of India-Deccan.</b>		
Bombay-Kathiawar-Karachi . . . . .		(In respect of Bombay-Karachi through passengers only).
Bombay-Rajkot.		
<b>Airways (India)</b>		
Calcutta-Bagdogra		
Calcutta-Gauhati.		
<b>Bharat Airways</b>		
Calcutta-Delhi . . . . .		Stopping route (in respect of the Sector passengers).
Calcutta-Agartala-Gauhati.		
<b>III. FARE RANGE OF 4½ TO 5½ As PER MILE.</b>		
<b>Indian National Airways.</b>		
Calcutta-Rangoon.		
Delhi-Amritsar-Jammu-Srinagar. . . . .		(In respect of Sector fares).
<b>Air Services of India. 1</b>		
Bombay-Kathiawar-Karachi . . . . .		(In respect of Sector fares).
<b>Airways (India)</b>		
Calcutta-Dacca		
<b>Bharat Airways</b>		
Calcutta-Chittagong		

*Competitive Routes*

The following fares should be fixed for through passengers :—

	<i>Non-stop.</i> Rs.	<i>Stopping.</i> Rs.
Bombay-Calcutta Services . . . . .	243	220
Delhi-Bombay services . . . . .	165	155
Delhi-Calcutta services . . . . .	203	185
Calcutta-Gauhati services . . . . .	72	70
Bombay-Madras services . . . . .	150	140

[TABLE No. 27]

231. **Levels of fares intimately linked up with assumed load factors.**—We would specially emphasise that the levels of fares which we have recommended are intimately linked up with the load factors we have assumed as reasonable. Any appreciable drop in load factors would necessitate a review of the fare structure.

232. **Further lowering of fare levels possible only if there is reduction of price levels all round.**—We consider that the fare levels we have suggested should be attractive to the travelling public without being a burden on the operator or competing unfairly with Railway Transport. In relation to railway fares they are comparable with fares charged in other countries. In the present state of Government's finances which cannot afford to subsidise air transport except to a very limited extent, we find ourselves unable to recommend any lower fares, much as we would wish to see air travel brought within the reach of an increasingly large section of the people. Any further lowering of fares can only result from increased efficiency of air transport operations and a general lowering of price levels all round.

233. **Freight rates.**—As regards freight rates, we consider that they should be related to the passenger fares for each route and made subject to a maximum of  $\frac{1}{2}$ % of the passenger fare. We do not think there is any need to fix a minimum.

234. **Mail rates—Position prior to 1st April 1949.**—The mail rate as originally fixed by Government in 1946 for all internal services except Indian National Airways, Delhi-Karachi and Air-India's Karachi-Colombo services was Rs. 1-8-0 per pound. In the case of Air-India, under a mail contract concluded in 1938 the payment for carriage of mail on the Karachi-Colombo route was a guaranteed minimum of Rs. 15 lakhs per year with an additional payment of Re. 1/- per pound for mail loads in excess of 500,000 pounds carried during the year. This minimum payment was continued upto 30th June 1948 but from 1st July 1948, the guaranteed minimum was reduced to Rs. 10 lakhs subject to the clause that if payment calculated on the following basis worked out higher than the minimum, then the higher amount would be payable:—

- (i) at the rate approved by the Air Transport Licensing Board for internal services for all mails carried within Indian limits;
- (ii) an additional payment of 8 annas per pound for mails carried to and from Pakistan and Colombo to points in India and between Pakistan and Ceylon.



In the case of Indian National Airways, Delhi-Karachi service, under a similar mail contract the remuneration was a guaranteed minimum of Rs. 3,25,000 per annum up to a limit of 1,30,000 pounds per year. For any mails in excess of this limit the rate was Re. 1/- per pound. The minimum payment was reduced to Rs. 1 lakh from 1st June 1949, for a frequency of 3 services a week and Rs. 1½ lakhs for a daily frequency. In respect of all the other routes and all other companies, the rate was Rs. 1-8-0 per pound irrespective of distance. In the case of the Calcutta-Rangoon service, however, the rate for the carriage of mail was fixed at Rs. 2/- per pound on account of the hazardous nature of the route. The rate of Rs. 1-8-0 per lb. was formally approved by the Air Transport Licensing Board when it came into existence.

235. **Change in mail rates when All-up Mail Scheme was introduced.**—From 1st April 1949, under the All-up mail scheme the mail rates were linked to freight rates. The mails were classified as letter mails and parcel mails, the former to be charged at freight rate plus 25 per cent. and the latter at freight rate minus 25 per cent. The present position, therefore, is as follows:—

<i>Particulars of routes and services.</i>	<i>Mail rates.</i>
(a) Internal services other than Indo-Ceylon, Indo-Pakistan and Indo-Burma services.	First Class mails, i.e., letters and post cards—25% over the freight rate per lb. by actual route flown. Air Parcels—25% below the freight rate per lb. by actual route flown.
(b) Air-India's Indo-Ceylon, Indo-Pakistan and Ceylon-Pakistan sections.	8 annas per lb. over the corresponding internal rate subject to a guaranteed minimum annual payment of Rs. 10 lakhs.
(c) Other Indo-Pakistan and Indo-Burma routes.	Rs. 6-1-1 per ton-mile corresponding to the rate paid to B.O.A.C.
(d) Other Indian external services	Rs. 6-1-1 per ton-mile. For Second Class mails, a rate of Rs. 3-0-6 per ton-mile has been accepted by Air-India International for the Bombay-London service i.e., the same rate as for Second Class mail paid to B.O.A.C.

[TABLE No. 28]

236. **Mail rates in other countries.**—In this connection, it will be useful to refer to the practice followed in the matter of mail payments in the U.S.A., Canada, U.K., and Australia.

The Post Office in the U.S.A. is regarded as a public utility department and is not expected to be self-supporting. It is actually working at a deficit. The payment to air carriers for the carriage of mails is regulated under Sections 405 and 406 of the Civil Aeronautics Act of 1938. In fixing the rate of payment, the Civil Aeronautics Board takes into consideration factors other than mail, as specified in Section 406(b) of the Act, which is reproduced below:

“In fixing and determining fair and reasonable rates of compensation under this section, the Authority, considering the conditions peculiar to transportation by aircraft and to the particular air carrier or class of air carriers, may fix different rates for different air carriers or classes of air carriers, and different classes of service. In determining the rate in each case, the Authority shall take into

consideration, among other factors, the condition that such air carriers may hold and operate under certificates authorizing the carriage of mail only by providing necessary and adequate facilities and service for the transportation of mail; such standards respecting the character and quality of service to be rendered by air carriers as may be prescribed by or pursuant to law; and the need of each such air carrier for compensation for the transportation of mail sufficient to insure the performance of such service, and, together with all other revenue of the air carrier, to enable such air carrier under honest, economical, and efficient management, to maintain and continue the development of air transportation to the extent and of the character and quality required for the commerce of the United States, the Postal Service, and the national defence."

Different rates could be fixed for different carriers for different routes and for different classes of service. The Post Office merely functions as an agency for the passing of a Government subsidy to Civil Aviation. There is no All-up air mail system in the U.S.A., air mail surcharge being applied at a rate equivalent to 66½ per cent. of the surface postage rates.

Rates for the conveyance of mails in Canada are negotiated directly by the Post Office with licensed air transport operators. Only such services are utilised by the Post Office as offer sufficiently attractive carriage rate. There is a limited internal All-up service in Canada under which all First Class mails within the first weight category are conveyed by air where it is advantageous to do so.

In the United Kingdom the payment made to an air operator for the carriage of mails is based on the operator's published charges for the carriage of ordinary air cargo and is at a rate per pound of mail actually conveyed. The principle of affording air transmission to all First Class mails wherever it is advantageous to do so has been adopted in the U.K., both in the internal and European services.

In Australia, payments to air operators for the carriage of mail are arranged by the Department of Civil Aviation which receives from the Postmaster General's Department substantially the whole of the revenue collected by way of airmail surcharge fees which are applied at a rate equivalent to 120 per cent. in addition to the normal surface postage rate. By far the greater proportion of this money is distributed to operators by means of lump sum payments. Trans-Australia Airlines which in 1949 carried 86.5 per cent. of the total mail ton-miles of the Australian domestic operators received a payment of approximately £A.400,000 and carried 1,081,467 ton-miles of mail. The corresponding equivalent rate per ton-mile works out to 81.2 d. or Rs. 3-9-1 per ton-mile, which is 107 per cent. above the passenger rate and, therefore, represents an appreciable amount of subsidy. Next in order of magnitude, other lump sum payments conditional only upon the scheduled mileage being flown (and not in any way dependent on the amount of mail carried) were made to Airlines W.A. Ltd., a developmental route serving inland areas. MacRobertson-Miller Aviation Ltd., serving the sparsely inhabited area of North-West Western Australia, and Connellan Airways, operating from Alice Springs in Central Australia a network of routes serving isolated cattle stations with very limited traffic potential but no regular means of surface transport. In the case of all three of these operators, the ton-miles of mail carried were quite small, so that the payments represent very largely a direct subsidy. Certain small payments were also made on a pound-mile basis, notably to Australian National Airways. Lump sum

payments are made on the understanding that the operator carries, without extra payment, all mail offered by the Post Office, whether bearing airmail surcharge or not, particularly during emergencies such as interruptions of surface mail routes due to floods, etc. There is no All-up mail system in Australia.

**237. Submissions of the operating companies.**—As regards the basis of fixing mail rates, it has been represented by Air-India that mails can bear a much higher rate than freight rate plus 25 per cent. The Company has referred to the  $\frac{1}{2}$  anna increase in the postage rate for the letter mail when the All-up scheme was introduced and has claimed that that proportion of the additional revenue represented by this increase in respect of the mails carried by air should be made available to the operators carrying the mail. The Company has also contended that a higher rate is justified on the ground that mails are given priority of transmission and that they occupy weight for weight more space than baggage though we are doubtful about the latter argument. Air Services of India considers that payment for mails should be on a purely economic basis, while Airways (India) has suggested that out of the extra amount of Rs. 1-14-0 per pound collected by the Post Office (on the basis of 60 letters to the pound), the Post Office should retain 25 per cent. and pay the balance to the air company on a ton-mile basis to be fixed by the Licensing Board. Indian National Airways has suggested that mail rate should be fixed on the basis of half a per cent. of 4 annas per passenger mile plus  $33\frac{1}{3}$  per cent. which gives Rs. 3-12-0 per ton-mile. These arguments pre-suppose that the increase in the postage rate in 1949 at the time of the introduction of the All-up scheme was to offset the increased cost of air transport. It has been pointed out to us by the Director General, Posts and Telegraphs, that this presumption is not correct and that the postage rate was raised because the cost of handling had gone up progressively following the introduction of revised pay scales and that this had nothing to do with the policy of carrying all First Class mails by air within India wherever practicable,

**238. Point of view of the Director General, Posts and Telegraphs that mail rate should be same as cargo rate.**—As against the views of the companies, the Director General, Posts and Telegraphs, has pointed out that the rates for the carriage of mails should be directly related to the value of the service rendered, and that considerations like the ability to bear a higher rate or that the Department is recovering larger amounts should not affect the question. He also said that the mail rate should not contain any element in the nature of subsidy. Mail has to be regarded as priority traffic, but there is no justification to claim any higher rate of payment on this account since priority depends on the nature of the traffic and should not be charged for. Insured articles are not going by air at present and the responsibility of air companies in respect of mails is not more than that of a common carrier of goods or the obligations laid on air companies under the Carriage of Goods by Air Act. The D.G., P. & T. added that mails on the other hand have certain features which make them more attractive to the carrier than cargo or passenger. For instance, an assured load is offered every day. Air carriers do not have to provide surface transport to and from airports, catering and service charges do not have to be incurred, no advertising and publicity expenses are entailed and no middle men or agents have to be employed. On the above grounds, the P & T. Department has expressed the view that First Class mails should not have to pay a higher charge than air freight. They have, however, suggested that the rate should be fixed on a stable ton-mile basis and should not fluctuate with variations in the situation of supply and demand or depend upon the vagaries of air carriers.

239. **D. G., P. & T's suggestion for Mail rate for Second Class mails.**—For Second Class mail like newspapers, printed papers, book and sample packets, which is of considerable educational and instructional value, the surface postage rate is only 1/8th of the First Class mail rate. Second Class mail is not included in the All-up scheme and is carried by air only if it bears a surcharge. In the interests of the public and for speedier and wider dissemination of information, the P. & T. Department feels that the surcharge should be low enough to attract such traffic to transport by air. The P. & T. Department has accordingly suggested that the rate for printed papers should be fixed at 25 per cent. below the First Class mail rate. The final rate should, of course, be on a flat ton-mile basis. For inland parcels, the D. G. P. & T. has suggested the same rate as for printed papers and pointed out that the Universal Postal Union has also expressed the same view.

240. **Mail rate for carriage by external services.**—In respect of foreign services, it has been contended by Air-India International that the rate should be the rate fixed by the Universal Postal Union, *viz.*, 6 gold francs per tonne-kilometer which is equivalent to Rs. 15-4-0 per ton-mile at the current rates of exchange. We have been informed, however, by the D. G. P. & T. that this represents the maximum rate fixed for the settlement of air mail accounts between different Administrations and that in any case, the rate at which an Administration should pay its air carrier has always been regarded as a domestic question to be settled by each Administration. The D. G. P. & T. has suggested that the conveyance charges should be related to the freight rates and fixed on a flat ton-mile basis. There is, however, an element of competition and the present rate of payment to our external air services all of which operate on routes parallel to the B.O.A.C. net work is the same as that paid to E.O.A.C., namely, 0-52 pie per pound per mile or Rs. 6-1-1 per ton-mile for First Class mails. The rate fixed should not, according to the D. G. P. & T., exceed this figure so long as the B.O.A.C. services ply on the routes and quote those rates. For printed papers and newspapers, the rate payable to B.O.A.C. and A.I.I. is 0-26 pie per pound per mile or Rs. 3-0-6 per ton-mile, being half the letter mail rate, and the same rate has been suggested for air parcels also.

241. **Mail rate to be 12½ per cent. over reasonable freight rate.**—We have given careful consideration to the views of the operating companies and the D. G. P. & T. We agree that there is considerable force in the point of view put forward by the P. & T. Department that the payment for mails should be at a negotiated commodity rate not containing any element of subsidy. At the same time we feel that, in arriving at this rate, a small allowance should be made for the fact that mails have to be given priority of transmission irrespective of any variations in the volume of mails that has to be carried from day to day. It is true that these variations in actual practice take place within certain narrow limits, but the possibility of variation is there and has to be allowed for especially as it is not possible for the P. & T. Department to guarantee a minimum or maximum load. This allowance, we consider, may take the form of an increase of 12½ per cent. over what may be regarded as a reasonable freight rate on the inland air routes.

242. **Mail rate for First Class mails to be Rs. 3-1-0 per ton-mile.**—We have recommended in paragraph 230 of this Chapter the minimum and maximum passenger fares for the inland air routes and also the maximum rate for freight. It will be seen that the passenger fares vary from a minimum of 3¼ annas to a maximum of 4½ annas, and that, so far as freight is concerned, there is only a maximum of ½ per cent of the passenger fare. (The fares on some short sectors may go upto 5½ annas, but this may be ignored). In actual practice, therefore, the freight rate may vary considerably from route to route and may

also be revised from time to time by the operating companies within the prescribed limit. We think it desirable, however, that the mail rate should not be dependent on such variations and that it should be uniform for all the operating companies. This uniform rate we suggest should be based on a freight rate of  $\frac{1}{2}$  per cent. of the arithmetical mean of the minimum fare of  $3\frac{1}{2}$  annas and the maximum of  $4\frac{1}{2}$  annas per passenger mile. This gives us a freight rate of

$$\frac{3\frac{1}{2} + 4\frac{1}{2}}{2} \times \frac{2240}{200} = 43.4 \text{ annas per ton-mile and a mail}$$

rate on the basis of our recommendations of  $\frac{43.4 \times 9}{8} = 49$  annas or Rs. 3-1-0 per ton-mile.

243. **Mail rate for Second Class mails to be Rs. 2 per ton-mile.**—For Second Class mails like printed papers and newspapers, as also parcels, we suggest that a suitable rate would be the freight rate of 43.4 annas arrived at in the previous paragraph reduced by 25 per cent. This gives a rate of Rs. 2 per ton-mile. We understand that a rate of Rs. 2-14-0 per ton-mile for First Class and a rate of Rs. 1-11-6 per ton-mile for Second Class mail have been offered by the P. & T. Department to the operating companies, but that these rates have not been accepted by some of the companies. According to our recommendations, the rates for First Class and Second Class mails will be Rs. 3-1-0 per ton-mile and Rs. 2 per ton-mile respectively.

244. **Mail rates for international services.**—In regard to Indo-Ceylon, Indo-Pakistan, Ceylon-Pakistan and Indo-Burma routes, we do not see any reason why the international rate should be applied over these short distances which are only technically external routes. On the other hand, we do appreciate that it may not be quite correct to treat them on a par with internal services. We are, therefore, of the view that the mail rate over these services may be fixed at 50 per cent. over the internal rate viz., Rs. 4-9-6 per ton-mile for First Class mails and that the rate for Second Class mails and parcels may be fixed at 25 per cent. over the internal rate i.e. at Rs. 2-8-0 per ton-mile. In respect of other Indian external services, the rates for First Class as well as Second Class mails and air parcels may be the same as those paid to B.O.A.C.

## CHAPTER 9

### Financial Results of the Reorganisation

245. **Comparison of the financial results of the companies for the first quarter of 1950 on the basis of their actual cost and on reasonable costs.**—Having estimated (i) the reasonable cost of operation in respect of the different types of aircraft, (ii) the volume of traffic in ton-miles that may be expected on each of the routes of the various companies under our Scheme of operation and (iii) the reasonable fares on those routes, we are in a position to make a fairly accurate estimate of the financial results of the operations of the companies under our scheme. We have prepared two sets of statements which will be found at Appendices XVII and XIX. The first set of statements shows the financial results of the operations of the companies during the first quarter of 1950 on the basis of their operating costs for the year 1949 (in some cases it is for the year 1948-49 or 1949-50) and also gives an estimate of what they would be if the costs were brought down to the level of our standard costs. The first four columns of the statements give respectively the details of the routes, the equipment used, the number of trips actually operated during the first quarter of 1950 and the hours flown. The next three columns show the capacity ton-miles operated, actual revenue ton-miles of traffic carried and the percentage load factor. Column 8 indicate the cost of operation for the period on the basis of the cost level attained by the company concerned during the latest

financial year for which the company has submitted figures to the Committee. Column 9 gives the cost on the basis of our standard costs of operation. These standard costs have been taken for utilisations arrived at on the basis of hours flown per year on the present scale of operations of the companies. Column 10 gives the actual revenue earned during the first quarter of 1950 (except in the cases of Indian National Airways and Bharat Airways where the figures are based on the revenue for the 9 months ended 31st March 1950) and column 11 the rate of revenue earned per ton-mile of transportation performed. Columns 12 and 13 show the financial results of the companies' operations on their 1949 level of cost (or 1948-49 or 1949-50 level of cost as the case may be) and columns 14 and 15 on our standard costs.

**246. Result of such comparison for each company.**—In the case of Air-India, it will be seen that on the basis of the 1949 level of cost the Company's operations (without taking non-transportation revenue into account) would have resulted in a loss of Rs. 15 lakhs for the first quarter of 1950, while on reasonable cost the result would be only a nominal loss of Rs. 1,600. Indian National Airways, on 1948-49 cost, would have incurred a loss of Rs. 5.82 lakhs, against a loss of only Rs. 61,000 on reasonable cost. Air Services of India's operations during the period in question would, on 1948-49 cost level, have resulted in a loss of Rs. 2.34 lakhs while on reasonable cost the loss would be Rs. 22,700. Deccan Airways' loss on 1949 cost level would be Rs. 3.71 lakhs and on reasonable cost Rs. 2.78 lakhs. In the case of Airways (India), the Company's operations during the quarter, on 1949 cost, would have resulted in a profit of Rs. 2.09 lakhs against a profit of Rs. 83,000 on reasonable cost. This is because the Company's cost of operation in 1949, as we have pointed out elsewhere, was less than our standard costs. Bharat Airways on 1948-49 cost level would have made a profit of Rs. 1.47 lakhs during the period in question; on reasonable costs the profit would be Rs. 2.47 lakhs. In the case of Indian Overseas Airlines, the result on 1948-49 cost level would be a loss of Rs. 5.47 lakhs and on reasonable cost it would be Rs. 2.9 lakhs. Himalayan Aviation's first quarter's operations on 1949-50 cost would have resulted in a loss of Rs. 6,000 and on the basis of reasonable cost the loss would be Rs. 74,000. This is because the Company's cost of operation on the figures submitted to us for the period up to 31st March 1950 was less than the standard cost of operating a Dakota estimated by us. For the reasons we have explained elsewhere, Himalayan Aviation's cost for the first quarter of 1950 does not represent the normal operating cost over a full year's operation and it is bound to go up.

**247. Financial position of the operating units under our Reorganisation scheme.**—The second set of statements (Appendix XIX) gives the details of the transportation likely to be performed by each of the companies under the re-organisation Scheme proposed by us on the basis of load factors which we consider reasonable, and, after making an estimate of the revenue likely to be earned taking into account the fare and freight structure which we have proposed in the previous Chapter, indicates the financial results of the operations. These statements follow the pattern of the statements in Appendix XVIII. Columns 1 to 10 in both the sets of statements are identical. Column 11 of the statements at Appendix XIX gives the estimated rate of revenue per ton-mile on each of the routes under our Scheme. In the previous Chapter we have made recommendations in regard to ranges of passenger fares, having due regard to (a) the rates per passenger mile which should be charged to give the operator a 10 per cent. profit on his fixed assets and (b) the need for the passenger fares being kept at reasonable levels and not being so high as to prove deterrent to traffic. In a number of cases, the present fares fall within the ranges recommended by us. In such cases, we have assumed that the rate of revenue that would be earned by the company concerned would be the same as at present.

In other cases, we have recommended fixation of fares at levels which are different from what they are at present. The rates of revenue which are likely to be earned in those cases would change and have been recalculated. Column 12 gives the total route revenue for a year on the basis of the revenue per ton-mile. The last two columns give the net result, whether profit or loss, on that route.

248. **Air-India.**—In the case of Air-India, for example, for the route Bombay-Calcutta operated by Viking the total flying hours involved per year are 4076. The capacity ton-miles that would be operated on that route during a year would be 1,518,000. On a load factor of 75 per cent, which we have assumed reasonable on that route (the actual load factor during the first quarter of 1950 was 86.2), the probable traffic for the year would be 1,138,500 ton-miles. The cost of operating the route, at the reasonable operating cost of Rs. 758 per hour, would amount to Rs. 30.92 lakhs. At an estimated revenue of Rs. 2.56 per ton-mile, the total revenue on that route for a year would be Rs. 29.15 lakhs. Thus operation on that route would involve the Company in a loss of Rs. 1.77 lakhs. The statements show similar calculations in respect of the other routes of Air-India as also of the routes of the other companies. In the case of Air-India, its total operations for a year under our scheme would result in a profit of Rs. 4.35 lakhs. Adding to this the Company's non-transportation revenue which, we expect, it would continue to earn on more or less the present scale, viz., Rs. 18.90 lakhs, its total profit for a year would amount to Rs. 23.25 lakhs.

249. **I.N.A.**—In the case of Indian National Airways, the Company's operations under our Scheme would result in a profit of Rs. 4.79 lakhs. If its non-transportation revenue of Rs. 3 lakhs were added, the Company would earn a total profit of Rs. 7.79 lakhs.

250. **A.S.I.-Deccan.**—The combined unit of Air Services of India-Deccan would also earn a profit of Rs. 1.94 lakhs on its operations which, with its non-transportation revenue of Rs. 1.50 lakhs, would amount to Rs. 3.44 lakhs.

251. **Airways (India).**—Airways (India)'s operations would result in a profit of Rs. 2.15 lakhs and, including its non-transportation revenue of Rs. 1 lakh, the total profit would be Rs. 3.15 lakhs.

252. **Bharat Airways.**—Bharat Airways would earn a profit of Rs. 3.74 lakhs. Adding to it its non-transportation revenue of Rs. 12,000 the total profit would be Rs. 3.86 lakhs.

253. **Result in the case of A.S.I. and Deccan Airways if proposed merger does not materialise.**—We have also examined the position of Deccan Airways and Air Services of India separately, if they did not merge but continued to operate their existing services. In that event, we propose that these two companies should operate their existing services, but Deccan Airways might also be given the night air mail service between Delhi and Madras. On this basis Deccan Airways would incur a loss of Rs. 1.61 lakhs which would be reduced to Rs. 1.21 lakhs if its non-transportation revenue were included. Air Services of India's loss would be about Rs. 9,000 and this would be converted into a profit of Rs. 1.61 lakhs if its non-transportation revenue were taken into account.

254. **Disposal of Companies' surplus equipment.**—It will be noticed that in the above calculations we have assumed that the companies would be able to operate at what we consider to be reasonable costs. Some of the companies are already operating at costs which are not very far removed from our reasonable standard costs. But it would require some effort on the part of the other com-

panies to bring down their costs of operations to reasonable levels. In arriving at the standard costs of operations for a particular company (on the basis of our figures of reasonable costs), we had to ascertain what their utilisation in respect of each particular type of aircraft was. This, in its turn, required us to estimate what their aircraft needs were, having regard to the routes which they had to operate. In most cases, we found that the companies could operate those services with much fewer aircraft than they possess at present. Possession of much larger number of aircraft than are actually needed considerably adds to the costs of operations as the companies have to pay insurance and debit depreciation in respect of them, whether the surplus aircraft are actually used or not. Similarly, the companies have to incur costs in connection with the overhaul of airframes in order to keep alive the certificate of airworthiness. It would therefore follow that most of the companies who possess far too many aircraft will have to get rid of the surplus, if we expect them to bring down their costs to what we consider to be reasonable levels. Undoubtedly, the companies were somewhat improvident in purchasing more aircraft than were necessary for their activities. This, however, proved to be a blessing in disguise during the emergency that arose owing to the partition of India, the Kashmir operations and the Assam airlift, when all these surplus aircraft came in extremely handy for those operations. However, if we are asking the companies to bring down their costs to reasonable levels, we have to give to them a free hand to get rid of their surplus aircraft. According to the calculation that we have made, there will be about 25 Dakotas too many in the hands of the existing operators. There would be hardly any market for them in this country and they may have to be sold out of India. We consider it a great pity if these aircraft which we were able to purchase at an extremely low price were allowed to be sold out of India. We will certainly not get another aircraft of that type for the price at which they were purchased. We therefore suggest that it should be considered whether some use for the excess aircraft could not be found by the Indian Air Force. If however the Indian Air Force are not willing to take them, we cannot see how we can ask the operating companies not to sell them out of India assuming that it is permissible to do so, if they can find purchasers for them, especially as we are calling upon the companies to reduce their costs of operations. We understood from Hindustan Aircraft Limited that the costs of keeping the Dakotas on a care and maintenance basis such that they could be put into service at short notice would be about Rs. 10,000 per annum for each Dakota. We think that the small expenditure involved (about Rs. 2½ lakhs) if Government decide to arrange to keep them in storage on a care and maintenance basis for some years, would be well worth it, even if it is regarded in the light of insurance against contingencies. As we have stated in an earlier Chapter we do not think that the Dakotas will be replaced by any other aircraft during the next five years and some reserve Dakotas would always come in handy for normal expansion of air transport in future and for replacing the normal wastage.

**255. Necessity of retrenchment in the staff of the companies.**—If the companies are required to bring down their operating costs, it would be inevitable that there would be retrenchment in their staff. Some retrenchment is a necessary corollary to every effort at rationalisation.

**256. Pilots not likely to be rendered surplus.**—So far as pilots are concerned, we do not think that any difficulties will arise. The same number of flying hours which are at present being operated will be required to be operated in future. Perhaps as a result of expansion a larger number of flying hours may require to be operated. Many of our pilots are at present working more than a thousand hours per year. The Indian Aircraft Rules only require that if a pilot has flown 125 hours in any period of 30 consecutive days, he must produce a medical certificate about his fitness before he can be permitted to do any



more flying. The rules do not lay down any limit to the number of flying hours which a pilot may perform in any year. The inducement of getting over-time wages has led many of our pilots to work for hours which are somewhat excessive. Instances are not infrequent when pilots have flown for 1,200 or 1,300 hours a year. The International Federation of Pilots has recommended the limitation of flying hours to 8 hours in a day, 36 hours in a week, 85 hours in a month, 255 hours in a quarter and 935 hours in a year. The Indian Pilots Guild, who gave evidence before us, stated that the pilots would be ready to forego over-time wages, but that they should not be called upon to fly more than 900 hours a year. They were prepared in exceptional cases to work beyond the monthly and the quarterly limits recommended by the International Federation of Pilots. But they ask that in no case should the daily or the yearly limit recommended by the Federation be exceeded. In Australia, the maximum hours per year are fixed at 1000. But we understand that it is only the most careful scheduling that enables the companies in Australia to obtain a utilisation from the crews of more than 930 hours a year. We are informed that in the United States the average flying hours of a pilot are approximately 900 a year. We have recommended in Chapter 5 that the flying hours of pilots should be limited to 1000 hours a year. If the maximum flying hours for pilots are so limited it would follow that any system of rationalization will not result in any of the pilots being thrown out of employment.

**257. Surplus of Radio Officers to be absorbed, so far as practicable, in the Civil Aviation Department and the Indian Air Force.**—So far as the Radio Officers are concerned, a certain number of them will probably have to be retrenched. We recommend that such officers should be absorbed as far as possible in the Civil Aviation Department. We understand that even now, the Civil Aviation Department casts its net as wide as possible and people with alternative qualifications are selected. For posts such as Aerodrome Officers (for flying control and area control), the Departmental men as well as outsiders can be considered, if a non-Departmental man appears to be outstandingly eligible for the post, there is no reason why his claim should not be considered. It is not necessary that the outsider must begin with the junior-most post. It is also possible that the Indian Air Force may be able to find employment for the displaced Radio Officers.

**258. Ground technical staff.**—In regard to ground engineers, it is hoped that it will not be necessary to throw out of employment the skilled category of ground engineers. Retrenchment, if necessary, should, we suggest, commence with unskilled and semi-skilled personnel, since it is desirable to retain within the Industry the maximum number of qualified and experienced personnel. These people have been trained in a more or less specialised industry, and it may be difficult for them to find alternative employment. The Indian Air Force trains all its ground engineers and mechanics at its bases at Tambaram and Jalahalli. We are informed that there would be a possibility of the services of ground engineers and skilled and unskilled mechanics being utilised by the Indian Air Force provided the retrenched personnel are prepared to abide by the regulations of the Air Force and are amenable to Service discipline. We have every hope that the Indian Air Force will not find it difficult to absorb such of the skilled and semi-skilled personnel as may be thrown out of employment by reason of retrenchment.

**259. Clerical Staff.**—So far as the clerical staff is concerned, we do not think that there should be any real difficulty in their being absorbed in other walks of life.

**Financial Assistance by Government**

In the previous Chapter we have made an assessment of the financial results of the operations of the operating companies under our Scheme of re-organisation. We now proceed to consider what should be the extent of financial assistance from Government to the companies.

✓ **260. Importance of Air Transport to India.**—Our terms of reference require us to report upon the reasonable needs of the Industry for assistance from the State, the manner and extent of such assistance and the costs thereof to the State on the basis that the Indian air services are operated with maximum economy and provision is made for adequate development. The development of air transport is an essential factor in the progress of the national life of every country. Since commercial air transport became a practical proposition, efforts have been made in all countries to establish a sound air transport system, either as a private industry or as a State enterprise. India, although industrially a comparatively young country, cannot afford to lag behind other modern countries and allow civil aviation to be neglected. It occupies a unique position in the world so far as geography is concerned, as most international lines between the East and the West have to go across India. It also enjoys exceptional advantages in certain respects for the purpose of developing air transportation. With its vast distances and consequent advantages both in the saving of time and travelling in comfort which flying so conspicuously affords over surface transport, with safe flying weather throughout the greater part of the year, India is ideally suited for the development of air transport. Although it is true that the economic condition of the country has so far enabled less than 02 per cent. of the total population to avail themselves of the facilities of air transport, constant endeavour has to be made to enable an increasingly large section of the public to take advantage of it. Moreover, civil aviation has always been regarded as a second line of defence. In case of war, all the resources of the Air Transport Industry can always be mobilised and channelled for the defence of the country. Similarly, in other emergencies like floods, earthquakes, civil commotion, disruption of surface transport, etc., air transport would be of inestimable value to the country. These considerations have prevailed with the Governments of most countries and they have undertaken to bear a part or the whole of the loss, if any, sustained by air transport companies, wherever the Industry is in the hands of private enterprise, if they are satisfied that management by the companies has been honest, economic and efficient. Where it is nationalised, the Public Exchequer naturally bears the whole loss, if any. We have not been made aware of any country in the world where the Air Transport Industry, whether nationalised or not, has paid its way without some kind of assistance from Government for some time at least in its history.

**261. Assistance to Air Transport Industry in the U.S.A. and Australia.**—In the United States of America, the position has been stated to be as follows at page 100 of the Report by President Truman's Air Policy Commission entitled "Survival in the Air Age (1948)":

"Throughout the prewar years, the air transport system which we had in this country could not have existed without subsidies by the Government. The Congress recognized that a strong air transport industry was necessary for national defence, for American commerce and for the postal service, and accordingly enacted the policy of governmental financial aid to the air lines.

"By the end of 1942, several of the largest air transport companies which had grown up with the aid of subsidy had reached a point where they could earn a profit without depending on subsidy mail pay. Their receipts from passenger service, express service, and a mail payment based on a rate roughly equal to the passenger rate, more than offset their total expenses. This was an important milestone in the history of air transportation, for it indicated a successful policy on the part of the Government and successful management by those Companies which had reached the much desired point of relative self-sufficiency.

"Throughout the war the air lines were financially strengthened by military contract work plus abnormally high load factors. In both the CAB and the air lines it was believed that a greatly increased demand for air transportation in the postwar years would continue this trend toward self-sufficiency. The difficulties in which the air transport industry now finds itself can be traced primarily to over expansion based on the mistaken assumptions of postwar traffic.

"Although some air line problems of 1947 may differ from those of the prewar period, the over-all situation is the same: the revenue from passengers and cargo, plus a revenue for the carriage of the mail roughly equal to the passenger rate, will not support the operations of many of the companies; if they are to continue in operation and start again up the ladder toward self-sufficiency the Government will have to increase the mail rates.

"By 'Subsidy' is meant the payment to an air line for the carriage of mail of a sum greater than that to which the carrier would be entitled for the simple performance of this function at a service rate on a strictly business basis. The excess of payments above the 'service' rate is a subsidy or as described in the Civil Aeronautics Act, a 'need' payment, based on the need of the air line for financial assistance to balance its expenses with its revenues and earn a reasonable profit."

In Australia also subsidy to some of the operating companies is given in the form of airmail payments, which are far higher than the payment to which the carrier would be entitled for the simple performance of the function of carrying mail at a service rate on a strictly business basis. Their mail payments therefore contain a considerable element of subsidy.

262. **Financial position of Air Transport Industry in other countries.**—We have referred above to two countries in one of which the Air Transport Industry is wholly in the hands of private enterprise and in the other a little more than 50 per cent. in private hands. We proceed to consider the position in countries where the Industry is nationalised.

In Canada, the Trans-Canadian Airline which is a major airline operating both the domestic and external services, is nationalised. The company made losses in 1948 and 1949 and, being a nationalised industry, the losses had to be borne by the national exchequer.

In New Zealand, the New Zealand National Airways Corporation, which is operated by the State, suffered a financial loss in the last two years of about £300,000 per annum.

In South Africa, however, the South African Airways, which is owned by the State, made a profit both in 1948 and 1949 of £410,000 and £379,000, respectively.

In Ceylon, Air Ceylon, 51 per cent. of the shares of which are owned by Government, began its operations in 1947 and until December 1948 it had incurred a loss of Rs. 2,63,000.

In Ireland, Aer Lingus, which is jointly owned by the Irish and British Governments, suffered a loss of £600,000 in 1947-48 and £160,000 in 1948-49. It is expected that the company will make a profit this year.

In England, British Overseas Airways Corporation and British European Airways, which are both nationalised concerns since 1938 operating as autonomous units, suffered a loss of £11,000,000 in 1947-48.

**263. Government Assistance to Air Transport Industry justified.**—We have referred to the position in other countries merely for the purpose of emphasising that payment of some kind of subsidy to the operator, whether the Industry is nationalised or not, is not an unusual feature in the Air Transport Industry. Probably, it would be more correct to say that such payment is the rule rather than the exception. If that is the position in other more highly industrialised countries it would not be a matter for surprise if air transport failed to pay its way in India. One need not therefore be startled at any suggestion about the payment of any subsidy to the operating companies, although every attempt must be made to put the companies on a self-supporting basis. To quote again from "Survival in The Air Age" referred to above, p. 102,

"We consider that direct Government financial aid to commercial airlines is fully justified on grounds of national security and economic welfare. We believe the air transport system of this country can, with such aid now, become self-supporting in the future. We are convinced that any impartial investigators of air transport would endorse the use of public funds to obtain such a sound air transport system."

We adopt these words of President Truman's Air Policy Commission to express our own views so far as the Indian Air Transport Industry is concerned.

**264. Recognition of the principle of assistance to the Air Transport Industry.**—In India also we recognised the need for subsidising air transport companies when the matter was considered at the first meeting of the Policy Committee on Posts and Aviation. The proposals that were then framed assumed that during the first year Government would have to make up the loss to the extent of Rs. 100 lakhs, and that the loss would be progressively reduced until in the 5th year the Industry would show a profit. But until last year, when Government decided to give rebate of customs duty on aviation fuel to the extent of As. 9 per gallon consumed, no direct assistance was given by Government to the operating companies except to Air-India and Indian National Airways under the 1938 contracts for the carriage of mails. These mail payments did contain an element of subsidy. But after the partition of the country, the guaranteed air mail payment of Rs. 15,00,000 to Air-India was reduced to Rs. 10,00,000 and the guaranteed air mail payment to Indian National Airways of Rs. 3,25,000 was reduced to Rs. 1,00,000. It is true that Government provide facilities in the shape of aerodromes and meteorological, navigational and communication facilities. But these facilities are provided in any case by the Government of every country, in addition to bearing a part or whole of the loss incurred by the Industry. Some facilities would have to be provided for the due discharge of India's obligations arising from her being a member of the I.C.A.O. It may, therefore, be not unsafe to assume that Government do recognise the principle of giving some assistance to the Air Transport Industry. If the Industry remains in the hands of private enterprise, the assistance, if any, will take the form of a subsidy, and if the Industry is nationalised, the Public Exchequer will bear the loss.

**265. Method of giving assistance to the Industry.**—We have considered what would be the best method of giving assistance to the Industry. We do not think that the present system of assistance of giving a fuel tax rebate to the extent of 9 as. per gallon consumed by the companies is altogether satisfactory. If the fuel tax rebate was intended as a measure of Government assistance to the companies, then such assistance should take into account the reasonable needs of each company. The present system does not have regard to the needs of each company but gives assistance at a flat rate to every company, depending merely upon the amount of aviation fuel consumed by it. The method for assessing the need of assistance of each company which we recommend is a slight variation of that suggested by Sir Frederick Tymms in the memorandum prepared by the Department of Posts and Air on the plan for Post-war Civil Air Transport in India. At page 12 of the "Report of the First Meeting of the Policy Committee on Posts and Aviation", the following statement appears:—

"The solution which is proposed for consideration is a system based on setting a standard of efficiency of operation as measured by the cost of operation per ton-mile, fixing in advance an ascending scale of efficiency (or descending scale of cost of operation) combined with fixing target revenue on an ascending scale.

Any assistance to be given by Government will then not exceed the difference between the prefixed operating cost and the target of revenue set. It will be the task of the operator to achieve the standard of efficiency of operation and earn the target revenue; in the event of his failure to do so, he should suffer the losses and in the event of greater success than the standards set, he will share the resultant benefits. The advantages of this system are:—

- (a) it provides an opportunity to the operator to make a profit by efficient operation combined with vigorous traffic development but not to continue to do so at the cost of the State;
- (b) it eliminates the cloying effects of and the large staff required for close Government control of supervision and management;
- (c) it eliminates the examination of books, except of the simple revenue accounts, and obviates disputes about the need for particular items of expenditure. There is no scope for the manipulation of profits by creation of reserves, hidden or otherwise."

Mr. J. R. D. Tata who attended the Meeting described it as a well thought out and ingenious plan although he suggested certain modifications to it.

**266. Our standard costs.**—In modifying the system for our present purposes, we think that there is no necessity of setting a standard of efficiency of operation as measured by the costs of operation per ton-mile on an ascending scale of efficiency. Such an ascending scale of efficiency was necessary when the Industry was just about to start and the target of efficiency was expected to be reached in the fifth year of operation. The Industry, as a commercial proposition, is now over four years old. We have worked out in some detail the reasonable costs of operation of a Dakota, a Viking and an SO-95 in Chapter 5. We have also provided graphs which would make it possible to ascertain what the reasonable costs are for different utilisations of the aircraft (Appendix XV). It is quite a simple matter to read off from the graphs what are the reasonable costs for different utilisations. We suggest that these costs may be accepted as standard costs of operation. It is true that the circumstances in which a particular company operates would not answer all the assumptions which we have made in arriving at the standard costs. For

instance, we have assumed that the fuel price for a Dakota would be Rs. 2-14-0 a gallon. That price indicates the weighted average of the price paid for fuel for Dakota operation in the whole of India. It may be that Air-India which probably uplifts a large part of its fuel in Bombay would be paying a little less than Rs. 2-14-0 a gallon, while Airways (India), which may have to uplift part of its fuel at air ports in the interior, may have to pay on an average a little more than Rs. 2-14-0. On the other hand, the costs of operation in other directions, such as labour charges, may be higher in Bombay than they are in Calcutta. These considerations will probably offset each other, and on the whole, the resulting costs of operation would not vary materially from company to company. These may, therefore, be accepted as standard costs for the purpose of calculating the subsidy, unless very substantial reasons arise for making any modifications in them. Such reasons may be an increase in the price of fuel, increased costs of labour, changes in the Indian Aircraft Rules and other regulations such as may affect the physical and economic characteristics of the aircraft, e.g., change in all-up weights of aircraft, permissible periods between airframe and engine overhauls, etc. We recommend, therefore, as we suggested in Chapter 5, that our standard costs be adopted as the target costs, unless the total effect of variation in the individual items results in an overall change of  $2\frac{1}{2}$  per cent. or more.

**267. Estimation of potential revenue and working out of break-even need.**—We have adopted these standard costs for computing the operating expenditure of the companies route by route under our Scheme of re-organisation and have endeavoured to make a reasonable estimate of their potential revenue on each route. For that purpose, data have been collected with respect to the load factors actually obtained during the most recent period for which figures are available and a structure of fares, freight and mail rates devised. (On that basis, an estimate has been made of the potential revenue of each company. This enables us to work out the break-even need of each company.)

**268. Margin of Profit.**—Having ascertained the break-even need, we have to make allowance for a small margin of profit. So long as the Industry is in the hands of private enterprise run on a commercial basis, we think that it is necessary that, in fixing the amount of subsidy, provision should be made for a small margin of profit. If the Industry does not make a small profit, then there is no purpose in having an industry except as a public service which Government may as well run themselves. In countries such as the United States, where the Industry is in the hands of private operators and subsidy is given in the form of mail payments, the mail payments include not only the amounts necessary for breaking even, but also for providing a small margin of profit. At page 101 of the Report of President Truman's Air Policy Commission, the following observations occur as regards the practice obtaining in the United States:

"The method of determining mail payment for subsidised carriers under the Civil Aeronautics Act of 1938 was developed by the Civil Aeronautics Board as follows:

"On the basis of estimates made by an airline and by the Board's staff, the Civil Aeronautics Board determined the probable future income to the line from the carriage of passengers and property. It likewise determined the probable over-all cost of the operations. Such a cost figure invariably exceeded the estimated non-mail revenues. The mail rate then was set at a figure which provided enough additional income to close the gap between non-mail revenues and expenses incurred under honest, economic and efficient management and to leave something over as a profit."

In the decision of the Civil Aeronautics Board in connection with the mail rates fixed for Braniff Airways Incorporated, the following paragraph occurs:

**"Determination of mail rate**

The break even need for the 12 months ended 31st of March 1948 as determined on the basis of the foregoing adjustments is 942,000 Dollars. In addition to this amount, the fair and reasonable mail rate must include a fair return on the recognised investment. It has been the practice to provide a somewhat lower rate of return for a past period than for a future period, in view of the fact that for a past period the probability of error in estimates of operating results is removed and other operating risks have been realised in substantial part. Accordingly a return of 7 per cent. per annum on the recognised investment after allowing for federal income taxes will be provided in addition to the break even need."

It may be noted that this 7 per cent. profit was for a past period of operations while the rate for a future period is higher. The same procedure applies in the case of other companies also.

269. **Rate of profit.**—It was represented before us that we should compute gross profits on the basis of  $11\frac{1}{2}$  per cent. which would give a net profit of 7 per cent. Of this, 2 per cent. would be set apart for reserve and 5 per cent. distributed to the share-holders. We cannot contemplate assistance on such a liberal scale out of public funds when the state of our finances is none too satisfactory. We think that a gross profit of 8 per cent. would suffice. This would provide for income-tax amounting to approximately  $3\frac{1}{4}$  per cent. and reserve  $1\frac{1}{4}$  per cent., leaving not more than  $3\frac{1}{2}$  per cent. to the companies for distribution to shareholders as dividend.

270. **Financial position of the companies under our scheme of reorganisation.**—On the above basis, we have made an assessment of the financial position of the companies under our Scheme of reorganisation and have found that, including their non-transportation revenue, each unit would earn a gross profit of more than 8 per cent. on its fixed assets, vide the statement in Appendix XIX.

Air-India's operations would result in a profit of Rs. 23.25 lakhs, while an 8 per cent. profit on its fixed capital assets would amount only to Rs. 7.76 lakhs. In the case of Indian National Airways, the profit under our Scheme would be Rs. 7.79 lakhs against Rs. 5.44 lakhs representing 8 per cent. on the company's fixed capital assets. The corresponding figures for Air Services of India-Deccan would be Rs. 3.44 lakhs and Rs. 2.16 lakhs; for Airways (India) Rs. 3.15 lakhs and Rs. 2.88 lakhs; and Bharat Airways Rs. 3.86 lakhs and Rs. 2.88 lakhs. Thus each company would not only break even, but would earn a profit of more than 8 per cent. on its fixed capital assets. No assistance from Government would, therefore, be necessary under our Scheme to any of the companies.)

271. **Two important assumptions.**—We would, however, emphasise that this is on two important assumptions which we have made and both of which we consider reasonable assumptions, viz.,

- (a) the companies bring down their costs to the level of our standard costs, and
- (b) the load factors are maintained, or in other words, the small increases of fares, which we have suggested, do not depress traffic to any appreciable extent.

In our estimates of the revenue of the companies, we have not taken into account their probable income from charter operations, but we do not expect this to be quite appreciable.

**272. Travel by air by Government Officers on duty.**—When we had practically completed our task, it was brought to our notice that the Government of India had issued certain orders (Government of India, Ministry of Finance No. F.5(33)-EIV/50 dated 27th July 1950) restricting their general permission to travel by air on duty at an officer's discretion to officers drawing a pay of Rs. 2,250 and above. Before these orders were issued, the permission, it appears, applied to all officers in receipt of a pay of Rs. 1,300 and above. The intention of the new orders, we presume, is to secure a measure of economy in expenditure. As our work relates to the development of civil air transport in this country and as we have been asked to recommend how best the Air Transport Industry could be put on an economic basis and what assistance should be given to it by Government, we have thought it fit to consider the effect of Government's new orders on the development of civil air transport. We think we would not be far wrong if we say that a substantial proportion of the passengers who now travel by air are Government officers travelling on duty. The immediate effect of the new orders, therefore, would be an appreciable decline in the passenger load of the airlines. During the last two or three months, we understand, there has been a noticeable tendency for the loads to go down, but we have based our calculations on the assumption that this is very largely seasonal and that the traffic will pick up again. We cannot reiterate too often that the economic basis of civil air transport operation is the load factor and all possible steps should be taken to see that this is kept up. Government's new orders, we are afraid, would not help much in this direction. If Government are to give financial assistance for the purpose of maintaining a system of air transport services in the country, they should see that they get the maximum advantage out of it and the obvious way of doing it is to utilize this modern means of transport for their day-to-day activities to the largest possible extent. We hardly think it necessary for us, at this stage, to explain to Government the advantages of air transport in the normal functioning of a modern State. We would suggest that Government should consider reverting to the position which prevailed prior to the issue of their orders dated 27th July, 1950.

**273. Review of the position in October 1952.**—As we have pointed out, the above conclusions have been based on the standard costs of operations for the various aircraft which we have recommended as the target costs. Those costs have been arrived at on a fairly strict estimate of the expenditure on the various items which go to constitute the cost of operation of an aircraft, both direct and indirect, fixed and variable. Some of the operating companies such as Air-India and Indian National Airways may find it difficult to reduce their operating costs to that level straightaway and we think that some period of adjustment should be allowed before we can expect the operating companies to reduce their costs per flying hour. A period of about 2 years would, we consider, be appropriate for this purpose and from 1st January 1953 we should expect the operating companies to bring down their costs to the levels which we consider reasonable. Thus, according to our estimate the companies should become self-supporting by that time; but certain of our forecasts may not be borne out through circumstances beyond the control of the operating companies, in which case they may not be able to "break even". It will, therefore, be necessary for a review of the position to be undertaken, both in regard to costs and revenue, after a reasonable time has been given to the companies to adjust themselves to the new conditions. We accordingly suggest



that this review (we are making appropriate recommendations in regard to the machinery for undertaking it later in this Chapter) should start sometime about October 1952, when the results of the companies' operations under our Scheme for over 18 months will be available.

**274. Financial assistance to the Companies in the interim period.**—For the interim period till 31st December 1952, we propose the following arrangements. As we have said earlier, we should allow some period to the companies to bring down costs. We would go a step further and say that, if this is to be done in an orderly manner, Government should assist them to do it, and it would be inadvisable to discontinue suddenly the financial assistance which the companies are at present receiving from Government in the shape of rebate of petrol duty. We accordingly recommend that for the period from 1st October 1950 to 31st December 1951, the assistance may well take the form of the continuance of the petrol tax rebate of 9 as. per gallon. By the end of 1951, the effect of the re-organization, which we have proposed, would have become apparent and the companies would have made some progress in the reduction of their costs. Accordingly we suggest that, for the year 1952, the companies should get assistance in the form of fuel tax rebate to the reduced extent of 6 annas a gallon. In this connection, we may point out that the combined loss of the six term-licence holders for the latest financial year amounted to Rs. 58.21 lakhs. If the petrol tax rebate for the year were excluded the loss would be Rs. 87.71 lakhs. The total annual rebate at the rates we have mentioned above will amount to Rs. 45 lakhs in 1951, and Rs. 30 lakhs in 1952. It will thus be seen that the interim assistance, which we have proposed, will not be excessive.

**275. No Government assistance for non-scheduled operations.**—This interim assistance should apply only to scheduled operations. Non-scheduled operations whether performed by scheduled operators or non-scheduled operators should, we consider, be conducted on a self-supporting basis and so no Government assistance in the form of rebate is justified.

**276. A. T. L. B. to be the body for assessing the needs of the Industry in the future.**—We suggest that, for the future, the task of assessing the reasonable needs of the Industry for assistance should be entrusted to the Air Transport Licensing Board, who should accordingly undertake the review in October 1952 which we have suggested above. The Board should in this matter follow the same methods as we have adopted. The amount of assistance for a particular year having been assessed in advance, the amount so fixed should not be varied, whatever the actual results of the operations for the year for which the subsidy is fixed. If any company has been able to operate at lower costs than the standard costs, it should be entitled to any additional profit earned thereby. If, on the other hand, it does not bring its costs down to the standard costs, it must bear the loss or accept the reduced profits resulting from such operations. Similarly, if the estimates of revenues prove conservative and the company's actual revenues are more than the estimated revenues, it should be entitled to keep the resultant surplus. If, on the other hand, its revenues are less than the estimated revenues, then the company must bear the loss or accept the reduced profits. The results of each year's operations, however, would be taken into account in assessing the subsidy on a similar basis for the following year. This method of assistance will have the merit that, while the operator would know in advance the precise amount of assistance he will get in the ensuing year, he would still be left with the incentive to improve his financial results through his own efforts by reducing costs and developing traffic to the maximum.

277. **Restrictions on the disposal of future profits.**—In order to ensure that the future profits made by the Industry as a result of assistance given by Government are not frittered away, we suggest that

- (a) so long as a company receives a subsidy from Government, this subsidy should first be utilised to meet the operating loss, if any, and the prescribed contribution to the reserve. Out of the balance, if any, a dividend of more than  $3\frac{1}{2}$  per cent. should not be given, and any balance still left should be paid into a special reserve fund earmarked for replacement and development; and
- (b) when the company begins to earn a profit without assistance from Government, it should not declare a dividend exceeding 5 per cent. until an amount equal to the total subsidy, if any, received by it from Government from 1st January 1953 has been paid into the special reserve fund mentioned above.

278. **New functions and powers of the A.T.L.B.**—If our recommendations for the reorganization of the Air Transport Industry are accepted by Government, the work of the Air Transport Licensing Board with regard to issue of licenses for operation of air services will be substantially reduced. On the other hand, it will have the added function of reviewing the financial results of the companies' operations with special reference to the estimates of standard costs and expected revenues. It will also have the responsibility of recommending to Government, on the basis of such review, the amount of assistance, if any, that the companies may require. The Board will continue to control the passenger fares, freight rates and mail payments to the same extent as it does at present. The Board will also exercise general supervision over the frequencies, schedules, etc., of the air services, but we think that some more latitude in this regard may be allowed to the operators than appears to have been the practice in the past. The new duties of the Board will be somewhat similar to the duties of the Directorate of Air Transport and External Relation of the Department of Civil Aviation in Australia.

“The Directorate is responsible for the promotion and economic supervision of Australia's Air Transport system. It is responsible also for the planning of Australia's future Air Services, and it decides who shall operate them. As the legal section of the Department, it negotiates and administers the contracts by which airline operators are paid for the carriage of mail and by which out-back services are subsidised to encourage the development of remote areas on the continent.” (Page 20 of the Annual Report of the Department of Civil Aviation in Australia 1947-48).

The Board will have to remain in continuous touch with the operating companies, examine their returns, analyse them and come to its own conclusions as to the operating efficiency of each company. In order properly to exercise this function, it will be necessary to ensure that adequate power is given to the Board to have access to the books and other operating records of the companies.

279. **Reconstitution of the A.T.L.B. and strengthening of its secretariat.**—The Air Transport Licensing Board at present consists of a Cabinet Minister of the Central Government as Chairman and the Director General of Civil Aviation, Deputy Director General of Civil Aviation and the Joint Secretary, Ministry of Finance (Communications), as Members. We think it wrong in principle that the Deputy Director General of Civil Aviation should be a member of the Board along with the Director General of Civil Aviation. It should

also, we suggest, be considered whether, under the arrangement proposed by us by which the Board will recommend to Government the amount of assistance which will be required by the Air Transport Industry, it will be quite appropriate to have a Cabinet Minister as the Chairman of the Board. Having regard to these considerations, we recommend that the Board should be reconstituted as follows:

- (a) a chairman who should be a person of high judicial, legal or administrative experience. We are doubtful whether there will be sufficient work for a full-time chairman throughout the year, but we think it should be possible to obtain the services of a retired High Court Judge or other person of similar status on a basis of honorarium for about 9 months of the year and full pay for the remaining 3 months when the Board's work will occupy his full attention; and
- (b) two members, of whom one should be the Director General of Civil Aviation or his representative and the other, a representative of the Ministry of Finance.

The Board will frame its own rules of procedure. It will have to maintain its own staff for examining and analysing the data placed before it and to enable it to decide the need for subsidy. The Board should accordingly have a full-time secretary who should be a person with knowledge of air transport. He should be of the level of a Director in the Civil Aviation Department. Under the secretary there will be, besides the usual secretarial personnel, a small staff including 2 or 3 persons, with appropriate technical experience, of the rank of Operations Officers in the Civil Aviation Department. The Board's office should, we think, be distinct from the Civil Aviation Directorate. All the material with the Director General of Civil Aviation should, we consider, be available to the Board, and the Board may, in some cases, think fit to call for further information. We also suggest that the services of the Cost Accounts Branch of the Ministry of Finance should be available to the Board whenever required. The Board may, in the course of its duties, find it necessary to have the advice of a high level technical expert and in such cases, we trust Government will obtain the services of such an expert.

**280. Importance of companies maintaining accounts on a uniform basis and having a uniform financial year.**—We would also here emphasise that it is important that the companies should maintain their accounts on a uniform basis. The Board should in consultation with the Cost Accounts Branch devise a uniform system for the purpose. It will also be necessary to have one uniform financial year for all the companies, and we recommend that the calendar year should be adopted for the purpose.

## CHAPTER 11

### Non-Scheduled Operators

**281. Non-scheduled operators and the amount of work done by them.**—Besides scheduled air transport services as defined in rule 3 of the Indian Aircraft Rules, 1937, the Central Government have, under the second proviso to rule 134 of the Rules, power to permit the operation of air transport services, which are not scheduled air transport services, for the carriage of passengers, mails or goods without any licence, subject, however, to such conditions as they may think fit to impose. In exercise of this power, the Director General of Civil Aviation, to whom the Central Government have delegated the necessary authority, issues permits for non-scheduled operations. The following table shows the existing bodies which are engaged only in non-scheduled operations and the flying hours done by them in 1949 and the first quarter of 1950.

	1949	1st quarter of 1950
	hours	hours
Dalmia-Jain Airways*	745	276
Air Survey Company of India	68	53
Indamer Company	3,803	2,034
Kalinga Airlines‡	4,275	1,053
Jamair Company	563	1,408
Himalayan Aviation**	2,772	844
Nalanda Airways	641	2339†
Shaways (India)	132	..
Total	13,049	5,901

\*Became a purely non-scheduled operator from July 1949.

‡Became a scheduled operator in May 1949.

\*\*Became a scheduled operator in October, 1949.

†This is for the months of January and February only

[TABLE No. 29]

The above figures (Table No. 29) indicate that the non-scheduled operators did about 13,000 hours of flying in 1949 and that their operations in the first quarter of 1950 were on a scale equivalent to about 24,000 hours per annum. These represent roughly 12 to 15 per cent. of the total flying done by both the scheduled and the non-scheduled operators. The scheduled operators who are also permit-holders for non-scheduled operations did about 11,000 hours of non-scheduled flying in 1949 or 1948-49 (according to their financial year).

282. **Distinction between scheduled and non-scheduled services.**—Having regard to the definition of "scheduled air transport service" contained in rule 8 of the Indian Aircraft Rules, 1937, the distinctions between a scheduled service and a non-scheduled service appear to be these:

- (i) In the case of a scheduled air transport service, a licence is issued by the Air Transport Licensing Board, while in the case of a non-scheduled service, a permit is issued by the Director General of Civil Aviation in exercise of the delegated authority of the Central Government.
- (ii) A scheduled air transport service operates between places defined in a time-table, whereas a non-scheduled service is not bound by any such limitation.
- (iii) A scheduled air transport service may advertise its operations, whereas a non-scheduled service may not.

283. **Conditions prescribed by D.G.C.A. when permitting non-scheduled operations.**—In issuing permits for the operation of non-scheduled services, the D.G.C.A. lays down several conditions which are appended to the permit. These conditions prohibit the use of single-engined aircraft at night except within a radius of 10 miles of the aerodrome of departure and the use of multi-engined aircraft at night unless such aircraft is fitted with radio apparatus

approved by the Director General of Civil Aviation. Among other conditions, the following may be noted:—

“(1) No place shall be used for landing or departure other than an aerodrome approved or licensed according to the regulations in force in the territory in which it is situated, provided that when an aerodrome which is not approved or licensed according to the regulations in force is used for landing or departure, the operator or pilot shall satisfy himself that the aerodrome is suitable for the proposed flight in all respects and will not in any way jeopardise the safety of the aircraft.

\* \* \* \* \*

“(6) The operator shall ensure that no advertisement is made in any manner whatsoever in respect of any non-scheduled air transport service operated under this permit.

\* \* \* \* \*

“(9) The operator shall submit to the Director General of Civil Aviation in India a schedule of rates and other charges for chartering different types of aircraft in his possession within seven days of the grant of the permit. Any alterations or modifications of the schedule shall be communicated to the D.G.C.A. telegraphically or by air mail.

“(10) A prior written permission of the Director General of Civil Aviation in India or the Controller of Aerodromes shall be obtained in respect of each individual flight operated under the authority of this permit, if a landing is to be made at any point other than the aerodrome of departure.”

By virtue of this last condition, it has been made incumbent on non-scheduled operators to obtain the written permission of the Controller of Aerodromes in respect of every flight undertaken by them. We understand that when a non-scheduled operator applies for such written permission for a flight which does not, in effect, amount to a competing service *vis a vis* a scheduled operating company on the routes licensed to it, the permission is invariably given. If, on the other hand, such a flight carries passengers or goods on the routes or between points already served by a scheduled operator, the Controller of Aerodromes ensures that the rights of the scheduled operators are protected against such competition. He satisfies himself, before permitting a non-scheduled operator to operate on routes or between points served by a scheduled operator, that the latter is unable to meet the requirements of the public for the transport of passengers and goods. It has to be remembered in this connection that all the scheduled operators also hold permits for non-scheduled operations.

284. **Comparison of position of non-scheduled operations in India with that in Australia.**—We conceive that it was the intention of the Legislature and Government to permit the operations by non-scheduled operators for satisfying the needs of the public for transportation between points which are not served by regular scheduled services and that this was to be done by chartering of whole aircraft by one individual. What is meant by charter or non-scheduled service as such has not been defined in the Indian Aircraft Rules and we understand considerable difficulty has been experienced in the framing of a proper definition of the term. We have, however, a definition of “charter operations” in the Statutory Rules of 1947 issued by the Commonwealth of Australia. Rule 191(c) defines “charter operations” as meaning “all air service operations in which aircraft are used for the carriage of passengers or cargo, for hire or reward on demand, to or from any place, but which are not conducted to fixed schedules to and from fixed terminals, or on two or more occasions within any

period of four weeks over a route, or section of a route, on which a regular public transport service is operating." And clause (d) of that rule defines "regular public transport operation" as meaning "all air services operations in which aircraft are used for the carriage of passengers or cargo on hire or reward to fixed schedules to and from fixed terminals over specified routes with or without intermediate stopping places between terminals." This definition of "regular public transport operations" corresponds to our "Scheduled Air Transport Service." According to the Australian definition, operations may take place over a route or a section of a route of a regular public transport service, without their being considered as "chartered operations" if they are not conducted on more than one occasion within any period of four weeks. Charters may be carried out more frequently than once in four weeks, provided (a) that they are not conducted on fixed schedules to or from fixed terminals, and (b) that they are between places not served by a regular public transport service. But, in Australia, there are practically no non-scheduled operators and all genuine charter work is undertaken by regular Public Transport Operators. The second requisite of the Australian definition *viz.*, there shall be no operations on more than one occasion in a period of four weeks on a section of the route of a regular Public Transport Service, is secured, under our rules, by the requirement that the written permission of the Controller of Aerodromes has to be obtained in respect of each individual flight and by the fact that the Controller of Aerodromes takes care to see that no such permission is issued when the flight does in effect operate as a sort of competition to one of the scheduled services. The other kind of charter operations which are permitted under the Australian definition, *viz.*, those which are not conducted to fixed schedules to and from fixed terminals, are allowed under our Rules when the services do not operate to a time-table and are not advertised.

285. **Conditions of permit frequently evaded in practice.**—Even though these requirements are laid down under the rules and conditions of the permit, we have seen in practice numerous ways in which these restrictions are circumvented. A genuine non-scheduled operator is not supposed to advertise and is expected to charter the whole of his aircraft to an individual for transporting his party of passengers or his load of goods. But this difficulty is got over by getting another individual or an agency to advertise the services by stating even the times of departure and the times of arrival and collecting together the requisite load of passengers or freight. Then such individual or agency approaches the operator with a request for a charter. Such a procedure satisfies the letter, but not the spirit, of the rules, and in effect the operator maintains a scheduled and advertised service under the guise of conducting non-scheduled operations. We have seen instances of this in Assam operations and the most recent example of it is to be found in the advertisement with regard to the running of a regular service to and from Dacca, pending reply. It is difficult in such cases to pin the blame on the non-scheduled operator. The entire responsibility is taken by the charterer who does not guarantee that the service will run as advertised, either because a sufficient number of passengers is not forthcoming or he is unable to charter an aircraft. But there can be little doubt that in most cases such charterer functions as an agent of the operator who, in effect, runs a scheduled service. This criticism applies to a large part of the so-called non-scheduled operations carried on both by scheduled and non-scheduled permit-holders.

286 **Few replies received to our Questionnaire from non-scheduled operators.**—The care which has been taken by the Director General of Civil Aviation in seeing that no non-scheduled operator is allowed to operate on the routes or between points served by the regular scheduled services has had this result,

viz., that the regular scheduled traffic has not been seriously affected by these non-scheduled operations. But the regular scheduled operators are also non-scheduled permit holders, and it is in the field of operations not covered by the regular scheduled services that the license-holders for scheduled services have had to face very heavy competition from non-scheduled operators. Although our Questionnaire was sent to all the non-scheduled operators or those who were till recently non-scheduled operators, we have not been favoured with replies from any of these non-scheduled operators except Himalayan Aviation and Dalmia-Jain Airways. Nalanda Airways sent a reply only to the first four questions in Part A of the Questionnaire and that too on 2nd August after the Committee had almost completed its deliberations. Kalinga Airlines, to our disappointment, decided to withhold its co-operation until we made a personal visit to its offices in Calcutta after which it did send a few replies to our Questionnaire about the end of July.

287. **Comparison of position in the Industry of purely non-scheduled operators with that of scheduled operators.**—The non-scheduled permit-holders have comparatively small overhead expenses and practically no ground organisation. Many of them get their aircraft serviced by some scheduled operator or have a barely rudimentary organisation for the purpose. They can, therefore, offer to run their services at comparatively cheaper rates, with the result that the regular scheduled operators have also to lower their own rates for attracting such traffic to places which are not served by the regular scheduled services. Several complaints were made about their methods of operation and a common policy was attempted to be evolved at a meeting convened on 20th April this year in Calcutta. At that meeting, which was attended by the Director General of Civil Aviation, all the non-scheduled operators who were then present agreed to certain schedules of freight rates. They also agreed to accept bookings only through the agents accredited by the Director General of Civil Aviation, and fixed the agency commission at 5 per cent. The operators made themselves responsible regarding the weight as certified in the manifests submitted to the Controller and for the loading, unloading and removal of the goods from the air port. Although this agreement was arrived at between all the non-scheduled operators and representatives of most of the scheduled airlines who are also non-scheduled permit-holders, we understand that it has not been fully implemented, and undercutting of rates still goes on. We have, therefore, to consider whether it is desirable that these purely non-scheduled operators should be allowed to continue. There is something to be said for the view that the purely non-scheduled operators should be eliminated. It is to our scheduled operators, who have invested considerable amount of capital in the Industry, that we must look for further expansion of civil air transport, and anything that we may be able to do to rehabilitate them would be a step in the right direction. If the operations of the purely non-scheduled permit-holders were to be discontinued, all the additional work now done by them would be available to the scheduled operators. They would be able to utilise their surplus aircraft better and obtain a higher utilisation of their fleet. They might thus be able to lower their operating costs so as to make it possible to reduce the passenger fares and freight rates. This, in its turn, would increase the revenue of the scheduled operators and thus narrow down the gap between their actual expenditure and their income or even add to their profits.

288 **Purely non-scheduled operators to be allowed to continue.**—We are, however, on the whole of the opinion that it would not be desirable to discontinue the non-scheduled operations of persons or bodies who are not running scheduled services. These operations at present amount to about 24,000 flying hours. If these hours are distributed among the companies who

are running the scheduled services, the share of each would not exceed more than 5,000 hours. But most of these non-scheduled permit-holders are operating in the Bengal and Assam areas where on account of the unusual political situation, there is considerable charter work available at present. These conditions, however, may not persist for very long. Moreover, much of the charter work of these non-scheduled operators is between Calcutta and such places as Kumbhigram, Jorhat, Imphal and Mohanbari, Cooch-Bihar and Rupsi. If regular scheduled services are established, then according to the practice laid down by the Director General of Civil Aviation, no non-scheduled operation would be allowed in that area. We understand that scheduled services are being established between Agartala, Kumbhigram, Tezpur and Mohanbari. Consequently, there should be, if the Director General of Civil Aviation's orders are implemented, a very considerable reduction in the scale of non-scheduled operations in that area. It is also not unlikely that a scheduled service may be established between Calcutta, Cooch-Bihar and Rupsi. If this service comes into being, it also will result in a very substantial cutting down of non-scheduled operations. On the whole, therefore, it does not appear to us that any very considerable flying would be available to our scheduled operators as a result of the elimination of the non-scheduled permit-holders.

**289. Non-scheduled operator usually a pioneer.**—Moreover, there is the consideration that a non-scheduled operator is usually a pioneer in the field of civil air transport. He explores new avenues of traffic, promotes air-mindedness among the people and after the ground has been sufficiently prepared by non-scheduled operation, a scheduled service is established. As Government's policy is to foster development of civil air transport, it would be a distinct advantage in allowing purely non-scheduled operators to continue.

**290. Some well-established non-scheduled operators.**—One of the reasons which might be advanced for the view that there should be no non-scheduled operators is that these operators have no regular ground organisation for servicing their aircraft and the standard of their pilots is not required to be so high as in the case of scheduled air transport services. Although this criticism may be applicable to some of the existing non-scheduled operators, it could not be levelled against such units as Himalayan Aviation, Kalinga Airlines, Indamer and Jamair. There are the four principal non-scheduled operators. Of these, Himalayan Aviation and Kalinga Airlines are now running scheduled services. If Government accept our proposal that the provisional licences issued to them last year should not be renewed, they will presumably revert to their position as non-scheduled operators. Having successfully run scheduled services for some time, it could not very well be said of them that they do not possess either efficient pilots or requisite ground organisation.

**291. Competition by purely non-scheduled operators.**—It might also be argued, perhaps with some justification, that the comparatively small overhead charges of these non-scheduled permit-holders enable them to compete against the scheduled operators who are also non-scheduled permit-holders, and that this has resulted in the under-cutting of passenger and freight rates. Some of the airlines have made bitter complaints about this competition which they consider to be unequal and unfair. We are not altogether satisfied that this complaint is correct. So long as the scheduled operators are protected on their scheduled services by the order of the Director General of Civil Aviation that no non-scheduled operator shall carry out any charters on the routes or between the points which are served by regular scheduled services, we do not think that the scheduled airlines could have any serious ground for complaint. It is only in the terrain not served by scheduled services that a non-scheduled



operator has any right to function. It is true that this field is also open for non-scheduled operations of the scheduled licence-holders. A certain amount of competition in this field, is, in our opinion, all to the good. It is true that by reason of their low operating costs, particularly in respect of their overhead charges, the non-scheduled operators, are able to quote rates lower than those quoted by the scheduled licence-holders. But, we feel that so long as their operating costs are in a great measure met from revenue from scheduled operations, the scheduled licence-holders should also be in a position to run charters at rates which should compare favourably with the rates offered by non-scheduled permit-holders. This would enable the public to obtain air transportation at competitive rates in areas where scheduled airlines are not operating. As we have stated before, this area is being continually narrowed down by the starting of new scheduled services. The competitive rates, however, must not go below the direct variable operating costs of the aircraft. At that point, the competition becomes a cut-throat competition and does more harm than good for civil aviation. We may point out that any low rates established by non-scheduled operators cannot continue indefinitely. Once the scale of operation assumes the character of regular services, the expenses of the non-scheduled operator will increase, and the rates will have to be correspondingly raised.

292. **Conditions on which purely non-scheduled operators may be allowed to continue.**—We are, therefore, of the opinion that on the whole the non-scheduled operators may be allowed to function under strict regulation. We recommend, however, that the Director General of Civil Aviation must insist on the following requirements being fulfilled:—

- (1) No non-scheduled operator should be allowed to carry out a flight on routes or between points which are substantially served by scheduled air services. We are informed that the Director General of Civil Aviation makes sure that such flights are not in effect competitive to the scheduled air services. If they are, then the option of taking the charter must, in the first instance, be given to the scheduled operator. Only in case he is not able to undertake the task should the non-scheduled operator be allowed to undertake the charter on that route or between these points. We are informed that the Director General of Civil Aviation does take this precaution. But, we have seen instances in Assam where non-scheduled permit-holders have been allowed to run services even along routes which are served by a regular scheduled airline. Not only has this been done, but even while the Committee was sitting, a contract for carrying mails has been given to a non-scheduled operator in preference to a scheduled operator running services in the same area. The case that we have in mind is that of Kalinga Airlines. Bharat Airways was granted licences some months ago to operate on the:—

- (i) Calcutta—Agartala—Kumbhigram
- (ii) Agartala—Gauhati—Tezpur, and
- (iii) Kumbhigram—Jorhat—Mohanbari routes.

We understand that scheduled services were started on all these routes from 1st August 1950, and yet we are informed that Kalinga Airlines, which is a non-scheduled operator, has been given almost on the same day a contract for carrying mail to Jorhat, Tezpur, Silchar and Imphal, precisely the routes for which Bharat Airways hold a licence for running scheduled services.

- (2) The Director General of Civil Aviation should take every step for avoiding unhealthy competition between the scheduled and the non-scheduled operators. Condition 9 of the permit gives him this power. He may prescribe the minimum rate below which a charter should be undertaken. Any infringement thereof should be sternly dealt with. It does not appear to us to be necessary to fix any maximum. The very fact, that, at almost each important centre there is a certain amount of competition, will dissuade the non-scheduled permit-holders from charging exorbitant rates. But if the Director General of Civil Aviation finds that circumstances exist which require that the maximum should be fixed then he may do so. It should, however, be recognised that even the maximum may be required to be exceeded in special circumstances which the operator might bring to the D.G.C.A.'s notice. It may conceivably happen that the operator may be called upon to take the aircraft to a place where there are no servicing facilities and it may be necessary for the operator to carry his own staff for servicing his aircraft at the other end. In such circumstances, it may sometimes be necessary to charge rates higher than the maximum fixed by the Director General of Civil Aviation.
- (3) At present, there are only four or five non-scheduled permit-holders. Before any new permits are issued, the Director General of Civil Aviation must satisfy himself that real need exists for issuing any more permits, and that the scheduled operators are not in a position to handle the entire traffic.

## CHAPTER 12

### External Services

293. **Item (d) of our terms of reference.**—It is a part of our terms of reference, item (d), that we should make recommendations with regard to the operation and development of our external services. The subject matter lies within a comparatively narrow compass. There are two such services operating at present and they are in the hands of Air-India International in the West and Bharat Airways in the East.

294. **Air-India International's operations to the West.**—Air-India International came into existence in March 1948 for operating international air services to the west of India. The scheme was jointly sponsored by the Government of India, Air-India and Tata Sons. Under the agreement entered into between the Government of India and Air-India International, the Government of India took up 49 per cent. of the share capital and have the option to acquire a further 2 per cent. at any time. Air-India took up 10 per cent. of the share capital. Under an agreement entered into between Air-India International and Air-India, the latter was appointed General Technical Managers of the new Company for a period of 10 years on a management fee based on a sliding scale on the mileage flown. Under this agreement, Air-India is in charge of the services of Air-India International. Air-India was also appointed Chief Booking Agents in India of Air-India International. During the calendar year 1948, the operations of Air-India International covered the period from 8th March 1948, when the Company was registered, to 31st December 1948. From 8th June 1948, Air-India International has been operating its services between Bombay and London with halts at Basra, Cairo, Rome and Geneva on different days of the week. The Company is now operating on a thrice weekly frequency. The operations in 1948 resulted in a loss of

Rs. 4.24 lakhs without any provision being made for depreciation. In accordance with the terms of their agreement with Air-India International, the Government of India made good this loss, plus the provision for depreciation, viz., Rs. 13.01 lakhs, plus 1.5th of the preliminary expenditure amounting to Rs. 2.54 lakhs, the total amount thus paid amounting to Rs. 19.79 lakhs. The accounts for 1949, i.e., for its second year of working, are not yet available, as the correct allocation of some of the joint expenditure between Air-India and Air-India International is still said to be under discussion. It is hoped, however, that the net result will be either a break-even or may possibly show some small margin of profit. If this hope is realised, we consider it very creditable and satisfactory that an international air service should have been able to achieve this in its second year of working.

295. **Bharat Airways' operations to the East.**—So far as Bharat Airways is concerned, it was given a licence in May 1949 to operate an air service from India via intermediate points to Hongkong and Shanghai with the option to proceed further to Tokyo. The traffic on this route is not heavy and several airlines of other States are also operating on it. For this reason and owing to special conditions which came to prevail at Shanghai, Bharat Airways, after operating only a few services up to Hongkong, modified its schedule in August 1949 and has since been operating only up to Bangkok. Even the operation up to Bangkok appears to have involved the Company in considerable loss. The accounts of the external operations of this Company have not been separately maintained but form part of the operations of Bharat Airways as a whole. The latest balance-sheet which has been published is for the year ended 30th June 1949. According to that balance-sheet, the accumulated losses amount to Rs. 17.26 lakhs. The balance-sheet does not show that any provision has been made for depreciation. The final balance-sheet for the year ended 30th June 1950 is not yet available. But we have been provided with a provisional balance-sheet. The year's working is expected to show a loss of Rs. 3.18 lakhs, thus bringing the accumulated losses to Rs. 20.44 lakhs. This year, again, no provision is proposed to be made for depreciation.

296. **Possibility of entrusting Eastern and Western services to one operator.**—There is much to be said for the view that both the Eastern and Western services should be in the hands of one operator. If there is not sufficient traffic to and from places beyond Calcutta to justify a higher frequency, at least one service a week of the three or four services a week operated to the West could operate as a through service to Bangkok and Singapore and back (across India touching Bombay and Calcutta). This would give a much higher utilisation for the aircraft and, what is more, such operator would be able to get some portion of the traffic from the West to South-East Asia and *vice versa*. All such traffic at present goes to foreign airlines, because there is no Indian service operating directly between Europe and South-East Asia. When such a suggestion was made to the representatives of Air-India International, it was not received with any particular enthusiasm, although they promised to consider it if such a proposition was seriously put forward. However, we do not think that, as the circumstances exist at present, such a suggestion is practicable. Air-India International has got an exclusive monopoly for ten years for operating to the West of India. It would much prefer consolidating its position in the West than undertake new operations in the East. No such monopoly has been given to Bharat Airways which is operating the external service to the East. It is operating under a provisional licence which could be terminated at any time. But we were informed that on some kind of assurance of assistance from Government, Bharat Airways imported three Skymasters. One of these crashed a few months ago. The Company is now, in fact, operating the Eastern service as far as Bangkok and only a few weeks ago, it was given a licence to extend

its service to Singapore. If its licence were now discontinued, Bharat Airways will have on its hands expensive aircraft which it is probably not practicable to operate on the internal routes. We are, therefore, of the opinion that the external services to the East should, for the present, remain in the hands of Bharat Airways.

**297. Increase of the frequencies of Air-India International's services to London and Nairobi.**—So far as the expansion of the services is concerned, it must necessarily be conditioned by the traffic offering. Air-India International is at present running three return services to London and its overall load factor for the year ended 31st December 1949 was 69 per cent., which must be regarded as satisfactory. It has under contemplation a proposal to increase the frequency from three services a week to four a week. It has already converted its fortnightly service to East Africa to a weekly one with satisfactory results. Any further increase in its frequencies must depend upon its own estimate of what additional traffic is available. We have no doubt that the Company will not be slow to take advantage of any additional load offering that may be in sight for increasing its frequencies.

**298. Extension of the India-U.K. service to the U.S.A.**—We have considered the question of extending at least one of its weekly services from London to New York. With the great number of services that are daily available for transportation between Europe and the United States of America, Air-India International would have to face intense competition if such a weekly service were inaugurated. A service operating on a weekly frequency only would be under a severe handicap in competing with other companies operating on much higher frequencies. The Company would have to depend for a large part of its traffic on such a service principally on the Indian passengers wishing to cross the Atlantic. Such passengers are not likely to be many in view of the restrictions on release of Dollars to intending travellers. On the other hand, we record with pride and appreciation the reputation which Air-India International has built up, within a short period of its existence, for the safety, regularity and efficiency of its service. This would be no small factor in attracting traffic in spite of formidable difficulties, and we recommend that the feasibility of extending the service, even on a weekly basis, from London to the United States should be examined and given practical shape at the earliest opportunity.

**299. Proper arrangements to be made for allocation of common expenditure between Air-India and A.I.I.**—The need for State assistance to the Company has already been recognised. Under the agreement, which the Government of India have entered into with Air-India International, they have undertaken to guarantee the Company against loss for a period of five years subject to the condition that any loss so borne by Government would be repaid out of future profits. The agreement already provides for some kind of Government control over the operations of Air-India International. It has been provided in the agreement between Air-India and Air-India International that common expenditure incurred by Air-India should be allocated between the two companies on a suitable basis. We understand that this allocation has been the subject of considerable discussion during the last two years and is likely to continue to be so in the future, unless steps are taken to lay down a satisfactory agreed basis for the allocation of each item of expenditure falling under this category. The interests of both the companies require definite arrangements to be laid down and we recommend that early steps should be taken by the Government of India to arrive at precise agreed principles for the allocation of such expenses.

**300. Extension of Eastern route to Australia.**—So far as the Eastern route is concerned, Bharat Airways has only recently been permitted to extend its service from Bangkok to Singapore. It appears to have been the original intention of Government that Bharat Airways should operate on the Eastern route to Bangkok, Hongkong and Tokyo, and Indian Overseas Airlines should operate the Eastern route to Australia *via* Singapore. Indian Overseas Airlines, however, found itself in financial difficulties and has never operated on that route. Bharat Airways has now been given a licence to extend its service from Bangkok to Singapore. That service has not yet started functioning. It would be necessary, in the first instance, for Bharat Airways to consolidate its position even as far as Singapore, before it can consider the question of extending its service to Indonesia and Australia. We feel that such an extension must come eventually, but it has to wait for some time and cannot be undertaken in the immediate future.

**301. Traffic potential on the route to Singapore.**—The Company will need some financial assistance from the State. It has been operating the Calcutta-Bangkok service since May 1949 on a weekly frequency. It commenced its operations on a load factor of 8.96 per cent. But, during the six months from 1st January 1950 to 30th June 1950, the load factor has on an average been 25 per cent. Now that the service is being extended to Singapore, we may reasonably hope for an increase in the load factor, as there is a considerable Indian community at Singapore which, we are sure, would be glad to take advantage of travelling by its own national airline. There are about 200 air passengers uplifted every month between Calcutta and Singapore. There are at present 12 services to Bangkok and 7 to Singapore every week operated by British Overseas Airways Corporation, Pan American Airways, Qantas Empire Airways, Braathens, Scandinavian Airlines System and K.L.M. Besides, there is a weekly service between Bangkok and Calcutta operated by Siamese Airways. With the exception of Siamese Airways, most of the other services are operated with Constellations or DC-6's, both of which types are considerably faster than Skymasters and are pressurised. The experiment, therefore, of extending Bharat Airways' service to Singapore has to be watched. The Company is hopeful that there will be a gradual improvement in the load factor and that in about three years it will be able to break even.

**302. Estimates of cost of operation to Singapore.**—The Company has supplied us with certain figures of the calculations which it has made about the financial results of its operations. They have been made on the basis that its operating costs would be Rs. 9/- per mile. As has been shown in Chapter 5 relating to Reasonable Operating Costs, this is a fair estimate. Bharat Airways' present operating costs are Rs. 10/14/- per mile. But, with the increased utilisation by the extension of its service to Singapore and some reduction in its cost due to the reduction in its Skymaster fleet, we may hope that the Company will be able to reduce its operating costs to Rs. 9/- per mile. It has based its revenue calculations on the assumption that it will get 15 passengers on each service from Calcutta to Singapore and back. We think that this is a somewhat optimistic estimate as it gives the Company a load factor of 36 per cent. But, if this load factor is realised, it expects that the losses during the first year of its operations will be in the neighbourhood of Rs. 8,00,000. It further expects that for the second year of operations, the load factor will increase to 50 per cent. and its loss for that year would be Rs. 4,57,000. In the third year, it hopes that its load factor will increase to 63 per cent. and that its loss for that year would be Rs. 1,10,000. From the fourth year onwards, it hopes not only to break even, but to show some profit. We feel that the estimate of the increase in the load factor, which the Company anticipates during the next three years, errs on the side of optimism.

**303. Government assistance to Bharat Airways for operation of external services.**—Unless, therefore, some kind of financial assistance is received from Government, the Company will not be able to continue the service to Bangkok and Singapore indefinitely. The Company has received some encouragement from Government although we understand that there has been no definite commitment in the matter. From the point of view of international prestige, it would be undesirable to discontinue a service which is already in existence, if its continuance can be secured with a reasonable measure of assistance from Government. We have been informed that these considerations have weighed with Government and it has been decided to give the Company a subsidy to cover its actual loss not exceeding Rs. 6 lakhs during the first year of its operations. The assistance to be given to the Company for the second and third years of its operations must depend upon the results shown by it during the first year of its operations and also upon the extent to which its estimate of rise in traffic comes to be realised in practice. But if the Company does show efficiency in running the proposed service to Singapore, we recommend that Government should continue to give assistance. The Company has assured us that it will not require a subsidy of more than Rs. 4½ lakhs during the second year and not more than Rs. 1.1 lakhs during the third year. We think an assurance of assistance to this extent, if needed, may be given. It may be pointed out that the Company is earning some revenue even now by reason of its charter operations. We understand it gets on an average one charter a month to Europe or Australia. If an assurance of the kind suggested is given, a feeling of uncertainty about its future will have been dispelled and this may enable it to commence its operations to Singapore with a certain amount of hope and confidence.

**304. Condition of Government assistance.**—Any assurance of assistance should be subject to the condition that the Company maintain separate accounts of its Eastern service and that its books would be accessible to Government for examination.

**305. Restriction on carriage of "Fifth Freedom" traffic by foreign air lines.**—There was one important point which was mentioned by Mr. Tata in the course of his evidence before the Committee and that was with reference to "Fifth Freedom" traffic. Drawing attention to the increasing number of international airlines operating to and across India, Mr. Tata said that, while there was no objection to these companies operating air services which could be justified on the basis of their catering for traffic of the "Third and Fourth Freedom" categories, *i.e.*, traffic between the countries of origin of the airlines and their destinations, there was an increasing tendency on their part to pick up traffic in intermediate countries which legitimately belonged to the airlines of these latter countries. In fact, he stated that the very large bulk of the traffic carried by many of these international operators fell in the category of "Fifth Freedom" traffic, that is to say, traffic which neither originated in nor was destined for places in the country of origin of the operators. A good part of this traffic originated from, or was destined for, places in India. In other words, the foreign operators were taking away a good proportion of the traffic which legitimately belonged to Air-India International. An example would make this clear. The traffic between India and the U.K. legitimately belongs to the airlines of India and the U. K. It happens that there are a number of airlines other than those registered in India or the U.K. which operate between India and the U.K., *e.g.*, Pan American Airways, T.W.A., K.L.M., etc. It is recognized that such airlines could carry a certain amount of "Fifth Freedom" traffic in addition to their legitimate "Third and Fourth Freedom" traffic, but it is a well-understood principle (under a Convention adopted in Bermuda) that the carriage of such

"Fifth Freedom" traffic will only be incidental and that international services will not depend substantially on "Fifth Freedom" traffic. Mr. Tata said that actually a very high percentage of the traffic, which the foreign airlines operating to and across India were carrying, was "Fifth Freedom" traffic, more specifically, it was traffic between India and the U.K. Mr. Tata desired that, in the interests of the Indian companies, some restrictions should be imposed on the carriage of such traffic by the foreign carriers. We understand that the Government of India are fully alive to this situation. When the first bilateral agreements for the operation of international air services were entered into by the Government of India, there were no Indian operations outside India. As such, the agreements then concluded did not make any specific reference to restriction of "Fifth Freedom" traffic. Since then, Air-India International has been established for operating external services to the West; Bharat Airways has also been operating services to the East. It is, therefore, a matter of importance that traffic, which legitimately belongs to these companies, should not be allowed to be taken away by other airlines. We understand that in later agreements which the Government of India have concluded with other countries, provision has been made for some amount of restriction on the right to carry "Fifth Freedom" traffic. We would suggest to Government that they should undertake a review of the older agreements also from this point of view and take such measures as are necessary for their revision in a manner which will safeguard the legitimate rights of Indian international airlines.

#### CHAPTER 13

### Miscellaneous Points

#### *Section 1—Re-equipment of the Air Transport Companies*

306. **Present position.**—We have considered the question of the re-equipment of the operating companies during the next four or five years with new types of aircraft. The present fleet of the companies consists mainly of Dakotas, although Air-India and Indian National Airways have some Vikings and Air Services of India two SO-95's. The Dakota is a well-tried aircraft which has proved its merit not only in this country, but in other countries of the world also. The question therefore of its replacement by any other type of aircraft can arise only for two reasons:

- (1) that it is unsuitable for the traffic offering on a particular route; and
- (2) that it is desirable to replace it by more economical types of modern aircraft.

307. **Operation on feeder routes.**—So far as the first consideration goes all the important administrative, industrial and commercial centres of India are already connected by trunk routes and the future development, at any rate, during the next few years would seem to lie in establishing feeder services. For such feeder services where the traffic potential is not very great and on some of the existing routes where the same conditions prevail; the Dakota would not be the most economical type of aircraft. Its costs of operation are high and, unless there is a possibility of obtaining a sufficiently high load factor on a particular route, the operation of a Dakota on that route must result in a loss, unless such loss is off-set to some extent by proportionally high passenger fares and freight rates. This condition, to some extent, prevails on Air Services of India's routes in Kathiawar where the Air Transport Licensing Board has been persuaded to sanction comparatively high range of passenger fares. That range is, to some extent, justified by the very great convenience which air transport affords as compared to surface transport. But the fact remains that unless a sufficiently high load factor is achieved, operations with a Dakota are not likely to be profitable. Therefore on such routes and other feeder routes, where tentative experiments might be made by starting a service, it is essential to find

a suitable smaller type of aircraft. Air Services of India made an experiment by importing a French aircraft, *viz.*, SO-65, with a seating capacity of 10 passengers. But the experiment in our opinion has not been a great success. We have pointed out in Chapter 5 of the Report that the cost per seat-mile of the SO-95 is comparatively high. We are not aware of any other aircraft of a smaller capacity than a Dakota which could be operated on feeder routes with any prospects of its being a commercial success. If therefore Government desire that the possibility of development of feeder routes should be explored, it would be necessary to afford the operating companies some special financial assistance in the matter. However, it is important that the possibility of using a smaller type of modern aircraft should be kept in view and when a suitable type becomes available, the Companies should be encouraged, and if necessary, assisted to acquire such aircraft for use on feeder routes.

**308. Examination of possible new types.**—So far as the general question of replacing the present fleet by more modern types of aircraft is concerned, the position is this. It seems to us that the present time is particularly unsuitable to consider any question of replacing the Dakotas. Replacement by modern aircraft of Dakotas which were purchased almost at a nominal price is going to be an expensive affair, and it seems to us very doubtful whether in the present state of the Industry, the companies will be able to raise the requisite funds for purchasing more modern aircraft. But the more important reason is that from such data as are available, we have found that the use of such modern types of aircraft as the Ambassador and the Scandia is not likely to be more economical than that of the Dakota or the Viking, having regard to the limited traffic potential in this country and the consequent difficulty of achieving the sufficiently high utilisation required for their successful operation. There is also the further point that most of the modern types are still in an experimental stage and it would not be wise for us to commit ourselves to any of these new types before they have got over their "teething troubles". In Chapter 5 of our Report we have made some estimates of the operating costs of these types as well as of the Skymaster and Bristol New Type 170 and have come to the conclusion that out of all these aircraft, only the 61-seater Skymaster indicates some possibility of achieving substantially more economic operation than what is being achieved at present. But even in that case, the Skymaster cannot be operated with any degree of success unless they can achieve a load factor of at least 65 per cent. This means that there must be at least 40 passengers on an average for every trip of the Skymaster. We do not visualise in the near future an intensity of traffic which would justify an assumption of such a high load factor and the high utilization required. We have not made any estimate of the costs of operation of the Convair-Liner or of the Martin 404, as both these aircraft are manufactured in the Dollar area and we conceive that the scarcity of Dollars would preclude any serious consideration of the use of such types of aircraft of American manufacture at least for some time to come.

**309. Development of jet types of aircraft.**—A still more important reason for postponing for the time being the consideration of the replacement of the Dakota with any modern type of aircraft is that revolutionary changes might be expected during the next few years in the character of the engines of new aircraft. During the next five years there is likely to be a transition from piston engines to jet engines and until we know how the new aircraft with turbo-prop or pure jet will operate in actual practice, it would be undesirable to make any heavy commitments. If modern piston-engined aircraft were purchased now and jet aircraft prove to be commercially successful in the near future, we may find ourselves to have made commitments which may eventually turn out to be less economical. It would,



on the whole, therefore be desirable not to make any programme within the next three or four years for any large scale replacement of our present fleet. But the Director General of Civil Aviation and the operating companies should keep a close watch on development of new types of aircraft, so that they may be in a position to take appropriate decisions when the time is ripe.

**310. No justification for replacement of the Dakota in the immediate future.**—In the meantime we shall have to carry on with our existing fleet. The Dakota, although not the most economical aircraft to operate, has undoubtedly proved its merits as the most reliable aircraft. The companies purchased it at an extremely low price. The spare parts for it are understood to be available in sufficient quantities for the needs of the Industry for the next five years at least either in India or abroad. Our engineers are familiar with it and we have satisfactory workshop arrangements for their servicing and overhaul. As stated above, there is no suitable replacement available at present. The initial cost of any new plane would be very high and almost prohibitive. This will lead to higher expenses in respect of insurance, depreciation, etc. It will also necessitate new arrangements being made for overhaul of engines and air frames of such new types of aircraft. On the whole, therefore, we are of the opinion that it would be desirable for the Industry to carry on for the present with their existing equipment.

**311. Selection of a common transport type for civil air transport and Air Force.**—There is one other reason why we may not think at present of any replacement on a large scale. It would obviously be an advantage if for replacement purposes we adopt a type which will not only be suitable for civilian use, but would also be useful as transport aircraft for the Air Force. If Government could decide upon a transport type which they need for defence purposes, it may be possible to see whether such type could also be used for civil air transport. In that case, it may be possible for the Hindustan Aircraft Limited to examine the feasibility of economic manufacture of such an aircraft at Bangalore under licence from the manufacturing company concerned.

**312. External operations.**—In the case of the external services, the India—United Kingdom service is at present being operated with Constellations, which we imagine will be continued in service for the next 5 years. However, if the foreign operators on the line introduce a still more modern type of aircraft, such as the Comet, it may be necessary for India also to fall into line in order to maintain our position. All that we would suggest at present is that the position should be carefully watched both by the Director General of Civil Aviation and the operating company.

#### *Section (2)—Hindustan Air-craft Limited*

**313. How Hindustan Aircraft Limited was formed.**—The need for starting an aircraft factory in India was first considered only after World War II had started. In December 1940, Mr. Walchand Hirachand formed a Joint Stock Company called Hindustan Aircraft Limited at Bangalore with an authorised capital of Rs. 4 crores for the manufacture of aircraft. In June 1942, the Government of India purchased the interests of the Managing Agents in this Company and took over its management. From September 1943 till the end of the War, Hindustan Aircraft Limited was being utilised for the servicing of Air Force aircraft. After the War, Hindustan Aircraft Limited has been re-formed into a Limited Company with the Government of India and the Mysore Government as the only two share-holders. It is Government's instrument for the manufacture of aircraft. The working of the Factory is under the control of a Board of Directors consisting of the Minister for Industry and Supply, a representative of the Mysore Government and a person nominated by the Government of India.

314. **Nature of work done at Hindustan Aircraft Limited.**—On the design side, Hindustan Aircraft Limited appears to have made creditable progress on the design of H.T.2 Trainer, an elementary training type intended to meet the needs of the Indian Air Force and Civil Aviation. The Factory has also done considerable work on the assembly and production of the Percival Prentice Trainer for the Indian Air Force under an arrangement with the Percival Aircraft Company, Luton, England. Production work at Hindustan Aircraft Limited has, however, not reached a stage at which the Factory could be self-supporting on that work alone. To enable the Factory to have a steady load of work, Hindustan Aircraft Limited has been carrying out repair and overhaul work for the civil air transport companies. Most of the Disposal Dakotas were converted for airline use by Hindustan Aircraft Limited. It has also undertaken a contract from the Ministry of Railways for the manufacture of railway passenger coaches. A considerable amount of general engineering work is, we understand, also being done at the Factory for industry and trade. These subsidiary activities have enabled the Factory to distribute its overheads over several branches.

315. **Work done for civil air transport companies.**—In the work of repair, overhaul, assembly and conversion, Indian Air Force naturally gets priority. The number of civil Dakota aircraft which were overhauled for renewal of their Certificates of Airworthiness at Hindustan Aircraft Limited during the last three years were as follows:—

Year	Number of aircraft
1947	57
1948	46
1949	45

During the same years, the number of Pratt and Whitney R-1830 engine overhauls performed at the Factory were as follows:—

Year	Number of engines
1947	224
1948	280 (approximate)
1949	197

The value of the work done for civil airlines has varied as follows:—

Year	Total charges (in lakhs of Rupees)
1946-47	65
1947-48	130
1948-49	160
1949-50	58

The reduction in 1949-50 in the value and quantum of work done at Hindustan Aircraft Limited is to be attributed partly to the reduced charges made by Hindustan Aircraft Limited and partly to the increasing tendency of the scheduled operators to undertake the overhaul of their own airframes and to a limited extent of their own engines.

**316. Complaints against Hindustan Aircraft Limited.**—Some of the scheduled operators have complained that (i) the prices charged by Hindustan Aircraft Limited have been very high, (ii) delivery dates have been behind estimate and (iii) the quality of workmanship is not up to standard.

There are good grounds for believing that the rates charged by Hindustan Aircraft Limited in 1946-47 were excessive. Subsequently however, H.A.L. has effected drastic reduction in its charges. These are reflected in the price charged by the Factory for the overhaul of engines which in 1947-48 was 26 per cent. less than in the previous year. Further substantial reductions to the extent of 41 per cent. and 67 per cent. took place in 1948-49 and 1949-50 respectively. This progressive and steep reduction in the charges during the brief period of 4 years has been explained to us as being due to progressive drop in the prices of spares of different types required for overhaul. We find there has also been steady improvement in the efficiency of the organisation. On an average, in 1948-49 each airframe required for a complete overhaul 21,000 man-hours; in 1949-50 this came down to 13,000 man-hours. This indicates that there has been some stream-lining of operation at Hindustan Aircraft Limited. It is also probable that in 1946 there was considerable surplus labour with the Factory and the wages of excess labour were reflected in the high charges for overhaul work.

It has been claimed by some of the operators that overhaul work could be done in their workshops more efficiently and cheaply than at Hindustan Aircraft Limited. Sufficient evidence was not placed before us to substantiate this contention and it appears that the charges of Hindustan Aircraft Limited are comparatively lower than those incurred by the scheduled operators having their own workshops. On the other hand, it is indicated by the available evidence that the overhaul organisations of some of the scheduled operators have a capacity in excess of their needs. Overhead charges connected with the overhaul work have, therefore, to be distributed over a limited number of aircraft. Consequently, the cost of overhaul in company workshops has been higher.

It seems there is some substance in the complaint about delays on the part of Hindustan Aircraft Limited in executing overhaul work. The delays have been mainly occasioned by the necessity of giving priority to the work of the Indian Air Force. We understand that the position has now considerably improved; the period of overhaul of an airframe in the Factory does not now take longer than 30 days. Hindustan Aircraft Limited say that this period could be further reduced to 23 days if the operators gave, along with the aircraft log book, clear instructions regarding the work to be carried out and the items to be particularly attended to and also supplied to the Factory the spare parts where they desire such spare parts to be used from the operators' own stocks.

As regards the complaint about deterioration in workmanship at Hindustan Aircraft Limited, these relate to some failures of engines which were overhauled at the Factory. These failures, we understand, have been investigated and it was found that they were not due to bad workmanship, but to certain new modifications which had been introduced by the manufacturers and which have since been withdrawn.

**317. Justification for operating companies to have their own overhaul establishments.**—It was suggested that if all the operators were to send to the overhaul establishment at Hindustan Aircraft Limited all their aircraft on a clear and pre-determined plan, considerable further reduction could be effected in the cost of overhauls. The question arises whether some of the scheduled operators like Air-India and Indian National Airways are justified in keeping an independent workshop for overhaul facilities. A unit having a transportation of

5 million ton-miles might, we are advised, be regarded as sufficiently large for maintaining its own overhaul establishment. This assumes a fleet of, say, 12 Dakotas with a utilisation of 1800 hours per aircraft. This would provide the workshop with an average of one aircraft for overhaul every month which could keep it fairly fully occupied throughout the year. Only Air-India can claim to come up to that standard, but both Air-India and Indian National Airways have a number of Vikings for which they have to maintain overhaul establishments as no overhaul facilities for Vikings are available at Hindustan Aircraft Limited. At present Air-India and Indian National Airways have their own workshops for the overhaul of airframes and engines. The other scheduled operators, excepting Himalayan Aviation and Airways (India), do their own C of A overhaul of air-frames and have the necessary staff and equipment for it, but depend upon Hindustan Aircraft Limited for overhaul of engines. It is doubtless an advantage for an airline with a large enough fleet to have its own overhaul arrangements. It can adjust its own programme of overhaul of aircraft in accordance with the needs of the services operated by it. The cost of ferrying the aircraft to Bangalore and back is saved and the time during which the aircraft is grounded is considerably reduced. It is also desirable to have overhaul facilities at 3 or 4 different centres in the country rather than keep them concentrated at one place. During emergencies, Hindustan Aircraft Limited may be fully occupied with Indian Air Force work and the facilities for overhaul for civilian aircraft—if they exist elsewhere than at Hindustan Aircraft Limited—would come in very handy. There are other considerations also which justify such regional distribution. It would be greatly to the benefit of the operators to have their engines and airframes overhauled at reasonable cost at some centre convenient to their bases of operation. It is understood that Hindustan Aircraft Limited is likely to take over the civil maintenance unit in Barrackpore, Calcutta, and organise it as a repair and overhaul base. This base would mainly handle light aircraft belonging to the Flying Clubs and also Dakotas belonging to air companies in North India which have now to send their aircraft and engines over a considerable distance to Bangalore.

**318. Manufacturing activities of Hindustan Aircraft Limited.**—In regard to Hindustan Aircraft Limited's manufacturing activities, we have already stated that on the civil side, progress has been made with the design of an elementary Trainer, viz., H.T.-2. The manufacture of this aircraft, however, cannot be undertaken on an economic basis unless there is a sufficiently large demand for it. Since this aircraft is being designed to satisfy the specifications of Civil Aviation and the Air Force, we feel that it would be desirable to ensure that all the requirements in India in respect of trainer type of aircraft are met by the H.T.-2. It is natural to expect that, in the initial stage, the price of this aircraft will be higher than that of corresponding type of imported aircraft. The excess expenditure due to this difference in price may well be treated by Government as legitimate developmental expenditure for the promotion of aircraft manufacture. We commend this view for Government's consideration.

**319. Production of a medium transport.**—The next step in the direction of aircraft manufacture, viz., the production of a medium transport is, in our opinion, considerably more difficult. In the first place, designing an altogether new type of medium transport is a long and expensive process and it is quite out of the question to expect that all the expenditure incurred could be met out of the sale proceeds of the aircraft eventually produced. It might happen that the design did not result in a suitable type and the whole of the developmental expenditure would then have to be written off. In any case, it is quite clear that the number of medium transport aircraft that would be needed to meet all the requirements of civil air transport services in India would be far too small to support an aircraft manufacturing industry. The only way in our opinion, the problem

can be approached is, as we have pointed out elsewhere, for the Air Force to decide first what type of aircraft would best meet its needs for transport purposes. The Civil Aviation Department could then consider whether that type could not satisfy the requirements of civil air transport services also. The combined requirements of Defence and civil air transport would probably be substantial enough to justify Hindustan Aircraft Limited starting a production line under a system of licence from the manufacturers of the aircraft type selected.

### *Section (3)—The Night Air Services*

**320. Origin of night air services.**—The night air services were inaugurated on 30th January 1949. At that time, the ground organisation was considered adequate only for freight and mail operations and that too during the fair weather. The operations were entrusted to Indian Overseas Airlines, on both the services Delhi-Nagpur-Madras and Bombay-Nagpur-Calcutta. About the end of May 1949, Indian Overseas Airlines got into financial difficulties and it discontinued at first its service between Delhi and Madras. Thereafter, the Delhi-Nagpur section was operated by Indian National Airways and the Nagpur-Madras section by Deccan Airways. About the second week of June 1949, Indian Overseas Airlines discontinued its Bombay-Calcutta service also. By that time the monsoon had arrived and all night operations were suspended. In the meantime, the ground organisation on the routes was developed further to make it possible for the night air services to carry passengers as well during the fair weather. Accordingly, about the middle of October 1949, the night services were resumed, their operation having been entrusted to Himalayan Aviation. Himalayan Aviation continued the night services for the carriage of passengers, freight and mail throughout the fair weather season from October 1949 to May 1950. In the interval, the ground organisation was further strengthened so as to make it possible for the night services to continue during the monsoon also. We thus find that Himalayan Aviation is now operating the night services for the carriage of passengers, freight and mail even during the rainy season. Air-India was given a licence for operating a night service between Bombay and Delhi on 1st March 1950, and it has been running the service during the present monsoon season.

**21. Adequacy of the arrangements for night operation.**—So far as the adequacy of the arrangements for operating the night services is concerned, we can only go by the experience of the night operations which has been gained by Himalayan Aviation and Air-India. In answer to Question No. 20 of our Questionnaire, Himalayan Aviation has stated that in the opinion of its captains operating the night airmail services, the existing arrangements were sufficient for its needs at present. Air-India considers that the existing facilities on its Bombay-Delhi route for fair weather operations are on the whole satisfactory, except that some improvement might be made in the facilities at Paroda and Jaipur. At the latter aerodrome, it suggests that H.F./D.F. or alternatively V.H.F./D.F. equipment should be installed and that the present M.F. beacons be substituted by more powerful beacons. For night flying during the monsoon, it has suggested certain improvements in the arrangements at Bombay, such as increase in the length of the runway 27 to 2000 yards, high intensity flare paths and approach lights and more powerful obstruction lights on the hilltops. Bharat Airways and Deccan Airways have made some suggestions, but these do not appear to have been based on any actual experience of night flying, particularly during the monsoon.

The Indian Pilots' Guild in their reply to question No. 23 of our Questionnaire made no comments on the adequacy or otherwise of the facilities for night flying. The All India Airline Radio Officers' Association has stated that

the night service during the fair weather is satisfactory with the present facilities, but that during the monsoon, safety margin must be guaranteed by the installation of instrument landing systems and by providing ground control approaches. They have further stated that till these facilities are installed, the timings should be so arranged that the landing of the aircraft will coincide with the approach of the dawn.

When the representatives of the Indian Pilots' Guild gave evidence before us, they made some complaint about the inadequacy of the navigational and communication facilities and they had also some comment to make about the assistance received from the Control Towers. They wanted that high intensity flares should be installed and that there should be tracking facilities over ranges of 120 miles. They also suggested having diversionary air fields to which the aircraft may be directed in case of difficulty. The representative of the All India Air Line Radio Officers' Association stated that his association was on the whole satisfied with the existing arrangements, but pointed out that there were occasions, particularly during the early months of night flying, when it was difficult for them to get their bearings. But he conceded that latterly things had improved, especially with the introduction of an additional frequency for night communications. He suggested that it would be best to instal wireless equipment for giving bearings at *all* intermediate stations so that the aircraft may not have to depend upon any one particular station.

**322. Facilities for night operation satisfactory.**—We have looked into this matter. It has been pointed out to us that in the provision of safety measures, there can be no finality and one can never hope to reach a stage when it could be said that the organisation is perfect and needs no improvement. It is only a question as to how far the financial resources of Government permit of a provision being made for additional facilities. The minimum standards have been laid down by the International Civil Aviation Organization, and the arrangements in India wholly satisfy the requirements laid down. In addition, the I.C.A.O. has made certain further suggestions called "Recommended Practices", which individual States might adopt if their financial resources permit. The complaint of the Indian Pilots' Guild that there was incomplete coverage in respect of radio-telephony and wireless communication on Air-India's Bombay-Delhi route was mentioned by us to the D.G.C.A. who was good enough to request this Controller of Communications to examine the position, which he did on the night of 27th July 1950. It was a fairly typical monsoon night with rain-bearing clouds and rain between Bombay and Ahmedabad, thunder-storm clouds and lightning between Ahmedabad and Jaipur and fair weather between Jaipur and Delhi. The personal observations made by the Controller of Communications show that at no stage of the journey was there any lack of beacon coverage, and that during certain stages there was overlapping and a coverage by more than one station. The D.G.C.A. has also given us a complete list of all the stations where emergency landing grounds are available. Adequate radio communication and navigational facilities are available at Delhi, Bombay, Calcutta, Madras, Nagpur, Agra, Bhopal, Hyderabad, Poona, Aurangabad, Jharsaguda, Jodhpur and Ahmedabad. The work in connection with the provision of radio communication and navigational facilities at other stations is proceeding satisfactorily. The installation of high power beacons at Vijayawada and Madras and of V.H.F./D.F. at Jharsaguda may perhaps be delayed to some extent. However medium power beacons exist both at Vijayawada and Madras and the H.F./D.F. which exists at Jharsaguda will meet the immediate requirements of the night operators.

So far as aerodrome organisation is concerned, adequate facilities and staff are available at Delhi, Bombay, Calcutta, Madras, Nagpur, Jodhpur and

Ahmedabad. To meet the minimum requirements of night operations during the monsoon, suitable facilities have been provided at Agra, Bhopal, Hyderabad, Vijayawada, Poona, Aurangabad, Akola, Raipur, Jharsaguda and Jaipur.

We are satisfied that there are adequate facilities for the continuance of the night operations. We hope, however, that Government will find it possible to place at the disposal of the Department of Civil Aviation additional funds for improving upon the existing facilities.

*Section (4)—Training of Pilots and Ground Engineers*

**323. Need for training facilities.**—In air transport, due to its highly technical character and the essential requirements of safety, it is a matter of basic importance that the competence of its personnel should be of the highest standard. Provision, therefore, has to be made for a steady supply of properly qualified personnel. Unlike in many other countries, we are not yet in a position to draw upon personnel released from the Air Force on completion of short service commissions, and, in the absence of any such source of supply it is necessary to have adequate civil training facilities covering the entire field of the various branches of aviation technique and operation.

**324. Position prior to War.**—From the early years of civil aviation in India, the flying clubs have been mainly responsible for imparting basic aeronautical training to the aviation personnel in the country. With their limited facilities, the flying clubs could, however, be never expected to meet the full requirements either in quantity or quality of the Air Transport Industry. By the very nature of their constitution, organisation and equipment, the clubs were not suitable for advanced professional or trade training which demands material resources of considerable magnitude and a specialised instructional staff. Thus, from early days, the airlines which were in existence at the time, namely, Air-India, Indian National Airways and Air Services of India had to provide facilities for advanced training for the pilots whom they engaged. Quite a number of persons who obtained preliminary training at the flying clubs, went abroad, to U.K. for example, and got themselves qualified as commercial pilots.

As regards Ground Engineers, before the War, there were really no organised arrangements in India for the training of this category of aircraft personnel. A few started as mechanics in the flying clubs and the three airlines and gradually by their own efforts worked their way up and obtained licences. A number of them got their training in the U.K. During the War, a system of intensified training was introduced for producing a large number of mechanics for servicing Air Force aircraft.

**Present position regarding training facilities.**—With the very rapid development of commercial air transport in India after the War, the demand for qualified and experienced pilots and other categories of technical personnel increased. The supply was limited and a difficult situation was aggravated by the coming into the field of a large number of airlines who bid against each other for the services of a limited number of men. Government of course had planned for the provision of facilities for the training of commercial pilots, ground engineers, etc. They established a Civil Aviation Training Centre at Allahabad for the advanced training of pilots. A scheme was drawn up correlating the training in the flying clubs with advanced flying training at the Civil Aviation Training Centre. Under this scheme, a trainee, on completion of about 100 hours' training on single-engined trainer type aircraft in a flying club comes to the Civil Aviation Training Centre where he gets further training for

the Commercial Pilot's licence and also on twin-engined aircraft, viz., the Avro Anson. We understand, however, that this scheme has recently been modified. The entire training *ab initio* is proposed to be given at the C.A.T.C. Since the Dakota type of aircraft is in general use in India at present, it becomes essential for the airlines to convert to Dakotas the pilots whom they recruit from amongst the men coming out of the Civil Aviation Training Centre. We, however, understand that arrangements are being made for giving training on the Dakota also at the C.A.T.C. So far as the airlines are concerned, they recruit pilots with 'B' licence and put them on probation till they get their licence endorsed for Dakota, Viking or other similar aircraft. They are then appointed as co-pilots in which capacity they put in flying hours which eventually qualify them for appointment to higher grades. The airlines also provide conversion courses and refresher courses of training which are essential for the efficiency of the flying personnel. Among the scheduled operators, Air-India, Indian National Airways and Bharat Airways provide Link trainer instruction in instrument training up to the standard adopted by the International Civil Aviation Organization. Air-India had an extensive organisation for the training of pilots, which, we understand, is now being reduced in size. Air-India has also, till recently, been running a Ground Engineer Apprentices' school. Owing to the need for economy, this school has been closed down. Indian National Airways is on the other hand continuing with its system of Apprentices' training in its workshops. In Calcutta, Airways (India) has got a school for aircraft mechanics and ground engineers attached to it. There is also another independent school in Calcutta called Air Technical Institute, at which organised instruction in ground engineering is being given. We understand that the Director General of Civil Aviation has also plans for establishing at the Civil Aviation Training Centre, Allahabad, a school for ground engineers.

**326. Effect of our Reorganization Scheme.**—We consider that if the reorganization plans which we have proposed are implemented, the position in regard to supply of technical personnel will definitely ease. While no appreciable change in the present position with regard to pilots is foreseen, the proposed re-organisation may result in a surplus in the categories of skilled and semi-skilled maintenance and overhaul staff. Training of technical personnel must, in our view, be closely related to the requirements of and prospects of employment in the Industry. Any substantial excess of trained personnel over requirements would, besides resulting in wasteful expenditure, cause a sense of frustration amongst the trainees. We accordingly suggest that the training programmes of the D.G.C.A. should be carefully reviewed after fully and precisely assessing the requirements of the Industry and the available supply during the next 5 years.

**327. Gliding.**—We took an opportunity to visit the Gliding Centre at Poona of the Indian Gliding Association. The Centre is equipped with a number of primary and secondary gliders, one or two two-seaters and a winch for launching the gliders. It has an able Glider Pilot as its Chief Instructor. We were informed that about 12 students were undergoing training in gliding at the Centre. We understand that the Association is receiving financial assistance from the Government of India. Gliding is much less expensive than power flying, as there is no power plant and thus no cost of fuel to bear, and the cost of maintenance and repair of a glider is much smaller than that of a powered aeroplane. We are told that for trainees in flying it involves much less risk. Gliding forms a useful and inexpensive method of promoting airmindedness amongst the public. It also instils into the minds of the young trainees, who may later adopt flying as a career, a basic "air sense" as well as a feeling of confidence in flying in the early stages of their training. We feel that gliding has possibilities in India and we hope that Government will continue to extend adequate assistance to the Association to maintain and enlarge its activities.



*Section (5)—Feeder Routes*

**328. Expensiveness of operations of feeder routes.**—The trunk routes connect all the principal cities of India and any future extension of air transport would appear to be in the development of feeder services. Such services are designed to connect the larger cities on the main trunk routes with smaller cities in the interior. The stage length of such feeder services must necessarily be small as such feeder services would serve smaller cities, not separated by very great distances. As chart 6A(1) in Appendix XV shows, the cost per ton-mile of a Dakota is lowest on a stage length of about 350 miles, which thus is its optimum range. Any stage distance therefore of less than 350 miles, as must necessarily be the case in the majority of feeder services, would result in higher costs per ton-mile if operated with Dakotas. It would obviously be uneconomical to use a Dakota on a feeder service unless one can reasonably expect a sufficiently high load factor. If the traffic potential is not enough, the possibility of using a smaller type of aircraft must be explored. The cost of operation per mile of such an aircraft will doubtless be low but its earning capacity will also be correspondingly less. Unless therefore the right type of equipment is selected suited to the potentialities of the traffic, the cost per seat mile is bound to be high. Moreover the traffic offering, which conditions the utilisation of the aircraft, has got to be sufficiently large to enable a high utilisation to be achieved. These conditions for economic operation will be lacking on the majority of the feeder routes. Consequently, the development of feeder services is likely to prove expensive. We are not aware that any suitable aircraft for economic use on feeder routes is available. Air Services of India's experiment with SO-95's has not been very successful. Its reasonable cost of operation for a utilisation of 1000 hours per year is about Rs. 500 an hour which gives the cost per mile (at a block speed of 190 mile per hour) as 42.5 annas. Its seating capacity is 10 and at 80% load factor, the cost per seat mile is 5.23 annas, without allowing for any margin of profit. On a load factor of 65 per cent., the cost would be 6.5 annas a mile. It is true that the institution of a new service has the tendency to create its own traffic and to some extent promotes the growth of air-mindedness in the population; but many of the experiments made by Air Services of India and Indian Overseas Airlines in the north connecting such important cities as Allahabad, Lucknow and Kanpur with Bombay, and by Deccan Airways in the south in linking such cities as Vijayawada, Visakhapatnam, Madhurai and Tiruchirapalli with Madras do not provide sufficient ground for encouragement. If therefore any such development by the institution of feeder services has to be undertaken by the companies, some assistance from Government is likely to be needed. In view of the high costs of operations, the economic fares are bound to be high, but the fares cannot be pitched so high as to be unattractive. Therefore no development of feeder services can take place on a self-supporting basis. Both in Australia and the United States of America, we understand that in the operation of feeder services the companies receive substantial assistance from Government.

**329. Possible feeder routes that could be developed.**—The following are some of the routes on which the possibility of operating feeder services could be considered.

- (1) Madras-Madhurai-Trivandrum
- (2) Bombay-Goa-Mangalore-Calicut-Cochin-Trivandrum
- (3) Lucknow-Kanpur-Gwalior
- (4) Delhi-Agra
- (5) Bombay-Aurangabad
- (6) Calcutta-Asansol-Jamshedpur.

330. **Policy of expansion to be adopted with caution.**—In view of the considerations outlined above, however, we feel that the policy of the expansion of feeder routes should be adopted cautiously.

*Section (6)—Coach-class Services*

331. **Definition of Coach-Class service.**—We have considered whether it would be desirable to expand the facilities for air travel in this country by introducing what are known as "Coach-class" services between high density traffic points. The commonly accepted definition of a "Coach-class" air service is one operated at an appreciably lower fare level than what applies to the normal standard services operating on the same route. Such low fare services were recently introduced by operators in the United States of America, the reduced charges being made possible by:—

- (a) the installation of a considerably greater number of seats than is usual for the particular aircraft type concerned, this high density seating involving considerable reduction in the standard of passenger comfort;
- (b) the elimination of costly items of service such as provision of meals in flight, handling of passenger's baggage, advance reservation facilities, etc.,
- (c) the employment of obsolescent types of aircraft which have been in use in the fleet of the operator sufficiently long to have been depreciated to a practically zero value, so that depreciation charges need no longer be provided for; and
- (d) the operation of the services at off-peak hours, when the demands on the staff of the operator for the handling of the standard services are at a minimum.

Items (b), (c) and (d) help to keep the cost of operation per mile down to the lowest attainable level, while item (a) assists in bringing the total revenue per mile up to a level providing a sufficient margin of profit. In importance, item (a) far outweighs the significance of the other factors. Coach-class service on the above basis necessarily implies the provision of a further set of operations over and above the services handling the usual traffic on a particular route, in effect, it leads to the generation of a new class of traffic by tapping an income group much below the level which can afford the fares necessitated by the normal levels of operating costs and normal volumetric capacity of the aircraft used. The primary object of those low fare services is, thus, to attract additional traffic without losing the market presently being served. Scheduling of the flights at off-hours will also minimise the diversion of traffic from the standard services.

332. **Basic conditions absent in India.**—The basic conditions essential for the successful operation of Coach-class services are, we consider, absent in India at present. The Air Transport Industry is at present at a comparatively early stage of development and the potential air traffic is not yet of sufficient magnitude to justify frequent schedules, even during the hours most convenient to the travelling public. Practically all the existing traffic on the internal lines is carried by Dakotas and Vikings. Though the capacity of the Dakota can readily be increased from 21 to 28 seats, it cannot be used economically in Coach-class service, in view of its limited size and the limited range over which it can operate with safe fuel reserves when carrying 28 passengers. In

the case of Vikings, any increase in the number of its seats is not possible. If Coach-class Skymasters were put in service on high density routes like Delhi-Bombay, Delhi-Calcutta and Bombay-Calcutta, they would probably be able to cater for all the traffic on these routes with a single daily frequency. From the point of view of public convenience, it is in our view far better to build up traffic capacity through the provision of additional frequencies on these routes. A high load factor is just as vital to the success of Coach-class service as it is to that of a normal service, and it appears to us very doubtful whether sufficient traffic potential yet exists to produce the large quantity of passenger traffic needed to fulfil this condition. This is so particularly in view of what we have mentioned in Chapter 5, *viz.*, that we see no prospect even with high density seating in the most suitable type of aircraft, *viz.*, the Skymaster, of bringing the economic fare level below approximately 2½ annas per mile *i.e.*, the rate now charged on the night mail services. We accordingly feel that there is little prospect of the useful introduction of Coach-class services at the present stage of development of the Air Transport Industry in India.

#### Section (7)—Exclusive Freighter Services

333. **Growth of freight traffic and what it consists of.**—We have also considered the question of the operation of exclusive freighter services. Before the War, the magnitude of freight traffic was not large. The scheduled operators more or less concentrated on the passenger traffic, apart from the mail traffic made available to them by Government. During the War period, emergency cargo of all types was carried by the internal services, but there was no occasion for assessing the commercial possibilities. After the War, freight traffic by air has been definitely expanding. The following figures illustrate this—

Year	Freight carried by schedule services. Tons.
1946	587·5
1947	1727·0
1948	3640·0
1949	7930·0
1950	33850·0 (on the basis of figures for first half year)

(Table No. 30)

Air freight shipments include bullion, currency notes, precious stones, pearls, newspapers, betel leaves, tea, fruits, aircraft spares, vegetables, medicines, etc. These articles vary in intrinsic value, bulk and weight and make different demands for space. The maximum and minimum freight rates laid down by the Air Transport Licensing Board are Rs. 2-12-0 and Rs. 0-14-0 respectively per ton-mile. The operators have the freedom to fix the freight rates between the upper and the lower limit.

334. **Cases of purely freighter services.**—On practically all the routes, freight is now carried by the scheduled operators on the regular services along with passengers and mail. The only cases of purely freighter services are the following:—

- (a) On the route Calcutta-Agartala by Kalinga Airlines;

- (b) On the route Delhi-Amritsar-Srinagar by Indian National Airways;  
 (c) On the routes Calcutta-Gauhati and Calcutta-Bagodgra by Airways (India); and  
 (d) On the route Calcutta-Agartala by Bharat Airways.

Services (c) and (d) above were introduced to meet the heavy demands for air transport which arose in West Bengal, Assam and Tripura areas towards the end of 1949, following the dislocation of the surface transport system. Such exceptional situations offer no indication of future possibilities in regard to freighter services.

**335. Circumstances in which pure freighter services could be operated.**—The carriage of freight by air of course depends on the rates offered by the carrier and how these rates compare with the rates for surface transport. A pure freighter aircraft, in view of its greater payload capacity than the passenger aircraft, can offer a cheaper freight rate than a regular passenger service. To what extent this can be taken advantage of to tap freight traffic must depend largely on local conditions. We feel that this is a matter which will have to be examined by each operator in respect of each particular route taking into account all the local circumstances. As far as we can visualise, except for the special cases of West Bengal-Assam, West Bengal-Tripura, etc. and Delhi-Srinagar, there is unlikely to be much scope for the operation of purely freighter air services in India at the present time.

#### *Section (8)—Other Items*

**336. Economy in expenditure by pooling of arrangements for booking, surface transport, etc.**—At present each individual operating company has its own complete organisation at each of its bases for booking, surface transport, passenger and freight handling, etc. In some cases, the companies have their own catering arrangements also. Such duplicated establishments in any case involve wasteful expenditure; but, with the low intensity of traffic, the staff and other facilities maintained for these purposes remain for the most part idle, particularly those at outstations. For instance, in Bangalore, 4 companies are maintaining their own independent organizations, while each has only a daily frequency. We have examined the possibility of the arrangements for booking, surface transport, passenger handling, etc., being entrusted to one independent organization, which could probably be formed by the operating companies themselves on a co-operative basis. We consulted the D. G. C. A. and the operators. Almost all the operators are against the suggestion that booking and passenger handling arrangements should be pooled. It has been pointed out to us that booking and passenger handling are important items of sales-pushing and each company must be free to determine the standard of service which it should give. A separate booking and handling organization would not be interested in promoting sales and goodwill for each individual operator. We think there is force in this argument and consider that booking and passenger handling arrangements should be left to each company. In regard to surface transport, however, the argument does not apply with the same force and we suggest that the operators should consider adopting some arrangement under which surface transport at all the stations in India could be handled on a pooled basis. We have no doubt that this will result in a certain amount of economy.

**337. Aircraft Insurance.**—Some of the operating companies have represented to us that the present insurance rates are high, the rates having risen rather steeply over the last two years, and that this burden is partly responsible for their increasing costs of operation. They have suggested that some

measure should be devised by which the rates could be brought down. We shall deal here only with insurance for hull risks and not with insurance of personnel, passengers or third party risks about which apparently there is no complaint. We find that the present rates vary from  $7\frac{1}{2}\%$  to  $9\frac{1}{2}\%$  the rates quoted being different for each company. There are in this business a number of Indian insurance companies who, however, re-insure the large bulk of the risks with the world insurance interests in London. On an examination of this rather technical subject, we gather that the increase of rates during the last two years was possibly due to the actual amount of the claims for loss or damage made by the Indian operators during this period. It has been suggested to us that the cost of insurance could be brought down either by all the operators jointly negotiating better terms from the insurers or by the Government of India forming a pool for this purpose into which the insurance premia could be paid, in other words, Government taking the place of the insurers. We have examined both the suggestions and consider that neither is practicable. We think that the existing arrangements are probably the best in the present conditions of the Air Transport Industry and, with better and more efficient servicing and repair facilities and a better accident-free record of the companies, the rates will again come down.

**338. Passenger Insurance.**—While on this subject of insurance, we would draw attention to the fact that passenger insurance facilities are not as easily available in this country as we understand they are in other countries. We suggest that such facilities should be provided at the airports. The procedure for such insurance should be simplified, preferably by providing for giving insurance cover at the time of purchasing the tickets.

**339. Manufacture in India of aircraft spares.**—We have seen that for the next five years we shall have to depend to a very large extent on Dakota aircraft for the operation of civil air transport services. The question of the supply of spares for this type of aircraft in adequate quantities thus becomes one of major importance. We understand that the Disposals stocks in India include a very great deal of Dakota spares. At the same time, it appears that there are a number of items, particularly those of a fast moving character, which are not available in India and have to be imported. We gather that such imports constitute about 25 per cent. of the spares required. Of these, only about 10 per cent. are new items, the remaining being available in other countries, particularly United States, from Disposals stocks held there. We learn that an inter-Departmental Committee has been set up by the Government of India to examine the quantities and categories of Dakota spares now available with Disposals stocks in India and to recommend to Government the items and their quantities which should be set apart and conserved for India's use in the future, the remainder to be sold or otherwise disposed of. It has been suggested to us that having regard to the importance of this subject, consideration should be given to the question of fabrication of some of the spare parts in India. We understand that H.A.L. have already done some work in this direction to the extent of manufacturing parts exclusively for their own needs. We suggest that now that it is clear that for the next five years we shall be using Dakotas, suitable arrangements should be made for fabrication in India of such of these items as are likely to be in short supply. Having regard to its special position in this matter, H.A.L. is the best organization for this purpose. They might consider manufacture of these items under a system of licence from the Douglas Company. We understand that an Australian firm is manufacturing certain items of Dakota spares. To the extent H.A.L. is not in a position to meet our requirements fully, advantage may be taken of the facilities provided by the Australian firm.

**340. Import licences for aircraft spares.**—It has been represented to us, both by Hindustan Aircraft Limited and by some of the operators as well as certain aircraft dealers, that very great difficulties are being experienced in

getting import licences for the import of critical aircraft spares and stores. It would seem that the procedure in this respect is somewhat cumbersome. We suggest that a system should be devised by which the requirements in regard to spares of all the airline operators and aircraft dealers should be assessed well in advance and licences issued without any delay. We understand that the Director General of Civil Aviation who is associated in this matter checks up on the quantities proposed to be imported and recommends the extent to which import licences could be issued. Once the Director General of Civil Aviation has made his scrutiny and forwarded his recommendation to the import control authorities, it should not be necessary for the latter to bestow any further examination. Subject to the monetary ceiling not being exceeded, there is no reason why the import licences asked for should not be issued without delay.

**341. Customs duty on aircraft accessories.**—Complaints have been made to us regarding delays in customs clearance of aircraft parts and also in the assessment of duty on aircraft equipment, particularly accessories and radio equipment. We are informed that in respect of quite a number of items, *e.g.*, aircraft fabric, aircraft radio equipment, etc., the customs authorities insist on charging duty as much as 30 per cent. although aircraft parts are liable to a duty of only 3 per cent. All stores which are used for aircraft purposes have to satisfy very high and exacting specifications and as such are far more highly priced than similar items used for other purposes. It is, therefore, most unlikely that such items would be imported under a lower customs duty for aircraft purposes and then used for other purposes. We suggest that a certificate by the Director General of Civil Aviation to the effect that the item in question is an aircraft accessory or is required for aircraft purposes should suffice for the customs authorities to give it clearance after charging it duty at the rate normally assessable on aircraft parts and stores.

**324. Scheduling of air services and connections with other air services.**—It was brought to our notice during the course of our deliberations that there is room for improvement in the time-tables and schedules of the existing air services in India. It appears that these do not give the maximum possible linkage and connections with the internal network as well as with the international services. One example that was brought to our attention was that Air-India's Calcutta-Bombay Viking leaves Calcutta more or less exactly when Q.E.A.'s service from the East reaches Dum Dum. We think that it is a matter of importance from the traffic point of view that in cases of this kind, India's trunk services should, as far as possible, provide suitable connections with international services touching India. We appreciate that in the matter of scheduling and drawing up of time-tables, there are other important considerations to be taken into account, besides appropriate connections to other services. We think that from the point of view of revenue and the convenience of the travelling public, the question of giving proper connections should be carefully considered and every effort made to see that the potentialities are exploited to the maximum by mutual co-operation amongst the airlines.

**343. Industrial disputes.**—In the course of our inquiry, we found that there had been occasions when disputes in regard to wages and salaries and other conditions of service of air transport employees had arisen between the employees' unions and the managements and that those were eventually settled by conciliation or by arbitration by industrial tribunals. Commercial air transport is an all-India activity and we consider that there should be a basic uniformity in the wage and salary structure of the employees in this industry over the whole of India, subject to such local allowances as may be prescribed to meet the high cost of living at particular places. We accordingly recommend that in the matter of terms and conditions of service, pay, allowances, etc..

the employees of air transport companies should, for purposes of industrial disputes, be treated as falling in the Union sphere. Otherwise, there are likely to be large disparities in the basic conditions of service of employees at different centres of India, which will not be conducive to the smooth development of the Air Transport Industry.

344. **Aircraft overhaul and inspection procedures.**—We have referred in Chapter 5 of this Report to the desirability of the present rule that the Dakota should be overhauled annually being replaced by a new rule under which such overhauls should be carried out only after 4000 hours or on the expiry of two years, whichever was earlier. It has been suggested to us that similar liberalization of certain of the existing provisions in respect of engines, propellers, etc. might be considered by the Civil Aviation Department. We realise that the regulations on these matters are designed to secure safety and should not be relaxed except after very full examination of the position. We are informed that the Director General of Civil Aviation is constantly watching the position and when experience suggests that any liberalization could be made, he does authorize such relaxation. In the case of engine hours, it appears that the period between engine overhauls was originally 600 hours which has now been increased to 700, and if further experience justifies further increase in this period, the Director General of Civil Aviation would doubtless authorise such increase. Bharat Airways represented to us that there should be some flexibility in the powers and procedures relating to inspection and approval. In this matter which involves safety, we cannot lay down any hard and fast rules, but we would suggest to the Director General of Civil Aviation that he might constitute some sort of consultative committee of the chief engineers of the air transport operators along with representatives of his Inspection Department. Such a committee could meet from time to time and consider different suggestions for the improvement of and relaxations in the inspection powers and approval procedure, subject to the clear understanding that the final decision in such matters must rest with the Director General of Civil Aviation. Such a consultative committee would facilitate the exchange of ideas and conclusions being reached mutually acceptable to all concerned.





## **PART IV**



**PART IV****CHAPTER 14****State Ownership**

**345. Paragraph (e) of terms of reference.**—Under paragraph (e) of our terms of reference, we have been asked to consider the desirability, practicability and economic consequences of the operation of air transport services under State ownership and management, either direct or through a body corporate, and the cost of acquisition of such ownership. We do not propose to go into an academic discussion of the relative advantages of nationalisation and private enterprise. The question admits of considerable difference of opinion and the decision on such a question must depend upon the merits of each case and the advantages and disadvantages of adopting one system or the other. We should therefore like to examine this matter purely from the point of view of what is good for civil air transport operation in this country.

**346. Conference held on 1st February 1947.**—This specific question was considered in some amount of detail at a conference convened by the then Member for Communications on 1st February 1947. The memorandum submitted to the conference by the late Department of Communications set out the arguments for and against nationalisation of air transport. Briefly, the arguments for nationalisation were—

- (1) The benefit to the State of profits made by the Industry;
- (2) The greater part of the capital investment has, in any case, to be made by the State for the construction of aerodromes and the provision of meteorological, navigational and communication facilities;
- (3) The State provides in some measure facilities for the training of pilots and technical personnel;
- (4) There would be maximum utilisation of aircraft and minimum duplication of workshop and superior staff. It is only a sufficiently large unit that can operate the services at maximum efficiency and this could only be obtained by a process of nationalisation;
- (5) Some of the other countries in which India is most interested, *e.g.*, England, France, Egypt, are running nationalised air transport services, and co-operation with them would be easier if Indian services were also nationalised.

The arguments against nationalisation were:—

- (a) Air transport is new and requires unusual flexibility in management. This cannot be obtained in a Government managed organisation. The tempo of Government administration, particularly on its financial side, is too slow and rigid for the development of air transport.
- (b) Standard of efficiency in a Government organisation is lower than that of a commercially managed organisation, because inefficient and semi-efficient staff cannot be easily eliminated and even promotion to most grades is more or less automatic.
- (c) There is too much interference by the Legislature and there is considerable loss of time of the management in supplying the information required by the Legislature.

- (d) Air transport is a luxury service and the competing claims on public funds from more necessitous services will result in the expenditure on air transport being curtailed or postponed or even eliminated, with the consequence that there will be no prospects of successful development.
- (e) It would take some time to build up a new State operating organisation, and the speediest way of getting into operation on international air routes would be to use the existing operating organisations as a nucleus.

The Memorandum further stated that the arguments for and against nationalisation appeared to be evenly balanced, and that *prima facie* if national ownership was decided upon, autonomous management was essential. It added that if private enterprise was not controlled and if the air transport operations in the country were allowed to become divided into a large number of un-economic units nationalisation would be the only solution to prevent disintegration of the Industry.

**347. Views expressed at the Conference.**—The Chairman, Sardar Abdur Rab Nishtar, the then Member for Communications, said both in his opening and closing remarks that his personal preference was for nationalisation. The members present expressed markedly divergent views. The Provincial Governments were on the whole in favour of nationalisation, although the Government of Bombay expressed the view that for the moment the Industry should be left to private enterprise. Others such as Mr. A. Ramaswami Mudaliar, Mr. J. R. D. Tata and Mr. G. D. Birla were in favour of the Industry being left to private enterprise. Every one, however, recognised that the question should be decided on the merits of the case, the circumstances of the Industry and the country's requirements and objectives, and that the decision should not be based merely on any ideological or doctrinaire considerations, the supreme test being what was in the best interests of the country. Although no decision was taken, the Honourable Member promised to consider carefully the views put forward at the conference and to arrive at a quick decision. The matter, however, does not appear to have been pursued any further, presumably because of the pre-occupation of Government with more important political matters which culminated in the partition of the country in August 1947.

**348. Government's resolution on industrial policy issued in 1948.**—After the present Government came into power, the Government of India issued a resolution on industrial policy, dated 6th April 1948. This resolution provided a blue-print of the views of Government with regard to development of industries in India and particularly with reference to the question of their nationalisation. It was recognised that the State must play a progressively active role in the development of industries, but that the ability to achieve the main objective should determine the immediate extent of State responsibility and the limits to private enterprise. It stated that under present conditions the mechanism and the resources of the State may not permit it to function forthwith in industry as widely as may be desirable. It laid down that for some time to come, the State could contribute more quickly to the increase of national wealth by expanding its present activities wherever it is already operating and by concentrating on new units of production in other fields rather than on acquiring and running the existing units. It emphasized that in the meanwhile private enterprise, if properly directed and regulated, had a valuable role to play. The resolution then went on to classify certain industries which should be the exclusive monopoly of the Central Government, *e.g.*, the manufacture of arms and ammunition, the production of atomic energy and the ownership and management of railway transport. The second list consisted of those

industries where new undertakings could be established only by the State except where the State found it necessary in the national interest to secure the co-operation of private enterprise, such industries being coal, iron and steel, aircraft manufacture, etc. The existing undertakings in these fields were to be permitted to operate for a period of 10 years during which they would be allowed all facilities for efficient working and reasonable expansion. At the end of that period, the matter was to be reviewed in the light of the circumstances obtaining at the time.

**9. Development of air transport to be left to private enterprise with planning and regulation of it by Government.**—The rest of the industrial field was proposed to be left open for private enterprise, both individual and co-operative. It was, however, stated that the State would not hesitate to intervene whenever the progress of the industry under private enterprise was unsatisfactory. There were however certain basic industries, which required financial resources and technical skill and the planning and regulation of which by the Central Government was necessary in the national interest. Among these industries were air and sea transport. The position therefore under the resolution was that the development of air transport was to be left to private enterprise, but with planning and regulation of it by the Central Government.

**350. Issue of term licences to air transport operators in July 1949.**—After this enunciation of policy by the Central Government, the Air Transport Licensing Board gave, in July last year, 10-year term licences to six of the operating units. We consider that the intention of Government at least in July 1949 was not to nationalise the Air Transport Industry during the currency of the licences, since otherwise Government would have presumably extended the licences on a provisional basis pending a final decision on State ownership. As however we are required by our terms of reference to consider the question of the desirability and the practicability of operating air transport services under State ownership, we have to assume that Government are prepared to reconsider the question of nationalising the Industry. But in examining this question we have to keep in view the background of the facts narrated above.

**351. Arguments in favour of State operation of air services.**—On *a priori* considerations, there is a good deal to be said in favour of air transport services being owned and operated by the State. Firstly, one unit in charge of all the operations in the country could use the available resources to the maximum advantage. It could organise the entire air transport of the country in such a way as to get the maximum benefit out of its equipment, workshop capacity and technical personnel. For example, it would not be hampered, as is the case now, by the accident of the possession of a particular type of aircraft by a particular company and the non-availability of routes for that company on which to operate those aircraft. A case in point would be that of the possession of Skymaster aircraft by Bharat Airways. Although the Skymasters were purchased for the purpose of external operations, it is possible to visualise their use on the internal services if sufficient external traffic were not forthcoming or in combination with external services. This type of aircraft might well be utilised to maximum advantage on the triangular group of the main trunk routes connecting Delhi, Bombay and Calcutta. The direct services between these places are now in the hands of Air-India and Indian National Airways which do not possess Skymasters while, on the other hand, Bharat Airways which possesses Skymasters does not have any suitable internal routes on which the aircraft could be economically used without affecting the interests of other operators. This difficulty would not arise if one unit were responsible for the operation of all internal services. Secondly, it would be an advantage from the point of view of defence if internal services were operated by a

State Organisation, because it would be easier and possibly cheaper for the Defence Ministry in an emergency to requisition these services from another organisation of Government rather than from private operating companies. Further, the State organisation's workshops could be utilised for the repair and overhaul of Indian Air Force aircraft, and the training programmes for civil air transport and the Air Force could be suitably co-ordinated with a certain amount of economy in expenditure. Thirdly, one unified State organisation, without the same predominant profit motive as in the case of private enterprise, can be operated with the main policy of giving better and cheaper service to the public. It can undertake developmental schemes which may not be remunerative but are justified in the public interest, un-hampered by the paramount necessity of making a profit. Again a single State organisation would be able to plan the future of the Industry in a more comprehensive way than the separate operating units could do. Only such an organisation would be large enough to take full advantage of the technical developments which are rapidly taking place in civil air transport equipment and operational technique. As a simple example, the Industry may have to consider the question of replacing Dakotas by some more modern aircraft within a period of, say 5 years. The selection of suitable types and the planning for operation of these aircraft after study of their performance and other characteristics will have to be taken up in the course of the next 2 or 3 years. This requires overall long term planning and any such re-equipment programme must involve considerable capital outlay. With the present low intensity of traffic in India, such a scheme could be undertaken more easily by a single large unit than by comparatively small units at present constituting the Industry. If it is to be a single unit, it should obviously be a State organisation. Fourthly, a unified administration should bring about a certain amount of economy in the higher rungs of administration. There would also be scope for some economies at lower levels, although this will be less marked, through elimination of duplication and achievement of a more uniform work load. On the assumption that the operation of air transport services by the State will be conducted with the same degree of efficiency and economy as we expect from the private airline, a unified organisation, as we have explained in Chapter 5, can effect a reduction in the overall costs to the extent of about 8½ per cent. Finally, as we have pointed out elsewhere in the Report, the private airline companies to be put on their feet would require a certain measure of assistance from Government. It will also be necessary for Government to assist them further in re-equipping themselves with more modern aircraft when the present fleet finally becomes obsolete and uneconomic, unless the balance at that time in their depreciation and development reserve funds proves to be adequate for the purpose. If the Industry is always to look to Government for assistance, it would be preferable for Government themselves to run it in their own way. This would incidentally save the setting up of any machinery to assess the amount of assistance required and to see that it is rightly spent.

### 352. Factors to be borne in mind before nationalisation is decided upon.—

The above arguments show that a good case could be made out for running the Air Transport Industry as a State concern. There are, however, we think, several important considerations which should be borne in mind before nationalisation is decided upon. The first point is that civil air transport is a highly technical industry of a very specialised character. Its development is rapid and subject to quick changes in the design of equipment and in operating technique. Its success depends to a greater extent than in many other industries upon personal contact with and personal service to the customer. These factors require, on the part of the management, a maximum of initiative and technical efficiency to keep pace with developments, exceptional readiness to take financial risks in replacing equipment and constant personal attention

on the part of all staff dealing with the customer and an endeavour to please and serve him. On all those counts, the usual form of State administration cannot compare with private enterprise. The slow and rigid bureaucratic methods inseparable from a Government Department are particularly unsuitable to the needs of the Air Transport Industry which requires the maximum of despatch and flexibility in the conduct of management. Secondly, Government have on their hands several high priority schemes concerning the supply of the vital needs of the common man. The Air Transport Industry is at present and must continue for some time to be a luxury service of advantage principally to the fairly well-to-do strata of the community although it must be the constant endeavour of those in charge of the Industry to make its benefits available in a continuously greater measure to the larger sections of the community. But when Government finances are stringent, as we believe they are at present, there is a considerable danger of the requirements of the Air Transport Industry being ignored when those requirements come into conflict with the requirements of the other development schemes affecting the vital needs of the common man. Thirdly, there is the question whether there will be a sufficient number of people available to Government combining both business and administrative experience for a big State enterprise like this. There is one other important consideration. Ever since the plans for the development of air transport were taken in hand, it has been the policy of Government to leave the operation of air transport in the hands of a limited number of privately managed companies. These plans were formulated by the Policy Committee on Posts and Aviation, and it was on the assumption that the Industry would be left to private enterprise that several concerns came into being for the purpose of operating air transport. In April 1945, a policy decision to this effect was taken and announced to the public. Even though the question of nationalisation was specifically raised at the Conference in February 1947, Government took no decision on that point and allowed the existing state of affairs to continue. Even after the present Government came into power and the whole field of Industry was surveyed, Government came to a deliberate conclusion that the development of air transport should be left to private enterprise, although it was to be planned and regulated by the State. Even as late as July 1949, the Air Transport Licensing Board issued 10-year licences to the operating companies. From all this, it would appear that on a question of deliberate policy, it had been the constant view of Government that the development of air transport should be left to private enterprise. A sudden reversal of this policy may undermine the confidence of the Industry in the assurances of Government and their declarations of policy and may have unfortunate repercussions on the development and expansion of other industries also. If the policy in respect of air transport were to be so suddenly reversed, the other industries may not unjustly apprehend similar reversals of policy and this may, to some extent, hamper their plans for efficient working and reasonable expansion. One of the arguments that may be brought forward for such a reversal of policy is that Government became aware of the unsatisfactory position of the Industry only at the end of the year 1949 and that therefore they were justified in revising their original policy. Such an argument however would not be convincing. It was in March 1949 that Government decided to give assistance to the Industry in the shape of a partial refund of the duty on aviation petrol consumed by the companies and by the introduction of the all-up mail scheme. It must have been apparent to Government then that the companies were incurring losses and that it was necessary to give assistance to them. It was only after Government had been made so aware that the Air Transport Licensing Board, presumably on the advice of the Director General of Civil Aviation and the authority of Government, decided to give them term licences, the implication of which was that the Industry was to be left in private hands for at least ten years.

**353. Question the Committee put to itself.**—There are thus weighty arguments against nationalisation of the Air Transport Industry. We have given very careful thought to this matter and the question we have asked ourselves in coming to a conclusion is, having regard to the conditions now obtaining in this country and in the light of the experience we have had in the operation of air transport services by the private airline companies, which of the following two courses would be in the best interests of the Air Transport Industry and of the country, having regard to efficiency, economy and the need for development:

- (a) Whether the private airlines should be allowed to operate the services on the basis of the plan which we have recommended in Chapters 6 to 10; or
- (b) Whether the State should acquire the undertakings of the companies and operate the services under its own auspices.

**354. Efficiency of operation under State operation and private enterprise.**—Our first consideration is, which course would most conduce to efficiency. It is obviously essential that if the Air Transport Industry is to be efficient there should be flexibility of management. Personal initiative and responsibility involving quick decisions in the administrative, operational and engineering organisations is called for to an extreme degree, as more operational and technical emergencies are encountered in air transport than in any other field of enterprise. A Governmental organisation would not provide such flexibility. Stereotyped Departmental organisation with set regulations naturally moves slowly and in consequence affects efficiency. Rigidity in financial matters, necessarily unavoidable in a Governmental organisation, would hamper quick decisions. There would also be lack of close personal interest and supervision without which the discipline of the staff would suffer. It would also be difficult in a State organisation to eliminate the inefficient and the semi-efficient without lengthy and elaborate procedure.

**355. Operation by State Corporation.**—Some of these limitations of State enterprise might conceivably be eliminated by setting up a State Corporation to undertake the nationalised air transport services, but the chances of success of such a Corporation would be determined by the availability of competent managerial personnel at the top and also by the degree of freedom from Departmental and Parliamentary control that would be enjoyed in practice by that Corporation. We however feel that, even in regard to public corporations, it would be found difficult to achieve the required degree of independence. For instance, in matters like scales of pay of staff and their terms and conditions of service, comparisons would be made with the staffs of other Government Departments or organisations and pressure brought to bear on the Corporation to conform with those levels. Similarly, elaborate and detailed accounting procedures and financial control would be set up and these, in practice, would retard quick action by the officials of the Corporation. We understand that the State airline in Australia operating internal routes, *viz.*, Trans-Australia Airlines, although formed only in 1946, is likely to show some margin of profit on its working for the year 1949-50. It is probable that this success has been largely due to the fact that the Commonwealth of Australia were able to secure the services of an outstanding businessman as its Chairman and Chief Executive and that it had the stimulus of keen competition with a very strong private airline, *viz.*, Australian National Airways. We are not in a position to say whether a State airline in India will be able to secure such special advantages, but we feel that the chances in this respect may not be great. We understand that Government are already experiencing considerable difficulty



in finding suitable persons with the necessary business calibre for managing large State undertakings and in the aviation industry which calls for highly specialised knowledge and experience, such difficulty would be all the greater.

**356. Economy in expenditure.**—The next point is economy in expenditure and here one would be faced with the fundamental handicap of finding a satisfactory means of measuring the economic efficiency of the Central State organisation, because it would be a national monopoly. In practice, however, the costs under a State System of operation are hardly likely to be lower than they would be in a rationalised system of private air lines as proposed by us. We have referred earlier to the absence of the element of profit in State operation, but there would still be the need for paying interest on loans or capital advanced by Government to the State organisation and also for providing suitable reserves. Moreover, experience has shown that the profit element in commercial air transport is small and in any case, with the close economic control which the Air Transport Licensing Board exercises by the regulation of fares, freight rates, etc., such profits could be kept within reasonable limits. There is the further consideration that as it would not ordinarily be desirable to hand back to private enterprise an industry which has been nationalised it would be necessary to make sure, before nationalising the Air Transport Industry, that it would not result in a continuous heavy financial liability for Government. )

**357. Future development.**—In regard to development, large centralised undertakings tend to become impersonal and the individual officer is apt to lose interest, with the inevitable accumulation of inertia and consequent loss of drive and slowing down of developmental activities.

**358. Record of private air companies.**—The private air companies have, in our opinion, not done so badly as to require a drastic change of system. Their operational efficiency has been uniformly good. An outstanding example of operational and business efficiency, under a system of private management, is afforded by Air-India International which in the second year of its operation has, we understand, been able to break even and show a small profit. Air-India International has built up a high reputation in the international field and we consider it a matter of great importance that this good name should be jealously preserved and improved upon. Nothing should be done by which it is likely to be jeopardized. With nationalisation which will mean a drastic break-away from the existing organisation of the Industry, there is likely to be, we fear, a sudden drop in efficiency, at any rate in the initial years.

**359. Examination of the argument that the Industry is now working at a loss.**—The fact that the Industry is now working at a loss and requires a certain amount of assistance from Government cannot by itself be construed as an argument for nationalisation. In few countries in the world has civil aviation been a self-supporting proposition and in most countries the State has come to the assistance of the Industry in some way or the other, mostly in the form of unusually high payments made for the transport of mail. So far as India is concerned, we have to take note of the fact that it is at the threshold of industrialisation and, if in more highly industrialised countries civil air transport cannot be run on a self-supporting basis, it would not be fair to expect the air transport companies in India to pay their way. As compared with many other countries in the world, our fares for air transport are not high and Government have been able to arrange for the conveyance of mails by air at a postage rate to the public which is the same as for surface mail, and at a rate to the operating companies, unlike in many other countries, which is only slightly higher than the ordinary freight rate and does not really contain any element of subsidy. Although the Industry has functioned for three or four years, no assistance was given to the Industry by Government until they decided to give partial rebate of petrol duty on aviation fuel consumed by the air transport companies, except

se of Air-India and Indian National Airways, with whom a contract had been entered into for the carriage of mails and which did contain an element of subsidy. But for the rest of the operating companies, no Governmental assistance was forthcoming until March 1949. It is true that the State has provided aerodromes and meteorological, navigational and communication facilities. But such expenditure is always incurred by the State, even in countries where, in addition to such facilities, subsidy is given in some form or other. We do not think therefore that the mere fact that the operating companies are working at a loss at present could be made a ground for nationalising the Industry. Although the companies are at present operating at a loss, it is in some measure at least due to the licensing of a larger number of operators than has been found to be justified by the actual development of traffic. It is true that in the case of some companies, the loss is due to the high level of expenditure which reflects itself in unusually high operating costs. But in respect of some others, their loss is as already mentioned largely due to competition within a limited field and in some cases to the intrinsic inability of the traffic on those routes to bring sufficient revenue. We have no reason to doubt that the licensing policy of the Board was based on such estimates of the potential traffic as could be made from time to time by the companies and the Board with the data then available: But, judging by the actual rate of development of traffic so far, it can be stated now that there has not been adequate traffic to sustain the healthy growth of the existing number of operators. But we hope this position will not continue for long and we have, in dealing with paragraph (d) of our terms of reference, suggested ways in which the operation of air transport could be rationalised within the limits necessarily imposed upon us by the grant of 10-year licences, and we have indicated that if our proposals for re-organisation are implemented and the companies are able to bring down their costs to what we estimate to be the reasonable level, all the operating companies would be able to break even, and even possibly show some profits. It may be necessary for Government to assist the companies to tide over a somewhat difficult period. But we have every hope that after our Scheme comes into operation and with a certain amount of flexibility allowed to the operating companies in the working of their services, Government will not be saddled with any serious liability for the payment of subsidy. We must, however, mention here that further development to keep abreast with advancements in civil air transport in other countries, both in equipment and technique, would involve additional outlay by the companies and it is quite likely that Government will be called upon to assist them in carrying this burden, in the event of the available balances in the companies' reserve funds proving to be insufficient. There is, however, nothing unusual in such assistance being given, as in fostering such an important industry as air transport, in every country Government extends the necessary aid.

360. **No justification for nationalisation.**—We thus consider that there is not sufficient justification to break away from the present set-up. The operating companies are already in the field, and unless there were imperative necessity, there would appear to be no compulsion to take such a serious step as nationalisation at present. We have every hope that with real effort on the part of the Industry and a reasonable amount of assistance from Government, the operating companies will be able to make good. If our hope is not justified, and the companies continue to incur substantial losses and development consequently suffers, then the position should be reviewed at the end of five years to consider whether the position could be improved by the State taking over the Industry. If, on the other hand, the companies do make good and there is no serious call upon Government for helping them out of their financial difficulties, it will be a very strong argument in favour of leaving the Industry in private hands.

**361. If State ownership decided upon, operation to be entrusted to Statutory Corporation.**—Should, however, Government decide as a matter of policy upon State ownership of air transport services, we are strongly of the view that their operation should be entrusted to a Statutory Corporation. Operation of air services as part of the departmental activities of Government would not only be inefficient, but would on a long term view be detrimental to development. The rigidity in procedure to which we have referred earlier would then have full play and the limitations of departmental budgetting would have their strangulating effects on this specialised activity. Even with a Statutory Corporation we are persuaded that it is most important for the success of the enterprise that (a) an outstanding man of business and administrative ability and drive, preferably with sufficient experience of air transport, should be appointed as chairman of the organisation, and (b) the Corporation should be given complete autonomy and freedom from departmental control except in regard to the main policies to be followed as laid down by Government.

**362. Methods of acquiring the undertakings of the operating companies.**—Before setting up such a Corporation, it will be necessary for Government to acquire the undertakings of the existing operating companies. This could be done in two ways both of which would require enabling legislation. The first is for Government to acquire the shares of the companies on the basis of market quotations on a specified date. This would have the effect of taking over the companies as a whole as running concerns with their assets, liabilities, staff, etc. This course was followed when the Reserve Bank of India was nationalised. The second method is to make a valuation of the assets of the companies and take them over on payment to the companies of the value so assessed. In this case, the companies would not be taken over as running concerns and it would be necessary for Government to set up a new entity for carrying on the operations. The old organisations would cease to exist though there is no doubt that their staff would largely be absorbed in the new Corporation. The second method was adopted by the Government of Bombay when they took over the Bombay Road Transport system. It was also the procedure followed by the United Kingdom Government when they acquired the undertakings of Imperial Airways and British Airways in 1939 before setting up the British Overseas Airways Corporation. In the latter case, the assets of Imperial Airways were valued by a reputed firm of accountants and this valuation was accepted by the company as well as by the U.K. Government. A similar procedure appears to have been followed by the Government of the Commonwealth of Australia in 1947-48 in their acquisition of Qantas Empire Airways. After the transfer of the interests held by Imperial Airways in Qantas Empire Airways to the Australian Government when Imperial Airways was absorbed by the British Overseas Airways Corporation, about 50 per cent. of the share capital of Qantas Empire Airways was in private hands. We understand that the Commonwealth Government of Australia acquired these shares at a negotiated price which was based on a previous valuation of assets by an independent expert and which also took into account the level of profits earned subsequent to the valuation, appreciation in the value of certain assets and the improved future prospects following upon the use of Constellation aircraft on Qantas Empire Airways' services. We consider that the second method is more equitable and recommend that it should be followed in acquiring the undertakings of the airline companies.

**363. Valuation of the assets of the operating companies.**—A statement is appended showing the paid-up capital of the companies and their present physical assets on the basis of their published balance sheets (vide Appendix XX). It is not possible for us to assess precisely the amount that will have to be paid to the companies for acquiring their assets, as a number of factors

have to be taken into account, such as replacement value of the assets, of depreciation, the actual condition of the assets at the time of taking over, etc. The original value of the fixed assets and spare parts and tools as shown in the books of the companies is about Rs. 6 crores inclusive of Rs. 60 lakhs for Indian Overseas Airlines and Himalayan Aviation. In the actual acquisition proceedings, however, the valuation of assets would have to be made by an expert body set up for the purpose.

**364. Constitution of the corporation.**—The capital required for the Corporation should be provided by Government. The Corporation should work on purely commercial lines. It should have at its head a Board appointed by Government which will be responsible to the Minister for Communications. The Board will consist of a chairman and 4 members of whom one will be elected vice-chairman. The Chairman, as we have emphasised before, should be a man of outstanding business and administrative ability and drive with air transport experience. His services should be available to the Corporation wholtime. He will, in effect, be the managing director of the organisation. Of the 4 members, who will all be part-time, one will be the Director General of Civil Aviation, one representative of the Finance Ministry, one person with air transport experience but un-connected with the Civil Aviation Department and one person with business experience. There will be, under the Board, a general manager who will be the chief executive officer of the Corporation. It is essential that for this post, a man of ripe administrative experience and drive with intimate knowledge of airline operation in its technical aspects should be obtained.

**365. Advantages of having D.G.C.A. on the Board of the Corporation.**—Though the Board will have representatives of Government on it in the Director General of Civil Aviation and the Finance Ministry's representative, we do not intend that in its working it should follow Government departmental procedures or be subject to departmental control. In order to make it possible for the Corporation to work on strictly commercial principles it is essential that the Corporation should be virtually autonomous and should have large financial and administrative powers. The only form of direction from Government would be in regard to the main lines of policy to be followed by the Corporation. It could, on the other hand, be argued that the inclusion of the Director General of Civil Aviation on the Board might cause embarrassment to him as well as to the Board on matters which impinge on his powers of technical and safety control over air transport operation. We have carefully considered this point of view. The Director General of Civil Aviation is generally responsible to Government for the development of civil air transport and his presence on the Board will facilitate the discharge of his responsibility in this respect by shaping and influencing the decisions of the Board. He is also responsible for the provision of ground and navigational facilities and this will prove useful to the Board in the planning of air services. In the reverse direction, the Director General of Civil Aviation, knowing the Corporation's requirements, would be able to plan the provision of facilities to the best advantage. We feel therefore, that on the whole, the balance of advantage lies in the inclusion of the Director General of Civil Aviation in the Board of the Corporation.

**366. Costs of operation by Corporation.**—In regard to costs of operation by the State organisation, there is no reason why the standard costs we have evolved should not apply to it also. We have in Chapter 5 endeavoured to work out the probable cost of operation of the air services by one unified organisation, taking into account the possible economies that such operation would afford. Assuming that the efficiency of operation by the State Corporation will be the same as we have set for private enterprise, we have estimated that a

reduction in the overall cost of operation to the extent of about 8½ per cent. would be possible if all operations were unified under a State Corporation. The Director General of Civil Aviation submitted to us certain estimates of costs which we have carefully examined and checked. We are constrained to say that these estimates are unrealistically low and will be impossible of achievement. The total cost of operations under our reorganisation Scheme is estimated at Rs. 6 crores and the reduction in cost of operations by a State organisation on the basis calculated by us would be in the neighbourhood of Rs. 50 lakhs. On the same assumption, whatever profit we expect the companies to make under our scheme (about Rs. 42 lakhs) should accrue to the State Organisation.



# **PART V**





## PART V

### CHAPTER 15

#### Summary of Conclusions and Recommendations

##### 367. Conclusions and Recommendations.—

##### *Chapter 3—Present position of the Air Transport Industry.*

##### *Air-India*

(1) With about a quarter of the total route-mileage in India allotted to it, the routes conveniently situated to secure good utilization of its flying equipment and a high proportion of the routes very remunerative, Air-India's revenue potential is strong. The Company's loss for the year 1949 in spite of these favourable factors can only be attributed to its costs being very high and its tariff levels being probably below the economic minimum. (PARAGRAPH 43).

(2) Air-India's operating costs for Dakota are much higher than the standard cost estimated by the Committee. The high costs are due to excessive numbers of staff being employed in most of the categories. Air-India has spare capacity in its organization which, according to the Company, was built up for operation of 50,000 hours while it does only about 27,000 hours. The high costs are also partly due to high scales of salaries at the upper levels. (PARAGRAPHS 44—46).

(3) Air-India should require for its operation of its services, including reasonable reserves, only 9 Dakotas and 7 Vikings, while its present fleet consists of 14 Dakotas and 7 Vikings. The extra 5 Dakotas have also contributed to the high costs of the Company. (PARAGRAPH 47).

(4) Air-India's training organization is more elaborate than what is necessary for its work, having regard also to future development. It should be pruned to a size commensurate with its actual requirement. (PARAGRAPH 48).

(5) The Company laid in stock a large quantity of Dakota spares obtained from Disposals. The quantity so acquired is more than what the Company is likely to require for a number of years. This has resulted in a certain amount of capital being tied up. (PARAGRAPH 49).

(6) Air-India has reached a stage where it should consolidate its position. Any additional flying hours made available to it should be used to increase the utilisation of its existing equipment. It should reduce costs and re-organize itself in such a way as to carry out its work much more economically. (PARAGRAPH 50).

##### *Indian National Airways*

(7) Indian National Airways' utilization of its flying equipment is very low. (PARAGRAPH 56).

(8) The Company's present group of routes is compact; but there is considerable room for improvement in the methods employed by the Company for attracting traffic. (PARAGRAPH 56).

(9) Indian National Airways' operating cost for Dakota for the year 1949-50 was much higher than the Committee's standard cost. As in the case of Air-India, the high costs are due to excessive staff. (PARAGRAPH 57).

(10) Indian National Airways has considerable spare capacity in its workshops. Its flying staff are unbalanced in structure in that they seem to be all captains and no co-pilots. (PARAGRAPH 58).

(11) Whereas the Company's present operations should require only 6 Dakotas and 7 Vikings (including reserves), its fleet consists of 11 Dakotas and 7 Vikings. The extra 5 Dakotas have added to the Company's high cost of operation. (PARAGRAPH 60).

(12) The Company has not been insuring its aircraft. It is desirable as a prudent precaution that Indian National Airways should start insuring its aircraft and other equipment. (PARAGRAPH 61).

(13) The Company's costs figures, particularly in regard to allocation of costs in the maintenance and overhaul workshops, were not entirely accurate. Nor were its figures for carriage of mails dependable. (PARAGRAPH 61).

### *Air Services of India*

(14) Air Services of India's routes are spread over a wide area and the Company's intensity of operation is low; these have made it difficult for the Company to achieve adequate utilization of its staff and flying equipment. (PARAGRAPH 66).

(15) The Company's routes in the Kathiawar area, besides being short in themselves, involve a large number of still shorter stages, requiring maintenance of staff and facilities on a much larger scale than would normally be necessary. (PARAGRAPH 66).

(16) Its routes seem to be, for some part, unremunerative in that, even with frequencies less than daily, the load factors are low. (PARAGRAPH 66).

(17) Air Services of India's operation on the Bombay—Bhopal—Kanpur—Lucknow route was an expensive experiment. (PARAGRAPH 67).

(18) The Company's operation with SO-95's does not seem to have been quite successful financially. The Committee feels that the SO-95 is not likely to prove an economic success in India. (PARAGRAPH 67).

(19) Air Services of India's operations were made difficult by the licensing of Ambica Airlines to operate in the Kathiawar area, thus introducing a competitor for the limited traffic in that area. (PARAGRAPH 68).

(20) Air Services of India's fleet includes 8 Dakotas and 2 SO-95's, while, for the operation of its routes, it should require only 3 Dakotas and 2 SO-95's. The extra load of 5 Dakotas is adding to its costs of operation. (PARAGRAPH 69).

(21) The traffic load afforded by the present routes of the Company is too small to support an operating unit. The Committee is of the view that the chances of the Company continuing its operations on an economic basis depend on its combining with some other organization and thereby obtaining a group of routes which would make an economic unit. (PARAGRAPH 70).

### *Deccan Airways*

(22) Deccan Airways' cost of operation of Dakotas during 1949 came nearest to the Committee's standard cost. (PARAGRAPH 73).

(23) One of the main reasons for Deccan Airways' difficulties is the introduction of the night airmail scheme which affected its traffic on all its routes in greater or less measure. On the Delhi—Madras route, in particular, Deccan Airways lost the bulk of the mail to Himalayan Aviation, and the low fares and freight rates on the night service caused considerable diversion of passenger and freight traffic from it. The Company is also meeting with competition on the Bombay—Bangalore route from Air Services of India. (PARAGRAPH 75).

(24) The Company has neat and efficient base facilities and workshops at Hyderabad. It, however, does not have sufficient work to utilize the entire capacity of these facilities. (PARAGRAPH 76).

(25) Deccan Airways' fleet of Dakotas is 13, while it should be possible for its operations to be carried out with about half the number. (PARAGRAPH 77).

#### *Airways (India)*

(26) The Committee is impressed with the close and continuous control exercised by Airways (India) over its expenditure to ensure that expansion of organization did not outpace the transportation performed. (PARAGRAPH 82).

(27) Airways (India)'s cost of operation of Dakota in 1949 was the lowest among the Indian operators. It was even lower than the Committee's standard cost. The main reason for the low cost was the close control exercised over the strength of staff which had been kept at a level very closely corresponding to the output of the Company as a whole. (PARAGRAPH 83).

(28) The proportion of the strength of the skilled and supervisory staff to that of the unskilled staff is higher in Airways (India) than in other companies. This seems to have enabled the Company to get the maximum productivity out of its personnel. (PARAGRAPH 83).

(29) In respect of certain grades of staff, Airways (India)'s salaries and wages are somewhat lower than those obtaining in other air transport concerns. Nevertheless, the Company has not had an unduly high rate of staff turnover and its efficiency suggests a high level of employee morale. (PARAGRAPH 83).

(30) Airways (India)'s low costs are also due, in some measure, to the standards of appearance and passenger comfort and convenience, both in booking office and aircraft, being somewhat lower than may be desirable. (PARAGRAPH 83).

(31) Much of the Company's mail load on the Calcutta—Madras route was diverted to Himalayan Aviation on the re-introduction of the night airmail services in October 1949. Its passenger and freight traffic was also adversely affected due to the lower passenger fares and freight rates on the night services. On the route Calcutta—Gauhati, operations both by Airways (India) and Bharat Airways led to some amount of undercutting in fares and freight rates. In giving further licences in this area to these two companies, the Committee suggests that care should be taken to see that there is no scope for such practices. It would be preferable for this purpose to allot clearly defined areas to the two operators. (PARAGRAPH 84).

(32) The incursion of non-scheduled operators in its area of operations during the Assam Airlift also affected the traffic of Airways (India). (PARAGRAPH 84).

(33) The Committee considers that Airways (India) did pioneering work in developing air routes in Bengal and Assam and the Calcutta—Madras route. By its economy and efficiency it has built up for itself a strong position. (PARAGRAPH 84).

#### *Bharat Airways*

(34) Bharat Airways has not made any provision for depreciation. If account is taken of this, its operations up to 30th June 1960 would result in a total accumulated loss of about Rs. 60 lakhs against the paid-up capital of the Company of Rs. 80 lakhs. (PARAGRAPH 88).

(35) Bharat Airways' cost of operation of Dakota for 1949 (after making allowances for depreciation and insurance) was somewhat lower than the Committee's standard cost. The Committee, however, feels that such comparison is vitiated by the fact that there has been no proper system in Bharat Airways of allocation of costs between its Dakotas and Skymasters. The Company's figure for flight crew salaries does not accord with the number of pilots which it is employing and the salary which it is paying them. (PARAGRAPH 89).

(36) Almost all the scheduled operations of Bharat Airways are on routes on which another operator also holds a licence, the routes being the same in the sense they connect the same terminal points. This has resulted in the division of the available traffic. (PARAGRAPH 90).

(37) The Company has areas of good traffic potential for development, *viz.*, Tripura, Assam and Manipur. (PARAGRAPH 90).

(38) Bharat Airways has its own workshops for overhaul of Dakota and Skymaster airframes, but the capacity appears to be more than what the Company requires for its work. (PARAGRAPH 91).

#### *Indian Overseas Airlines*

(39) The Committee is of the view that Indian Overseas Airlines brought upon itself most of its difficulties. It equipped itself with a very large fleet of aircraft from its very inception and built up a huge organization before making reasonably sure that it would obtain enough route licences. (PARAGRAPH 97).

(40) Many of the routes for which it got licences were un-remunerative. On the only remunerative route it obtained, *viz.*, Bombay—Nagpur—Calcutta, an older company was already operating. (PARAGRAPH 97).

(41) The Company's operation of night air services was undertaken under conditions (carriage of mail and freight alone without any passenger traffic) which made it a financial liability. (PARAGRAPH 97).

(42) The Company has met with serious financial difficulties and, with its continuing heavy losses, the Committee is not sure whether it is even now free from financial embarrassment. (PARAGRAPH 97).

(43) The load factor on the Company's Bombay—Nagpur—Calcutta service continues to be low. (PARAGRAPH 97).

#### *Himalayan Aviation*

(44) Himalayan Aviation's operations up to 30th June 1950, according to a provisional balance sheet and profit and loss account submitted to the Committee, shows a small loss, but in the Committee's opinion the loss would be substantially higher if certain important factors were taken into account. (PARAGRAPH 100).

(45) The percentage of Himalayan Aviation's mail revenue to its total revenue exceeds 37 per cent., while the percentage of mail revenue of other scheduled operators is between 3 per cent. and 15 per cent. (PARAGRAPH 100).

(46) The low freight rates offered by Himalayan Aviation resulted in very considerable freight offerings which frequently the Company found too much to handle and which had perforce to be off-loaded at Nagpur or kept back at the stations of origin for being flown the next day. This, with the low passenger fares fixed for the night services, resulted in considerable diversion of traffic from the day services. (PARAGRAPH 101).

*The defects in and the difficulties of the Air Transport Industry*

(47) Excepting Airways (India), all the operating companies incurred losses during the latest financial year for which figures were submitted. If the partial rebate of customs duty on aviation fuel granted by Government were excluded, Airways (India) also would have shown a loss. Excluding the petrol rebate, which amounted to approximately Rs. 37·8 lakhs, the combined loss of all the companies for the year amounted to about Rs. 110 lakhs. (PARAGRAPH 105).

(48) Many of the companies have not made adequate provision for depreciation and, if this were taken into account, the loss would be considerably higher. (PARAGRAPH 106).

(49) The fundamental point in the existing set-up of the Air Transport Industry appears to be that there are too many operators for the work to be done, resulting in multiplication of overheads, increased costs, wasteful competition and reduced revenues. (PARAGRAPH 107).

(50) The total capital issue of Rs. 9·7 crores for the operation of air transport services, which was authorized by Government, was very much more than what was needed to undertake the estimated air transportation work in India. (PARAGRAPH 107).

(51) When the Air Transport Licensing Board started functioning, many of the trunk routes in India were already being operated by four companies, which almost automatically got licences for those routes. Except for a few routes in Bengal and Assam and the Calcutta—Madras route, the licences to the new companies were practically for the same routes as those operated by the older companies. (PARAGRAPH 107).

(52) The regime of uneconomic competition led to a progressive weakening of the companies, which culminated in the liquidation of Jupiter Airways and Ambica Airlines. (PARAGRAPH 107).

(53) The introduction of Himalayan Aviation into the field of scheduled operators to operate the night airmail services cut across the lines of traffic carried by the day operators. The Committee feels that the development of night airmail services should have been brought about in a manner consistent with the pattern of operation already in existence. (PARAGRAPH 107).

(54) The Committee is of the view that the working of the rules for the licensing of scheduled air transport services has not brought about the results that were intended to be achieved. (PARAGRAPH 108).

(55) It is clear, on the basis of experience during the last four years and the present indications of prospects for the immediate future, that there is not likely to be sufficient volume of traffic to sustain the operations of more than a very limited number of units. (PARAGRAPH 108).

(56) Long delays in the disposal of applications for licences are wasteful in their effect on the companies. The Committee is of the view that early action should be taken by the Air Transport Licensing Board to dispose of the pending applications (PARAGRAPH 109).

(57) The difficulties of the companies were also largely due to their equipping themselves with aircraft and spares and recruiting personnel on a scale far in excess of what was needed for the operation of the services which they could reasonably have expected to be allotted to them. This resulted in the capital resources of the companies being drained, and burdened them with heavy current expenses even before their applications for licences were considered. (PARAGRAPHS 110 and 112).

(58) The Committee did not find much substance in the companies' complaint that this state of affairs was due to the Air Transport Licensing Board insisting, even before the companies' applications for licenses were considered, on their producing evidence that they had the necessary aircraft, other equipment and the personnel for the operation of the services for which they had applied. (PARAGRAPH 111).

(59) The intense competition amongst the companies also led to their bidding against each other for the services of a strictly limited supply of technical personnel with the result that wages and salaries in all grades went up very considerably. (PARAGRAPH 112).

(60) Some of the companies built up large organizations with little regard for the actual magnitude of the operations that they were handling. (PARAGRAPH 113).

(61) The cost of aviation fuel, which had been progressively going up since April 1946, also substantially contributed to the high costs of operation in India. (PARAGRAPH 114).

(62) The partial rebate of customs duty on aviation fuel granted by the Government of India did not give much relief to the companies, as the rise in the cost of fuel after Devaluation practically neutralized the benefit. (PARAGRAPH 114).

(63) Most of the States Governments are levying sales and other taxes on aviation fuel, the incidence of which also is bearing heavily on the cost of operation of air transport. Many of the States Governments, it is understood, have now agreed to give full or partial rebate of such taxes. (PARAGRAPH 115).

(64) There has been a tendency to reduce fares, particularly after the introduction of the night airmail services. This has accentuated the difficulties of the companies, as, while their operating costs continue to be high, their revenues have tended to go down. (PARAGRAPH 116).

(65) The activities of purely non-scheduled operators with their easy mobility, marginal organizations and little or no overheads, have adversely affected the revenues of the operating companies to some extent. (PARAGRAPH 117).

(66) The effects of the introduction of the All-up Mail scheme in April 1949 were:

- (a) a very great increase in the mail loads of all the companies, and
- (b) a substantial increase in their mail revenues, though not in the same proportion as the mail loads.

The resumption of the night airmail services in October 1949 resulted in the diversion of a good part of the mail traffic of the day operators to Himalayan Aviation, but compared to the pre-All-up Mail scheme period, the mail revenue of every company showed improvement, though the degree of improvement varied from company to company. (PARAGRAPH 118).

#### *Chapter 4—External Services*

(67) It is a striking testimony to the efficiency of Air-India International that the establishment of the India-U.K. service was operated with smoothness and without any hitch and that the operations could achieve the break-even point in two years. (PARAGRAPH 122).

(68) A loss for the first year was to be expected, taking into account that operations during the initial period involved preparation and development, and that the traffic potential could be realized only gradually. (PARAGRAPH 122).

(69) In the East, Bharat Airways' service to Bangkok is showing a poor load factor. The traffic potential of the routes to the East does not seem to be very high and competition is keen. The Indian service has to compete with better equipped and organised services and so should be in a position to offer a service which can stand comparison with them. With the proposed extension of Bharat Airways' service to Singapore, it is possible that the service may prove worthwhile. (PARAGRAPH 123).

#### *Chapter 5—Reasonable cost of operation*

(70) There is no evidence suggesting any spectacularly rapid rate of increase in traffic. Therefore, any general increase in the frequency of services on existing routes seems unlikely in the immediate future. (PARAGRAPH 127).

(71) (a) In regard to provision for depreciation of aircraft and other equipment, a constant fixed sum should be set aside each year representing depreciation of the capital cost of the aircraft and major essential items of capital spares over a life of agreed number of years: even after the book value has been written down to zero, the same amount should be set aside annually towards an obsolescence and replacement reserve fund. (PARAGRAPH 134).

(b) In determining a suitable life to be assumed in respect of each type of aircraft, account should be taken of whether the aircraft is in fact of a new type likely to remain an economic and attractive transport for some considerable time to come or whether it is of a type which has been in existence for a number of years already and is likely to be superseded on grounds of economy of operation and passenger preference within a reasonably short time. It is also necessary to recognize, in the case of aircraft purchased from Disposal Stocks the fact that the purchase price may have been far below the normal market value for similar equipment and that a higher rate of depreciation is justified in order to show a reasonable allowance towards the replacement reserve. (PARAGRAPH 134).

(c) On the above basis, depreciation to zero value in the case of the Dakota should be over a period of 4 years; in the case of the Viking, it should be over a period of 8 years; and in the case of the SO-95 and the Skymaster it should be over a period of 6 years. (PARAGRAPH 134).

(72) After careful examination of all relevant factors, the Committee decided that the reasonable rate of fuel consumption of the Dakota should, for the purpose of estimating the reasonable cost of operation, be taken at 70 gallons per hour. (PARAGRAPH 137).

(73) The high cost of fuel is a real factor in raising the cost of air transport in India. Price of aviation fuel in India is much higher than in Australia even though Australia is farther from the source of supply than India. In Australia they use 91/98 grade fuel which is cheaper than 100/130 grade fuel. But, there is no prospect of 91/98 grade fuel being made available in India at a lower cost than 100/130 grade. (PARAGRAPH 138).

(74) For the purpose of the Committee's estimation of cost of operation per hour, the cost of fuel has been calculated on the basis of the weighted average of fuel consumption at different points in India. This figure came to Rs. 2-14-0 per gallon after allowing for bulk rebate given by the oil companies. As regards cost of oil, an allowance of 5 per cent. of the cost of fuel has been assumed by the Committee to be reasonable. (PARAGRAPHS 139 and 140).

(75) The Committee understands that the standard flight crew of aircraft such as the Dakota and even the more advanced types as the Skymaster and Conqair in the United States and Australia comprises two officers only, viz., the captain and co-pilot, while the standard Indian flight crew consists of captain, co-pilot and radio operator. After carefully considering the question of the practicability of reducing cost by adopting a similar system in India, the Committee came to the conclusion that having regard to (a) the less fully developed system of air navigational radio aids provided in this country and (b) the difficult flying conditions during the monsoon, it would not be desirable at the present juncture to introduce this system. The Committee noted, however, that there were other advantages in the use of a two-man flight crew apart from reduction in salary costs, viz., increased weight pay load due to the reduction in basic operating weight and increased volumetric pay load capacity through availability of the space now occupied by the radio officer for stowage of cargo. The Committee recommends, therefore, that the situation be kept under review with the objective of introducing a two-man flight crew as soon as practicable consistently with the highest standards of safety. (PARAGRAPH 141).

(76) Prescription of limits in regard to flight crew utilization seems to be essential from the point of view of flight fatigue of pilot, etc. Even though the International Civil Aviation Organisation has not so far prescribed any limitation to maximum flying hours for crew members, the Committee recommends that the flying hours of pilots should be limited to 1000 hours per year. (PARAGRAPH 143).

(77) The analysis and scrutiny of the costs of the operating companies under the heads aircraft servicing, aircraft overhaul, operations on-costs, training, passenger services, administration, office rents and expenses, general publicity and advertising, medical and welfare, accounts and audit and miscellaneous items, show that the companies showing the higher costs do so largely because they employ greater numbers of staff to achieve given results. In other words, they are obtaining a significantly lower productivity from their employees than is the case with the operators showing relatively lower costs. The company showing the lowest output in capacity ton-miles per annum per employee also showed the highest cost under most of the expense heads referred to above, and the operator showing the highest capacity ton-mile per employee showed the lowest cost on practically all items. (PARAGRAPH 147).

(78) In estimating the reasonable cost per hour in respect of aircraft servicing, the Committee was influenced by the realization that any attempt to economise on maintenance beyond the prudent limit which can be reached with sound and efficient management, would inevitably sooner or later be reflected in a deterioration in safety margin. The Committee, therefore, thought it wise to allow some margin in this particular sphere over and above the absolute minimum which might be attainable. (PARAGRAPH 148).

(79) In regard to the periodicity of air-frame overhaul, the consensus of opinion expressed before the Committee was that there would be no risk of a deterioration in the standard of safety involved in a relaxation of the present requirement of annual overhaul to the extent of calling for an overhaul after 4000 hours of flying or not more than two years from the last overhaul, whichever limit is reached earlier. The Committee recommends that this basis should be considered by the Director General of Civil Aviation as a suitable starting point for developing a more liberal system of overhaul requirements than is at present being enforced. (PARAGRAPH 157).

(80) In the group of items, administration, office rents and expenses, operations on-costs and flight training, the level of costs is very largely a matter of company policy. An operator could probably carry on a safe and reliable service



with a very low expenditure under this heading (with the possible exception of flight training), but, on the other hand if this expenditure is reduced too far the quality of administration is likely to suffer. (PARAGRAPH 164).

(81) The Committee feels that there is room for considerable improvement in passenger services on some airlines and such improvement might assist in attracting and retaining traffic. For this reason, the Committee does not consider it desirable to adopt the lowest figure achieved under this item for the purpose of estimating reasonable cost. By the same token, there is no justification for going to the other extreme which reflects expenditure on too lavish a scale. (PARAGRAPH 165).

(82) The Committee believes that expenditure on a level representing approximately 1 per cent. of revenue is fully justified in conducting a well-planned publicity campaign in order to build up traffic to its maximum potential. It feels that some increased amounts used on this item in the right manner would be of real benefit to the Industry. Of all the operators in 1949, the one showing the lowest cost in practically all other items showed an expenditure on publicity and advertising nearest to the Committee's reasonable figure. (PARAGRAPH 167).

(83) In the case of some companies, the costing and accounts organization needs considerable strengthening in order to achieve a detailed analysis of expenditure distribution so necessary as the first step in obtaining a firm control on costs. On the other hand a number of other operators have accumulated appreciable surplus staff in this Department accounting for very high cost in regard to this item. (PARAGRAPH 169).

(84) The total reasonable costs estimated by the Committee for the operation of the Dakota, the Viking, the SO-95 and the Skymaster at different utilizations are:—

	Utilization of 1,000 hrs. Rs. per hour.	Utilization of 1,500 hrs. Rs. per hour.	Utilization of 2,000 hrs. Rs. per hour.
Dakota . . . .	624.1	571.6	541.5
Viking . . . .	897.3	789.2	731.4
SO-95 . . . .	506.8	435.9	401.1
Skymaster:			
Internal Operations	1,513.1	1,362.2	1,282.4
External Operations	1,422.3	1,262.5	..

(PARAGRAPH 171.)

(85) Standard costs charts have been prepared from which it will be possible to determine for the 4 types of aircraft mentioned (a) the appropriate cost per hour for any utilization which may be achieved or may be anticipated for a period under review, (b) the cost per mile for any particular utilization and (c) the cost per ton-mile at 100 per cent. load factor, which by the application of simple proportion could be converted for such lower load factors as may be required. The Committee recommends that these cost charts should be regarded as a standard by which operating expense results of the companies may be estimated and compared in the ensuing period. The curves could be adjusted, if necessary, for changes of significant degree occurring in basic factors such as the cost of fuel, a major change in crew salaries and alteration of the permissible hours between engine overhauls or a similar liberalisation in

(75) The Committee understands that the standard flight crew of aircraft such as the Dakota and even the more advanced types as the Skymaster and Convair in the United States and Australia comprises two officers only, viz., the captain and co-pilot, while the standard Indian flight crew consists of captain, co-pilot and radio operator. After carefully considering the question of the practicability of reducing cost by adopting a similar system in India, the Committee came to the conclusion that having regard to (a) the less fully developed system of air navigational radio aids provided in this country and (b) the difficult flying conditions during the monsoon, it would not be desirable at the present juncture to introduce this system. The Committee noted, however, that there were other advantages in the use of a two-man flight crew apart from reduction in salary costs, viz., increased weight pay load due to the reduction in basic operating weight and increased volumetric pay load capacity through availability of the space now occupied by the radio officer for stowage of cargo. The Committee recommends, therefore, that the situation be kept under review with the objective of introducing a two-man flight crew as soon as practicable consistently with the highest standards of safety. (PARAGRAPH 141).

(76) Prescription of limits in regard to flight crew utilization seems to be essential from the point of view of flight fatigue of pilot, etc. Even though the International Civil Aviation Organisation has not so far prescribed any limitation to maximum flying hours for crew members, the Committee recommends that the flying hours of pilots should be limited to 1000 hours per year. (PARAGRAPH 143).

(77) The analysis and scrutiny of the costs of the operating companies under the heads aircraft servicing, aircraft overhaul, operations on-costs, training, passenger services, administration, office rents and expenses, general publicity and advertising, medical and welfare, accounts and audit and miscellaneous items, show that the companies showing the higher costs do so largely because they employ greater numbers of staff to achieve given results. In other words, they are obtaining a significantly lower productivity from their employees than is the case with the operators showing relatively lower costs. The company showing the lowest output in capacity ton-miles per annum per employee also showed the highest cost under most of the expense heads referred to above, and the operator showing the highest capacity ton-mile per employee showed the lowest cost on practically all items. (PARAGRAPH 147).

(78) In estimating the reasonable cost per hour in respect of aircraft servicing, the Committee was influenced by the realization that any attempt to economise on maintenance beyond the prudent limit which can be reached with sound and efficient management, would inevitably sooner or later be reflected in a deterioration in safety margin. The Committee, therefore, thought it wise to allow some margin in this particular sphere over and above the absolute minimum which might be attainable. (PARAGRAPH 148).

(79) In regard to the periodicity of air-frame overhaul, the consensus of opinion expressed before the Committee was that there would be no risk of a deterioration in the standard of safety involved in a relaxation of the present requirement of annual overhaul to the extent of calling for an overhaul after 4000 hours of flying or not more than two years from the last overhaul, whichever limit is reached earlier. The Committee recommends that this basis should be considered by the Director General of Civil Aviation as a suitable starting point for developing a more liberal system of overhaul requirements than is at present being enforced. (PARAGRAPH 157).

(80) In the group of items, administration, office rents and expenses, operations on-costs and flight training, the level of costs is very largely a matter of company policy. An operator could probably carry on a safe and reliable service

with a very low expenditure under this heading (with the possible exception of flight training), but, on the other hand if this expenditure is reduced too far, the quality of administration is likely to suffer. (PARAGRAPH 164).

(81) The Committee feels that there is room for considerable improvement in passenger services on some airlines and such improvement might assist in attracting and retaining traffic. For this reason, the Committee does not consider it desirable to adopt the lowest figure achieved under this item for the purpose of estimating reasonable cost. By the same token, there is no justification for going to the other extreme which reflects expenditure on too lavish a scale. (PARAGRAPH 165).

(82) The Committee believes that expenditure on a level representing approximately 1 per cent. of revenue is fully justified in conducting a well-planned publicity campaign in order to build up traffic to its maximum potential. It feels that some increased amounts used on this item in the right manner would be of real benefit to the Industry. Of all the operators in 1949, the one showing the lowest cost in practically all other items showed an expenditure on publicity and advertising nearest to the Committee's reasonable figure. (PARAGRAPH 167).

(83) In the case of some companies, the costing and accounts organization needs considerable strengthening in order to achieve a detailed analysis of expenditure distribution so necessary as the first step in obtaining a firm control on costs. On the other hand a number of other operators have accumulated appreciable surplus staff in this Department accounting for very high cost in regard to this item. (PARAGRAPH 169).

(84) The total reasonable costs estimated by the Committee for the operation of the Dakota, the Viking, the SO-95 and the Skymaster at different utilizations are:—

	Utilization of 1,000 hrs. Rs. per hour.	Utilization of 1,500 hrs. Rs. per hour.	Utilization of 2,000 hrs. Rs. per hour.
Dakota . . . .	624.1	571.6	541.5
Viking . . . .	897.3	789.2	731.4
SO—95 . . . .	506.8	435.9	401.1
Skymaster:			
Internal Operations	1,513.1	1,362.2	1,282.4
External Operations	1,422.3	1,262.5	..

(PARAGRAPH 171.)

(85) Standard costs charts have been prepared from which it will be possible to determine for the 4 types of aircraft mentioned (a) the appropriate cost per hour for any utilization which may be achieved or may be anticipated for a period under review, (b) the cost per mile for any particular utilization and (c) the cost per ton-mile at 100 per cent. load factor, which by the application of simple proportion could be converted for such lower load factors as may be required. The Committee recommends that these cost charts should be regarded as a standard by which operating expense results of the companies may be estimated and compared in the ensuing period. The curves could be adjusted, if necessary, for changes of significant degree occurring in basic factors such as the cost of fuel, a major change in crew salaries and alteration in the permissible hours between engine overhauls or a similar liberalisation in

the periodicity of air-frame overhaul. The Committee suggests, however, that unless and until such changes assume sufficient magnitude, say, such as would change the overall total by  $2\frac{1}{2}$  per cent., minor adjustments of standard cost totals should not be contemplated. The Committee feels it desirable that the Industry should have a fixed target of expenditure at which to aim and that such target having once been determined, as has been done by the Committee, it should, as far as possible, remain stable for a period long enough to provide a reasonable opportunity of measuring the ability of various sections of the Industry to achieve working results within the set limit. (PARAGRAPHS 173—176).

(86) The Committee's standard cost figures do not include any allowance for profit. In other words, if passenger fares, freight rates and mail rates were worked out so as to produce at an assumed reasonable load factor an income per mile equal to the cost arrived at in the charts, an operator would just break even on his overall results. (PARAGRAPH 178).

(87) Typical results drawn from the standard cost charts relating to the types of aircraft now in service on the internal routes when operated on typical stage lengths have been tabulated. For comparative purposes, a uniform load factor of 65 per cent. has been assumed. (PARAGRAPH 179).

(88) If load factors of, say, 75 per cent. or higher are consistently maintained on a particular route, it is a clear indication that a proportion of the flights are actually departing completely full and that in all probability traffic is being turned away on those sections. When this state of affairs is reached, the only way in which additional traffic can be catered for is by providing additional frequencies of schedules. Operation of an additional frequency lowers the average load factor at least temporarily well below 65 per cent., although if the operator's judgment is proved correct it will be gradually built up again to a remunerative level. It is only by the addition of frequencies that the desired and expected growth of air transport can be achieved, and the Committee feels that it will be unrealistic to consider the cost results and corresponding overall tariff levels on the estimation of an average load factor appreciably higher than 65 per cent., although in the case of particular routes, where a very high load factor has been achieved and maintained, the assumption of a load factor higher than 65 per cent. would not be unjustified. (PARAGRAPH 179).

(89) The Dakota and the Viking when employed on stage distances typical of their actual application show very similar equivalent costs per seat-mile ranging between approximately  $3\frac{1}{4}$  and  $3\frac{1}{2}$  annas depending on utilization. If either aircraft is used on a stage length appreciably beyond the optimum range for the type, a drop in pay load raises the specific cost to a marked degree. For instance, the Viking operating Bombay—Calcutta non-stop (1036 miles) at 65 per cent. load factor shows an equivalent cost per seat-mile of 4·5 annas. Similarly, the Dakota operating Bombay—Madras non-stop (641 miles) shows at 65 per cent. load factor an equivalent cost per seat-mile of 3·96 annas. (PARAGRAPH 180).

(90) Even at its optimum stage distance, the SO-95 shows a cost level per seat-mile of 5 to  $5\frac{1}{2}$  annas, i.e., more than 50 per cent. in excess of the other two types. This illustrates the extreme difficulty of obtaining profitable operations with a small type of aircraft at least within the existing low rate structure. (PARAGRAPH 180).

(91) In India, where fuel is extremely costly (even kerosene being likely to follow the pattern of petrol in this regard) and labour is relatively less expensive and where the volume of traffic does not appear likely to be enough for greatly increased frequencies of schedules, the conditions cannot be said to favour the introduction of the gas turbine. The Committee has, therefore, not made any estimate of the economics of gas turbine or pure jet types of aircraft under Indian conditions. (PARAGRAPH 181).

(92) Typical comparative results of the costs of operation of the Bristol New Type 170, the Airspeed Ambassador and the S.A.A.B. Scandia, have been tabulated. At 65 per cent. load factor, the Bristol New Type shows a result almost identical with that for the Dakota. On a 600 mile range, the Ambassador at 1500 hours utilization shows a result 11 per cent. better than the Viking on the same stage, and at 2000 hours utilization, the advantage is increased to 16 per cent. in favour of the Ambassador. At 300 miles the Scandia at 1500 hours utilization is about  $3\frac{1}{2}$  per cent. more economical than the Dakota and at 2000 hours utilization the improvement rises to 9 per cent. in favour of Scandia. These results show that in spite of their high purchase price, more modern aircraft of efficient design could probably be operated with an economy competitive with that of the Dakota and the Viking, the chief obstacle to their adoption being the heavy capital outlay involved. It is, however, clear that the cost of operation of such types is very sensitive to the degree of utilization achieved and that, unless high utilization could be obtained their operation would be uneconomic. The problem then is one of deciding whether the traffic potential in India is such that a high degree of utilization with a high capacity aircraft can actually be achieved without having to operate at unremuneratively low load factor. (PARAGRAPHS 183—186).

(93) None of the three new types of aircraft examined shows costs as low as the 50 seat or 61 seat Skymaster. In the case of the 61 seat Skymaster at 2000 hours utilization, the equivalent cost per seat-mile is 25 per cent. below that of the Viking, *viz.*, 2.4 annas per mile (without allowance for profit). The Committee is of the opinion that it is in the effective application of this aircraft that the most practical possibility of economic achievement of passenger fare levels of the order of  $2\frac{1}{2}$  annas a mile lies. This would necessitate the availability of 40 passengers per trip as against 16 to 20 at present forming the average load travelling by Dakota or Viking. The difficulty then is with regard to the restricted traffic potential at present available. (PARAGRAPH 187).

(94) If all air transport operations in India were unified under one management, the cost of operation would be reduced by about  $8\frac{1}{2}$  per cent. due to (a) reduction of costs under the items servicing, overhaul, administration, office rents, operations on-costs and training, accounts and audit, passenger services and traffic sales and agencies; and (b) reduction in cost consequent on increased utilization, which would be possible as there would be full freedom to develop operational route plans for the airline net-work as a whole. (PARAGRAPH 188).

(95) Under unified operation, there would be the possibility of making effective use of the Skymasters on heavy traffic routes, particularly the Bombay-Delhi, Bombay-Calcutta and Delhi-Calcutta routes. The use of Skymaster equipment with an interior layout of 61 seats would bring about an appreciable reduction in operating cost per ton mile and hence in the level of economic fares. The success of this operation would depend on the availability of sufficient traffic to maintain reasonable load factors. It is not clear that such traffic demand exists at the present time. The Committee thinks, however, that it should be possible within the near future to develop more traffic on the routes mentioned and, if a unified system of operation is adopted, the situation should be kept under constant review in order to use the Skymaster on the three routes referred to. (PARAGRAPH 190).

## CHAPTER 6

### Reorganisation of the Air Transport Industry

(96) The present pattern of operations, so far as term licence-holders are concerned, has been stabilised for ten years. The Committee has to accept this position and suggest possible ways of reorganization of the Industry for the next five years on the footing that the six term licence-holders will have the right to operate their routes unless their number is reduced by voluntary merger. (PARAGRAPHS 195 AND 196).

(97) An ideal pattern would be to have only four operators with their bases at Bombay, Delhi, Calcutta and Hyderabad. This would be a good geographical and zonal distribution and would coincide with the existence of very good facilities for servicing and overhaul at the four places. (PARAGRAPH 197).

(98) Fusion of Bharat Airways and Airways (India), both of whom operate from Calcutta for the most part in the same area, would conduce materially to an increase of efficiency, elimination of competition and lowering of costs, but the Committee senses some difficulty in bringing about such a fusion. (PARAGRAPH 197).

(99) The Committee understands that there have been negotiations for a merger between Air Services of India and Deccan Airways. The Committee strongly recommends such a union and would suggest that the combined unit should operate from Hyderabad where very good maintenance and overhaul facilities now exist. (PARAGRAPH 197).

(100) To enable the term licence-holders to operate on an economic basis, it is necessary to give them adequate work load. The Committee can find no new routes for allocation to them which would appreciably increase their traffic. The only way in which the work of the term licence-holders could be increased is by the elimination of the provisional licence-holders from the field of scheduled operations and the allotment of their routes amongst the term licence-holders on a suitable basis. (PARAGRAPH 198).

(101) Indian Overseas Airlines, which has incurred heavy losses, holds a provisional licence for operating the day stopping service on the route Bombay—Nagpur—Calcutta. It holds no other licence and there is little likelihood of this Company being able to make an economic success of its operations. Its provisional licence for the Bombay—Nagpur—Calcutta route should not be renewed when it expires at the end of September 1950. (PARAGRAPH 199).

(102) The Committee is of the view that the air companies operating day services were not unjustified in asking Government that they should be guaranteed a minimum revenue of Rs. 3 per mile for the operation of the night services. (PARAGRAPH 202).

(103) In deciding the question of renewing Himalayan Aviation's provisional licence in January 1950 for a further period of one year, the Air Transport Licensing Board should have attached more importance to the interests of the Industry as a whole than to those of one individual operator. (PARAGRAPH 203).

(104) The extension of the licence of Himalayan Aviation deprived the older airlines of a substantial amount of traffic which would have helped them in their financial difficulties. (PARAGRAPH 203).

(105) It would have been in the best interests of the Industry if the established airlines had been allowed to operate the night services and a new scheduled operator not brought into the field. (PARAGRAPH 203).

(106) Himalayan Aviation's operation of the night service, while being excellent from the operational point of view, has not been a financial success. The Company's costs are increasing, while its rate of earnings per ton-mile is tending to decrease. Any increase in frequency to cater for additional passenger and freight traffic will only add to the Company's losses, as the mail revenue which is now subsidizing its passenger traffic practically remains constant. (PARAGRAPH 204) (PARAGRAPH 204).

(107) Himalayan Aviation is a private limited company with its capital predominantly owned by two or three individuals, while the capital of the other scheduled companies is subscribed by large sections of the public. (PARAGRAPH 207).

(108) If the Air Transport Industry is to be rehabilitated and if it becomes necessary for certain operators to go out of scheduled operations, the least harm would be done to the public and to the Industry as a whole if the provisional licence of Himalayan Aviation is not renewed when it expires at the end of January 1951. (PARAGRAPH 207).

(109) There is no particular advantage in continuing the provisional licence of Kalinga Airlines when the traffic carried by it on the Calcutta—Agartala route could well be managed by the older scheduled operators based at Calcutta, viz., Airways (India) and Bharat Airways. The Committee cannot visualize in any system of rationalization the continuance of a unit operating on such a small scale as Kalinga Airlines when it is proposing the elimination of much bigger units from the field of scheduled operations. (PARAGRAPH 208).

#### CHAPTER 7

#### Redistribution of Routes

(110) Air-India should retain its present routes for which it holds licences. Its provisional licence for the night air service on the route Bombay—Delhi should be converted into a term licence. There is no justification for giving Air-India any further route-mileage. (PARAGRAPH 210).

(111) Indian National Airways should retain all its present routes for which it holds licences. It should also be given, as soon as practicable, a licence for running a night service between Delhi and Calcutta direct. This would increase its flying hours by about 3,000 per annum. (PARAGRAPH 210).

(112) On the assumption that the proposed merger of Air Services of India and Deccan Airways will materialise, the new company should take over the routes for which Air Services of India and Deccan Airways at present hold term licences. There should then be some judicious re-arrangement in the operation of the services in order to eliminate wasteful flying hours. The new company should, in addition, be given the night service at present operated by Himalayan Aviation on the route Delhi—Nagpur—Madras. (PARAGRAPH 210).

(113) Airways (India) should retain the present routes for which it holds term licences. It should, in addition, be given licences for the Bombay—Nagpur—Calcutta night service and the stopping day service on that route at present operated by Indian Overseas Airlines. This will increase the Company's flying hours by about 4,000 per annum. (PARAGRAPH 210).

(114) Bharat Airways should retain the present routes for which it holds term licences. The elimination of Kalinga Airlines from scheduled operations would give it the whole of the freight traffic between Calcutta and Agartala, a route which it is already operating at present. (PARAGRAPH 210).

(115) If a licence for the Calcutta—Patna—Khatmandu route is to be given in the future, the airline which could operate it most economically would be Bharat Airways. (PARAGRAPH 210).

#### CHAPTER 8

#### Fixation of fares, freight rates and mail rates

(116) The revenues of the operating companies would depend substantially on the tariffs in regard to passenger fares and freight and mail rates charged by the companies, particularly passenger fares, as their revenues are very largely derived from passenger traffic. (PARAGRAPH 220).

(117) Except for the introduction of Himalayan Aviation's night service in October 1949, the changes in the levels of fares prior to that date did not have any adverse effect on the revenues of the companies. (PARAGRAPH 224).

(118) Fixation of a proper level of passenger fares must take into account— (a) the costs of operation with the addition of a reasonable profit, (b) the capacity of the traveller to pay, (c) the need for expansion of air traffic and (d) the prevailing rates for surface transport. (PARAGRAPH 225).

(119) For 1500 hours' utilization and at 65 per cent. load factor, the passenger fare to meet the bare cost of operation of the Dakota (without any provision for profit) will have to be 3.39 annas per mile. In the case of a Viking, the corresponding fare would be 3.5 annas per mile. (PARAGRAPH 225).

(120) Having regard to the interest of nationalized railway transport, the State cannot subsidize air transport to underseil the State railways, while the costs of air transport are higher. For the convenience, saving of time and certain incidental advantages secured through air travel, the air passenger must be prepared to pay more than what he pays for first class travel by rail. (PARAGRAPH 225).

(121) The Committee, on the other hand, does not think that as a general rule the maximum fare on the internal trunk routes should be more than 4 annas a mile. (PARAGRAPH 230).

(122) In special cases, such as the Bombay—Kathiawar route, the Delhi—Srinagar route and some sectors on the trunk routes, there is justification for permitting a higher fare on account of the increased cost of operation of these services and the convenience afforded to the passengers when compared to the difficulties of surface travel. (PARAGRAPH 230).

(123) The Committee is of the view that generally the passenger fares should be fixed at a level which would give the operator at a reasonable load factor a return of 10 per cent. on his fixed capital assets. (PARAGRAPH 226).

(124) The Committee has accordingly calculated the passenger fares which should be charged on each of the routes at present in operation in India to give the operator concerned, at certain assumed reasonable load factors, a profit of 10 per cent. on the fixed assets of the operator. (PARAGRAPH 226).

(125) On the basis of these fares and bearing in mind the fact that fixation of fares over 4 annas a mile on internal trunk routes might prove deterrent to traffic, the Committee has drawn up three ranges of fares for the routes in India and to neighbouring countries. (PARAGRAPH 229).

(126) The first category includes the inland trunk routes for which the reasonable fares may vary from 3½ to 4 annas per mile. The second category consists of routes where the reasonable passenger fares may vary between 3½ and 4½ annas a mile. The third category includes international routes to neighbouring countries and sectors on the Delhi—Amritsar—Srinagar—Jammu and Bombay—Kathiawar—Karachi routes where the reasonable fares may vary between 4½ and 5½ annas a mile. (PARAGRAPH 230).

(127) On routes on which two companies operate air services on a competitive basis, the Committee recommends that actual fares should be fixed, bearing in mind the general practice that the slow stopping service is permitted to charge a slightly lower rate for a through passenger than the fast direct service. On this basis, the Committee has recommended that the rates of passenger fares should be fixed for the routes concerned, e.g., Bombay—Calcutta, Delhi—Calcutta, Bombay—Delhi, etc. (PARAGRAPH 230).

(128) The levels of fares recommended by the Committee are intimately linked up with the load factors which have been assumed as reasonable. Any appreciable drop in load factors would necessitate a review of the fare structure. (PARAGRAPH 231).



(129) In relation to railway fares, the fare levels proposed by the Committee are comparable with fares charged in other countries. (PARAGRAPH 232).

(130) Freight rates should be related to passenger fares for each route subject to maximum of  $\frac{1}{2}$  per cent. of the passenger fare per pound of freight. There is no need to fix a minimum. (PARAGRAPH 233).

(131) The Committee considers that there is considerable force in the point of view of the Posts and Telegraphs Department that the payment to the airlines for the carriage of mails should not contain any element of subsidy. (PARAGRAPH 238).

(132) The rate for the carriage of mails should be slightly above the freight rate for the reason that mails have to be given priority of transmission irrespective of any variations in the volume of mail. The Committee accordingly recommends that the mail rate should be freight rate plus  $12\frac{1}{2}$  per cent. On this basis, the mail rate works out to Rs. 3-1-0 per ton-mile and should be fixed at that figure. (PARAGRAPH 242).

(133) For second class mails carried by air, a suitable rate of payment to the air carriers would be the freight rate less 25 per cent. This works out to Rs. 2 per ton-mile which should be fixed as the rate payable to the carriers for second class mail. (PARAGRAPH 243).

(134) Remuneration for the carriage of mail on the Indo-Ceylon, Indo-Pakistan, Ceylon-Pakistan and Indo-Burma routes should be 50 per cent. over the internal rate, viz., Rs. 4-9-6 per ton-mile for first class mail. For second class mail and parcels, it should be 25 per cent. over the internal rates or Rs. 2-8-0 per ton-mile. (PARAGRAPH 244).

(135) In respect of other Indian external services, the rates for carriage of first-class and second-class mails and air parcels should be the same as those now being paid to B.O.A.C. (PARAGRAPH 244).

#### CHAPTER 9

#### Financial Results of the Re-organisation

(136) Statements have been prepared showing the probable financial results of the operations of the companies during the first quarter of 1950 on the basis of their operating costs for the year 1949 (or 1948/49 or 1949/50 as the case may be) and giving an estimate of what the results would be if the costs were brought down to the level of the Committee's standard costs. In the case of Air-India, for instance, on the basis of the Company's 1949 level of cost, its operations would (without taking non-transportation revenue into account) have resulted in a loss of Rs. 15 lakhs for the first quarter of 1950 while on the standard costs evolved by the Committee the result would be a break-even. Similar improvement would be noticed in the cases of most other companies. (PARAGRAPHS 245 AND 246).

(137) A second set of statements have been prepared indicating the financial results of the operations of the companies under the Committee's Scheme of Reorganization. In the case of Air-India, its total operations for a year under the Committee's Scheme would result in a profit of Rs. 4-35 lakhs. If the Company's non-transportation revenue were added, the total profit would be Rs. 23-25 lakhs. The statements show that the operations of every company under the Committee's scheme would result in a profit, small or large. (PARAGRAPHS 247—252).

(138) If the proposed merger of Air Services of India and Deccan Airways does not materialize and the two companies continue to operate the routes for which they are now holding the licences, Deccan Airways would incur a loss of Rs. 1.21 lakhs and Air Services of India would make a profit of Rs. 1.61 lakhs (non-transportation revenue being included in both cases). (PARAGRAPH 253).

(139) If the Committee's Reorganization Scheme is given effect to, it will result in about 25 Dakota aircraft being rendered surplus, taking into account only the operations of the term licence-holders. If these companies are to bring down their operating costs, it will be necessary to allow them to dispose of these surplus aircraft. As there is not likely to be any market for them in India, the companies would have to be allowed to sell them out of the country, subject to this being permissible. (PARAGRAPH 254).

(140) The Committee is of the view that it would be a pity to allow these aircraft, which were purchased at quite low prices, to be sold out of India. It suggests that it should be considered whether some use for the excess aircraft could not be found by the Indian Air Force. (PARAGRAPH 255).

(141) If the Indian Air Force also cannot find any immediate use for it, Government should consider whether arrangements could not be made to keep the aircraft in storage on a "care and maintenance" basis for a few years. The Committee understands that the cost of such maintenance would be about Rs. 10,000 per annum per aircraft, involving a total expenditure of Rs. 2½ lakhs per annum. The Committee considers that this expenditure would be well worthwhile, even if it were to be regarded as an insurance against contingencies. (PARAGRAPH 254).

(142) Reduction of costs by the operating companies under the Committee's Reorganization Scheme would involve retrenchment of staff. Technical personnel in the category of pilots are not likely to be rendered surplus, having regard to the fact that the Committee has recommended that pilot utilization should not exceed 1,000 hours per year. (PARAGRAPHS 255-256).

(143) There is likely to be some surplus in the category of Radio Officers. These persons should be considered for absorption in appropriate posts in the Civil Aviation Department and the Indian Air Force. (PARAGRAPH 257).

(144) In regard to ground technical staff, the Committee hopes that it will not be necessary to throw out of employment the skilled category of ground engineers. Retrenchment should commence with the unskilled and semi-skilled categories, as it is desirable to retain in the Industry the maximum number of qualified experienced personnel. The Committee understands that there will be a possibility of skilled and semi-skilled personnel from the Air Transport Industry being utilized by the Indian Air Force, provided the retrenched personnel are prepared to abide by the regulations of the Air Force and are amenable to Service discipline. (PARAGRAPH 258).

(145) There should not be any difficulty in the absorption in other fields of such clerical staff as are retrenched by the operating companies. (PARAGRAPH 259).

#### CHAPTER 10 Financial Assistance by Government

(146) Experience the world over shows that the successful operation of air transport services has been possible only through financial and other assistance given by the State at some stage or other. The Committee, therefore, assumes that Government do recognize the principle of financial assistance to the Air Transport Industry under certain circumstances. (PARAGRAPH 264).

(147) The present system of assistance by which the operating companies are given rebate of customs duty on aviation fuel consumed by them to the extent of 9 annas per gallon is not satisfactory. This system does not take into account the reasonable needs of each company, but gives assistance at a flat rate depending merely upon the amount of aviation fuel consumed by each company. (PARAGRAPH 265).

(148) The Committee recommends the following method for estimating the break-even need of each company. Having decided on the scale of operations of each company, its total expenditure during a year should be calculated on the basis of the standard costs as worked out by the Committee. A reasonable estimate of its potential revenue on its operations should then be made on the basis of an estimate of the total transportation likely to be performed by the company during the year and the rate of revenue likely to be earned which in turn will depend on the tariff structure. The short-fall of estimated revenue from estimated costs represents the break-even need of the company. (PARAGRAPH 266-267).

(149) Each company should be allowed a small margin of profit over and above the break-even need. This should be at the rate of 8 per cent. on fixed capital assets; this would provide for income-tax amounting to about  $3\frac{1}{2}$  per cent. and reserve  $1\frac{1}{2}$  per cent., leaving not more than  $3\frac{1}{2}$  per cent. to the company for distribution to share-holders as dividend. (PARAGRAPH 269).

(150) The assessment of the financial position of the operating companies under the Committee's Scheme of Reorganization shows that including non-transportation revenue each operating unit would earn a gross profit of more than 8 per cent. on its fixed assets. Thus no assistance from Government would be necessary under the Committee's Scheme. (PARAGRAPH 270).

(151) The Committee's calculations are based on two important assumptions both of which the Committee considers reasonable, namely, (a) that the companies bring down their costs to the level of the Committee's standard costs, and (b) that the load factors assumed are maintained. (PARAGRAPH 271).

(152) The recent orders of the Government of India restricting general permission to travel by air on duty at an officer's discretion, to officers drawing a pay of Rs. 2,250 and over will have the effect of depressing passenger traffic. The Committee feels that one of the best ways for Government to give assistance to the Air Transport Industry is to utilise the air network for their day to day activities to the greatest possible extent. The Committee suggests that Government should consider reverting to the position which prevailed prior to the issue of their orders dated 27th June 1950. (PARAGRAPH 272).

(153) The Committee expects that if its Scheme is implemented, it should be possible for the operating companies to become self-sufficient from 1st January 1953. (PARAGRAPH 273).

(154) To provide for the contingency of certain of the Committee's forecasts not being borne out through circumstances beyond the control of the operating companies, a review of the position should be undertaken both in regard to costs and revenue sometime about October 1952, when the results of the companies' operations under the Committee's Scheme for 18 months would be available. (PARAGRAPH 273).

(155) To enable the companies to bring down their costs in an orderly manner, it would be necessary for Government to continue their present financial assistance of partial rebate of petrol duty for some time more. The Committee recommends that for the period from 1st October 1950 to 31st December 1951,

the rebate should continue at the present rate of 9 annas per gallon of aviation fuel consumed. For the year 1952, the rebate should be reduced to 6 annas a gallon. (PARAGRAPH 274).

(156) This interim assistance should apply only to scheduled operations and not to non-scheduled operations, whether performed by scheduled operators or others. Non-scheduled operations should be on a self-supporting basis and no Government assistance is justified. (PARAGRAPH 275).

(157) The task of assessing the reasonable needs of the Industry for the future should be entrusted to the Air Transport Licensing Board, who should accordingly undertake the review in October 1952 recommended by the Committee. (PARAGRAPH 276).

(158) In assessing the needs of the Industry, the Board should follow the same methods which the Committee has adopted. (PARAGRAPH 276).

(159) The amount of assistance for a particular year having been assessed in advance (after calculating the break-even need of each company and the margin of profit required), the amount so fixed should not be varied, whatever the actual results of the operations for the year for which the subsidy is fixed. If any company is able to operate at lower costs than the standard costs or to earn revenue higher than the estimated revenue, it would be entitled to keep the additional profit earned thereby. If, on the other hand, it does not bring its costs down to the standard costs level or if the actual revenues are less than those estimated, the company must bear the loss involved. The results of each year's operations, however, would be taken into account for assessing the financial assistance required for the following year. (PARAGRAPH 276).

(160) This method of assistance will have the merit that while the operator would know in advance the precise amount of assistance he will get in the ensuing year, he would still be left with the incentive to improve his financial results through his own efforts by reducing costs and developing traffic to the maximum. (PARAGRAPH 276).

(161) In order to ensure that the future profits made by the Industry as a result of assistance given by Government are not frittered away, the following restrictions should be imposed on the disposal of profits:—

- (a) so long as a company receives a subsidy from Government, this subsidy should first be utilised to meet the operating loss, if any, and the prescribed contribution to the reserve. Out of the balance, if any, a dividend of more than 3½ per cent. should not be given and any balance still left should be paid into a special reserve fund earmarked for replacements and development; and
- (b) when the company begins to earn a profit without assistance from Government, it should not declare a dividend exceeding 5 per cent. until an amount equal to the total subsidy, if any, received by it from Government for the period commencing from 1st January 1953, has been paid into the special reserve fund mentioned above. (PARAGRAPH 277).

(162) In the exercise of general supervision over frequencies, schedules, etc., of the operating companies, the Air Transport Licensing Board should allow the companies some more latitude in these matters than appears to have been the practice in the past. (PARAGRAPH 278).

(163) The Committee considers it wrong in principle that the Deputy Director General of Civil Aviation should be a member of the Air Transport Licensing

Board along with the Director General of Civil Aviation. Government might also consider whether under the arrangement proposed by the Committee by which the Board will recommend to Government the amount of assistance which will be required by the Air Transport Industry, it will be quite appropriate to have a Cabinet Minister as the Chairman of the Board. (PARAGRAPH 279).

(164) The Committee recommends that the Air Transport Licensing Board should be reconstituted as follows:—

- (a) A chairman who should be a person of high judicial, legal or administrative experience. As there is not likely to be sufficient work for a full-time chairman throughout the year, the Committee suggests that the services of a retired High Court Judge or other person of similar status on a basis of honorarium for about 9 months of the year and full pay for the remaining 3 months when the Board's work will occupy his full attention, may be obtained, and
- (b) two members, of whom one should be the Director General of Civil Aviation or his representative and the other, a representative of the Ministry of Finance. (PARAGRAPH 279).

(165) The Board will have to maintain its own staff for examining and analysing the data placed before it to enable it to decide the need of the air transport companies for subsidy. The Board should accordingly have a full time secretary who should be a person with knowledge of air transport and of the level of a Director in the Civil Aviation Department. The secretary will have under him, besides the usual secretariat personnel, a small staff including 2 or 3 persons with appropriate technical experience of the rank of Operations Officers in the Civil Aviation Department. (PARAGRAPH 279).

(166) The Board's office should be distinct from the Civil Aviation Directorate. (PARAGRAPH 279).

(167) The services of the Cost Accounts Branch of the Ministry of Finance should be made available to the Air Transport Licensing Board whenever required. (PARAGRAPH 279).

(168) The Board may, in the course of carrying out its functions, find it necessary to have the advice of a high level technical expert and in such cases, the services of such an expert should be obtained for it. (PARAGRAPH 279).

(169) The accounts of the operating companies should be maintained on a uniform basis. The Air Transport Licensing Board should, in consultation with the Cost Accounts Branch, devise a suitable system for this purpose. It is also necessary to have one uniform financial year for all the companies and the calendar year would be appropriate for the purpose. (PARAGRAPH 280).

## CHAPTER II Non-scheduled operators

(170) Though there are restrictions imposed by D.G.C.A. on non-scheduled operators to guard against unfair competition in the field of scheduled operations, these restrictions seem to be circumvented in practice in numerous ways. (PARAGRAPH 285).

(171) The complete elimination of non-scheduled permit-holders would not make available to the scheduled operators any considerable additional flying. (PARAGRAPH 288).

(172) The non-scheduled operator is usually a pioneer in the field of civil air transport. He explores new avenues of traffic and promotes air-mindedness amongst the people. (PARAGRAPH 289).

(173) There are some well-established non-scheduled operators in India and, if the provisional licences of Himalayan Aviation, Indian Overseas Airlines and Kalinga Airlines are not renewed, they would probably continue operations in the non-scheduled field. These are well-organized companies against whom the charge of marginal and weak establishments cannot be sustained. (PARAGRAPH 290).

(174) The continuance of non-scheduled operators would afford a certain amount of desirable competition in the purely non-scheduled field. (PARAGRAPH 291).

(175) Non-scheduled operations should be allowed only subject to the following conditions:—

- (i) No non-scheduled operator should be allowed to carry out a flight on routes or between points which are substantially served by scheduled air services except on occasions when the scheduled operator concerned is not in a position to undertake the charter.
- (ii) The D.G.C.A., in order to avoid unhealthy competition, should prescribe the minimum charter rates below which no charter may be undertaken.
- (iii) The Committee does not consider it necessary that maximum rates need be prescribed. If the D.G.C.A. finds that circumstances exist which require that a maximum rate should be fixed, he may do so, but it should be recognized that in special circumstances the maximum may require to be exceeded; for example, the operator may be called upon to take the aircraft to a place where there are no servicing facilities and it may be necessary for the operator to carry his own staff for servicing his aircraft at the other end. (PARAGRAPH 292).

(176) Before any new permits for purely non-scheduled operations are issued, the D.G.C.A. must satisfy himself that there is real need for issuing more permits and that the scheduled operators are not in a position to handle the entire traffic. (PARAGRAPH 292).

#### CHAPTER 12 External services

(177) It would be of advantage if both the Eastern and Western external services were in the hands of one operator. At least one service a week of the three or four services a week operated to the West could operate to Bangkok, Singapore and back (across India touching Bombay and Calcutta). This would enable the Indian operator to get some portion of the traffic which goes from the West to South East Asia and *vice versa*. (PARAGRAPH 296).

(178) Taking into account, however, the conditions as they are at present, the Committee is of the view that external services to the East may continue to remain in the hands of Bharat Airways. (PARAGRAPH 296).

(179) Further increases in the frequencies of Air-India International's services to the U.K. and East Africa must depend upon the Company's own estimate of what additional traffic is available. The Committee has no doubt that Air-India International will not be slow to take advantage of any additional load offering that may be in sight for increasing its frequencies. (PARAGRAPH 297).

(180) As regards extension from London to New York, having regard to the fact that there are a very large number of services at present operating between Europe and U.S.A., a service on a weekly frequency would be under a severe handicap in competing with the other companies. The traffic available to Air-India International would thus be very restricted. The Committee recommends, however, that the feasibility of extending the service even on a weekly basis from London to New York should be examined and given practical shape at the earliest opportunity. (PARAGRAPH 298).

(181) The Committee understands that the allocation of common expenditure incurred by Air-India between Air-India and Air-India International has been the subject of considerable discussion during the last two years between Government and Air-India and is likely to continue to be so in the future. The interests of both the Companies require that definite principles should be laid down and the Committee recommends that early steps should be taken by the Government of India to arrive at precise agreed principles for the allocation of such expenses. (PARAGRAPH 299).

(182) Bharat Airways has just been given a licence to extend its Calcutta—Bangkok service to Singapore. Its further extension to Indonesia and Australia will have to wait for some time. (PARAGRAPH 300).

(183) Even on the route to Bangkok and Singapore, Bharat Airways faces competition from airlines which are equipped with aircraft more modern than Sky-masters. The Company's present load factor is low, but it expects that it will improve within the next two or three years. Unless some kind of financial assistance is given by Government the Company will not be able to operate the service at a loss indefinitely. The Committee understands that Government have decided to give the Company a subsidy to cover its actual loss not exceeding Rs. 6 lakhs during the first year of its operations. If the Company shows efficiency in running the service during this year and the financial results correspond approximately to the estimates of the Company, the Government of India should continue to give assistance to the Company. On this basis, an assurance of subsidy not exceeding Rs. 4½ lakhs during the second year and Rs. 1.1 lakhs during the third year may be given by Government. Such an assurance will dispel the feeling of uncertainty and enable the Company to commence its operations to Singapore with a certain amount of hope and confidence. (PARAGRAPHS 301—303).

(184) Any assurance of assistance should be subject to the condition that Bharat Airways maintains separate accounts of its Eastern Service and that its books are accessible to Government for examination. (PARAGRAPH 304).

(185) The Committee understands that the traffic of the foreign airlines operating to and across India includes a very high proportion of fifth freedom traffic, particularly traffic between India and U. K. which legitimately belongs to the airlines of those countries. Now that Indian airlines are operating external services both to the East and to the West, it is necessary that steps should be taken to reserve to them their legitimate traffic. The Government of India might, therefore, consider undertaking a review of their bilateral agreements with a view to taking such measures as are necessary for their revision in a manner which will safeguard the legitimate rights of Indian international airlines. (PARAGRAPH 305).

CHAPTER 13  
Miscellaneous Points

SECTION (1)—RE-EQUIPMENT OF THE AIR TRANSPORT COMPANIES.

(186) No aircraft of a smaller capacity than a Dakota is in sight which could be operated on low density and feeder routes as a commercial proposition in India. However, the position should be watched and, if a suitable type is available, the companies should be encouraged and, if necessary, assisted to acquire such aircraft. (PARAGRAPH 307).

(187) With the limited traffic potential available in India, the use of modern aircraft like the Ambassador and the Scandia is not likely to be economic. If there were sufficient traffic potential, the Skymaster might afford possibility of economic operation. But even for Skymaster operation the intensity of traffic which would justify assumptions of a high load factor and a high utilisation is not visualised in the near future. (PARAGRAPH 308).

(188) It is desirable not to make any programme within the next three or four years for a large-scale replacement of the companies' present fleet. The Director General of Civil Aviation and the operating companies should keep a close watch on the development of new types of aircraft, so that a proper decision may be made when the time is ripe. In the meantime, the industry should carry on with its existing fleet which consists mainly of Dakota. (PARAGRAPHS 309 and 310).

(189) No change is required in the existing fleet for external operations. If other operators on the India—United Kingdom route, however, use more modern type of aircraft in the near future, it may be necessary for Air-India International to fall in line with them. The position should be watched both by the Director General of Civil Aviation and Air-India International. (PARAGRAPH 312).

SECTION (2)—HINDUSTAN AIRCRAFT LTD.

(190) H. A. L. rates for overhaul in 1946-47 were excessive, but they are not unreasonable now and there has been a steady improvement in the efficiency of the organisation. (PARAGRAPH 316).

(191) There have been delays in executing overhaul work, but to some extent the fault lay with the operating companies. (PARAGRAPH 316).

(192) There have been some failures of engines overhauled at H.A.L., but these were due to modifications introduced by the manufacturers. The Committee understands that these modifications have since been withdrawn by the manufacturers. (PARAGRAPH 316).

(193) It is an advantage for an airline with sufficiently large fleet to have its own overhaul arrangements. (PARAGRAPH 317).

(194) It is also desirable that overhaul arrangements should be located at three or four centres in the country. (PARAGRAPH 317).

(195) All requirements of civil aviation in India in respect of trainer type of aircraft should be met by the H.T. 2 which is being developed at H.A.L. (PARAGRAPH 317).

(196) Medium transport aircraft selected by I.A.F. might be adapted for civilian services and the combined requirements of both should be met by the production of that type by H.A.L. under licence from the manufacturer concerned. (PARAGRAPHS 311 and 319).



## SECTION (3)—NIGHT AIR SERVICES.

(197) The existing arrangements for the operation of night services satisfy the minimum standards laid down by the I.C.A.O. (PARAGRAPH 322).

(198) There are adequate facilities for the continuance of night operations and these facilities are being extended. (PARAGRAPH 322).

(199) Government should place adequate funds at the disposal of the D.G.C.A. for improving upon the existing facilities. (PARAGRAPH 322).

## SECTION (4)—TRAINING OF PILOTS AND GROUND ENGINEERS

(200) While the training given by the Flying Clubs is useful so far as it goes, it is necessary for the airlines to give to the trainees conversion training on Dakotas and Vikings. (PARAGRAPHS 324 AND 325).

(201) The C.A.T.C. gives training up to the Commercial Pilot's Standard and will also shortly start giving training for endorsement for Dakotas. (PARAGRAPH 325).

(202) The situation created by a limited supply of pilots is likely to ease in the near future. The implementation of the Committee's re-organisation plans will not create any surplus in the ranks of pilots. (PARAGRAPH 326).

(203) The ground engineers and skilled and semi-skilled mechanics were trained by the different airlines. The reorganisation may result in a surplus of certain categories of skilled and semi-skilled maintenance and overhaul staff. (PARAGRAPH 326).

(204) The Training programme of the D.G.C.A. should be reviewed after carefully assessing the needs of the Industry and the available supply during the next five years, so as to avoid wasteful expenditure and a sense of frustration among the trainees. (PARAGRAPH 326).

(205) Government should continue to help the Indian Gliding Association to enable it to maintain and enlarge its activities. (PARAGRAPH 327).

## SECTION (5)—FEEDER ROUTES

(206) The Committee is not aware of any suitable aircraft that could be operated on feeder routes on an economic basis. (PARAGRAPH 328).

(207) If any development of feeder services has to be undertaken by the companies, assistance from Government will be needed, as no development of such services can take place on a self-supporting basis. (PARAGRAPH 328).

(208) The possibility of instituting feeder services on certain specified routes might be explored, but such a policy of expansion should be adopted with caution. (PARAGRAPH 330).

## SECTION (6)—COACH-CLASS SERVICES

(209) Basic conditions essential for the successful operation of coach-class services are absent in India at present. (PARAGRAPH 332).

(210) It is better to build up traffic capacity through the provision of additional frequencies on the existing routes. (PARAGRAPH 332).

(211) There is little prospect of the useful introduction of coach-class service at the present stage of development of the Air Transport Industry in India. (PARAGRAPH 332).

## SECTION (7)—EXCLUSIVE FREIGHTER SERVICES.

(212) A pure freighter aircraft can offer a cheaper freight rate than a regular passenger service can. To what extent this can be taken advantage of must depend largely upon local conditions. (PARAGRAPH 335).

(213) Except for special cases such as West Bengal—Assam, West Bengal—Tripura and Delhi—Srinagar, there is not likely to be much scope for the normal operation of a purely freighter service in India at the present time. (PARAGRAPH 335).

## SECTION (8)—OTHER ITEMS.

(214) We have considered the possibility of the arrangements for booking and passenger handling being entrusted to one independent organisation for avoiding duplication and wasteful expenditure but we consider that these arrangements had better be left to each company. (PARAGRAPH 336).

(215) The operators should consider adopting some arrangement under which surface transport at all the stations in India could be handled on a pooled basis. (PARAGRAPH 336).

*Aircraft Insurance*

(216) The existing arrangements for the insurance of aircraft are probably the best in present conditions and the rates will probably come down with efficient servicing and repair facilities and a better accident-free record. (PARAGRAPH 337).

(217) Facilities should be provided at the air ports for passenger insurance. The procedure for such insurance should be simplified, preferably by arranging to provide insurance cover at the time of purchasing the tickets. (PARAGRAPH 338).

*Aircraft Spares.*

(218) In view of the fact that India will be using Dakotas for the next four or five years, suitable arrangements should be made at H.A.L. for fabrication in India of such of the items as are likely to be in short supply. (PARAGRAPH 339).

(219) It appears that the machinery for the issue of import licences is somewhat cumbersome. A system should be devised by which the requirements in regard to spares of all airline operators and the aircraft dealers should be assessed well in advance and licences issued without any unreasonable delay. The recommendations made by the D.G.C.A. in this regard should normally suffice for the issue of import licences subject to the monetary ceilings not being exceeded. (PARAGRAPH 340).

(220) with regard to delays in customs clearance and assessment of duty on aircraft equipment, a certificate by the D.G.C.A. to the effect that the item in question is an aircraft accessory and is specifically required for aircraft purposes should suffice, and on the authority of such certificate, the customs authorities should be in a position to give clearance after charging it to duty at the rates appropriate to aircraft spares. (PARAGRAPH 341).

*Scheduling of Air Services.*

(221) It is a matter of importance that India's trunk services should, as far as possible, provide suitable connections with international services touching India, and every effort should be made to see that the potentialities of the net-work are exploited to the maximum by mutual co-operation among the airlines. (PARAGRAPH 342).

*Industrial Disputes.*

(222) The employees of air transport companies should, for the purpose of industrial disputes regarding terms and conditions of service, pay and allowances, etc., be treated as falling within the Union sphere, in order to secure basic uniformity in the wage and salary structure of employees of the Industry in the whole of India. (PARAGRAPH 343).

*Overhaul and Inspection Procedures.*

(223) The D.G.C.A. might consider whether any further increase in the periods between engine overhauls is justified by experience. (PARAGRAPH 344).

(224) The D.G.C.A. might constitute a consultative committee consisting of the chief engineers of the air transport operators and representatives of his Inspection Department to advise him as to whether any flexibility or relaxations can be introduced in the powers and procedures relating to inspection and approval. (PARAGRAPH 344).

*Chapter 14—State Ownership*

(225) The question of the nationalisation of the Air Transport Industry was discussed at a Conference held in New Delhi on 1st February 1947, but no decision was taken by Government. (PARAGRAPH 347).

(226) In the Government of India's Industrial Policy Resolution dated 6th April 1948, the development of air transport was left to private enterprise, with planning and regulation of it by the Central Government. (PARAGRAPH 349).

(227) The Air Transport Licensing Board gave in July 1949 ten-year term licences to six operating companies. (PARAGRAPH 350).

(228) On *a priori* considerations, there is a good case for air transport services being owned and operated by the State:—

(a) One unit in charge of all the operations can use the available resources to maximum advantage.

(b) Operations by a State organization would be an advantage from the point of view of defence.

(c) Without the same predominant profit motive as in the case of private enterprise, a State organization would operate with the main policy of giving better and cheaper service to the public.

(d) Only a unified organization would be large enough to take full advantage of the technical developments which are rapidly taking place in civil air transport equipment and operational technique.

(e) A unified administration would bring about a certain amount of economy in expenditure, compared to operation by several units. This economy is estimated at 3½ per cent.

(f) The private airlines to be put on their feet would require a certain measure of assistance from Government. If the Industry is to be assisted by Government it will be preferable for Government themselves to run it in their own way. This would incidentally save the setting up of any machinery to assess the amount of assistance required and to see that it is rightly spent. (PARAGRAPH 351).

(229) There are however several important factors, which should be considered before nationalization is decided upon.

(a) Civil air transport, being a highly technical industry of a very specialized character, requires on the part of the management maximum initiative and technical efficiency to keep pace with developments, exceptional readiness to take financial risks in replacing equipment and constant personal attention on the part of all staff dealing with the customer and an endeavour to please and serve him. On all these counts, State administration cannot compare with private enterprise.

(b) The Air Transport Industry must continue for some time to be a luxury service, of advantage principally to the fairly well-to-do strata of the community. When Government finances are stringent, there is considerable danger of the requirements of the Industry being ignored, when those requirements come into conflict with the requirements of other developmental schemes affecting the vital needs of the common man.

(c) It is doubtful whether there will be a sufficient number of persons available to Government combining both business and administrative experience for a big State enterprise like this.

(d) From the decision taken by the Government of India in 1945, their Industrial Policy Resolution of 1948 and the issue of 10-year licences to the operating companies in July 1949, it appears that as a matter of deliberate policy, it had been the constant view of Government that the development of air transport should be left to private enterprise. A sudden reversal of this policy may undermine the confidence of the Industry in the assurances of Government and may have unfortunate repercussions on the development and expansion of other industries also. (PARAGRAPH 352).

(230) In the matter of efficiency, a Governmental organization, by lack of flexibility and rigidity in financial matters and due to the difficulties of eliminating the inefficient and the semi-efficient, would be at a considerable disadvantage. (PARAGRAPH 354).

(231) In regard to economy in expenditure, there would be the fundamental handicap of finding a satisfactory means of measuring the economic efficiency of the Central State organization, because it would be a national monopoly. (PARAGRAPH 356).

(232) Large centralized undertakings tend to become impersonal and individual officers are apt to lose interest with the inevitable accumulation of inertia and consequent loss of drive and slowing down of developmental activity. (PARAGRAPH 357).

(233) Operational efficiency of the Indian air transport companies has been uniformly good. An outstanding example is afforded by Air-India International which in the second year of its operation has been able to break even. (PARAGRAPH 358).

(234) If nationalization, which will be a drastic break-away from the existing organization of the industry, is decided upon, there is likely to be a sudden drop in efficiency, at any rate in the initial years. (PARAGRAPH 358).

(235) The fact that the Industry is now working at a loss and requires a certain amount of assistance from Government cannot be considered as an argument for nationalization, as in few countries in the world has civil air transport been a self-supporting proposition. The present financial difficulties of the companies are due, in some measure, at least, to the issue of licences by the Air Transport Licensing Board to a larger number of operators than

has been found to be justified by the actual development of traffic. The Committee expects that after its scheme comes into operation and with a certain amount of flexibility allowed to the operating companies in the working of their services, Government will not be saddled with any serious liability for the payment of subsidy. (PARAGRAPH 359).

(236) If India is to keep abreast of advancements in civil air transport in other countries both in equipment and technique, additional capital outlay would be involved, and it is quite likely that Government will be called upon to assist them in carrying this burden. There is, however, nothing unusual in such assistance being given, as in fostering such an important industry as air transport, every Government extends the necessary aid. (PARAGRAPH 359).

(237) The Committee considers that there is not sufficient justification to break away from the present set-up. (PARAGRAPH 360).

(238) If the Committee's hope that the operating companies will be able to make good is not justified, and they continue to incur substantial losses and development consequently suffers, then the matter should be reviewed at the end of five years to consider whether the position could be improved by the State taking over the Industry. (PARAGRAPH 360).

(239) Should however Government decide as a matter of policy upon State ownership of air transport services, the Committee is strongly of the view that their operations should be entrusted to a Statutory Corporation. (PARAGRAPH 361).

(240) Even with a statutory Corporation, it is most important for the success of the enterprise that (a) an outstanding man of business and administrative ability with sufficient experience of air transport should be appointed as chairman of the Organization, (b) the Corporation should be given complete autonomy and freedom from Departmental control except in regard to the main policies to be followed as laid down by Government. (PARAGRAPH 361).

(241) The acquisition of the undertakings of the existing operating companies could be effected in two ways, both of which would require enabling legislation. (a) Government to acquire the shares of the companies on the basis of market quotations on a specified date, (b) Government to make a valuation of the assets of the companies and take them over on payment to the companies of the values so assessed. The Committee considers that the second method is more equitable and recommends that it should be followed in acquiring the undertakings of airline companies. (PARAGRAPH 362).

(242) The Committee has not found it possible to assess precisely the amount that will have to be paid to the companies in acquiring their assets as a number of factors will have to be taken into account such as replacement value of the assets, the rates of depreciation, the actual condition of the assets at the time of taking over, etc. The original value of the fixed assets and spare parts and tools as shown in the books of the companies is about Rs. 6 crores inclusive of Rs. 60 lakhs for Indian Overseas Airlines and Himalayan Aviation. (PARAGRAPH 363).

(243) In the actual acquisition proceedings, the valuation of assets should be made by an expert body set up for the purpose. (PARAGRAPH 363).

(244) The capital required for the Corporation should be provided by Government. The Corporation should work on purely commercial lines. (PARAGRAPH 364).

(245) The Board of the Corporation should be appointed by Government and should be responsible to the Minister for Communications. The Board should consist of a chairman and four members of whom one should be elected vice-chairman. The chairman's services should be available to the Corporation whole time. The four members will all be part time of whom one will be the D.G.C.A., one representative of the Finance Ministry, one person with air transport experience but unconnected with the Civil Aviation Department and one person with business experience. (PARAGRAPH 364).

(246) There should be a general manager for the Board who will be the chief executive officer of the Corporation. For this post, a man of ripe administrative experience and drive, with intimate knowledge of airline operation in its technical aspects should be obtained. (PARAGRAPH 364).

(247) The inclusion of the D.G.C.A. in the Board of the Corporation would, while being of advantage to the Corporation, also facilitate the discharge of the responsibility of the D.G.C.A. in regard to the development of civil air transport. (PARAGRAPH 365).

(248) Assuming that the efficiency of operation by the State Corporation will be the same as has been set for private enterprise, the total cost of operation by the State organization would be about Rs. 50 lakhs less than that under the re-organization scheme of the Committee. On the same assumption, whatever profit the companies are expected to make under the scheme (about Rs. 42 lakhs) would also accrue to the State organization. (PARAGRAPH 366).

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## CHAPTER 16

### Acknowledgments

368. Although we accept full responsibility for the conclusions arrived at and recommendations made in this Report, it is with very great pleasure that we acknowledge the assistance we have received from various quarters in considering this difficult problem and in formulating our recommendations.

Mr. J. L. Watkins, whose services were loaned to us by Trans-Australia Airlines and the Australian Government at the request of the Government of India, has been a pillar of strength to us throughout this inquiry. His intimate knowledge of the working of this Industry, both in its technical and business aspects, his fresh outlook and balanced judgment, his untiring energy, his genuine desire to promote Civil Aviation in this country and his guidance to us in this inquiry have been of inestimable value to us. We venture to think that the graphs which he has prepared and the estimates he has made of the probable costs of the working of, and the optimum stage lengths for, the different types of aircraft would be a permanent contribution to the discussion of many future problems in connection with the Air Transport Industry. He has had, at our request, to stay in India longer than he originally intended, at considerable personal inconvenience, and we therefore feel very indebted to him, to Trans-Australia Airlines and to the Australian Government for their ready and willing co-operation in enabling us to complete our task.

Mr. D. Chakraverti, Deputy Director-General of Civil Aviation, has been associated with us from the very commencement of the inquiry. His extensive knowledge of the working of the Department has been freely placed at our disposal. While stoutly and meticulously representing the point of view of the Department, he has always shown his readiness to understand and appreciate the other point of view, and this has made his association with us both

instructive and pleasant. He has been indefatigable in collecting whatever information we desired and has always been ready to give his advice which we have treated with very great respect. We are greatly obliged to him for his courtesy and co-operation.

Our third Advisor, Air Commodore R. H. D. Singh, has not been with us all through the inquiry and indeed his continuous presence was not required in view of his other pre-occupations. But he made valuable contribution to the discussions of the various problems, particularly in their relations to the problem of defence, and we are indebted to him and the Indian Air Force for the assistance we received from them.

Mr. S. V. Aiyer, the Chief Cost Accounts Officer of the Government of India, who spent considerable part of his time with us, has been most useful in the consideration of the various problems, especially in the examination of the financial position of the various companies. His knowledge of cost accounting and his detailed study of the material submitted by the various companies has been of great value to us, particularly in arriving at an estimate of costs of operations of different airlines.

Dr. M. R. Dhekney, who had made some study of the problems connected with the Industry for his Doctorate thesis, was placed as an Officer on Special Duty with the Committee and did some useful work for us. We must express our thanks to the Principal of the Brihan Maharashtra College of Commerce, Poona, for his readiness in making available to us the services of Dr. Dhekney.

We are greatly indebted to the air transport companies and various other commercial bodies and individuals who, at considerable inconvenience to themselves, took the trouble to answer our Questionnaire and who gave evidence before us. We should specially like to mention the enormous work done by Mr. T. P. Bhalla, Director-General of Civil Aviation, in collecting a vast amount of material in answer to our Questionnaire and in giving evidence before us for four days. We gave our most anxious and careful consideration to his views, but it has been a matter of regret to us that we have not been able to agree with him in all his submissions. If we have not been able to agree with him on some points, it has been for no lack of hard work or persuasive eloquence on his part and we readily acknowledge the assistance he has rendered to the Committee and express our sincere thanks to him.

We have had informal discussions with Professor D. R. Gadgil and General J. H. Doolittle and others who were good enough to come and discuss matters with us. We have also had some preliminary consultation with Mr. P. V. R. Rao, Deputy Accountant-General, Bombay, in connection with the analysis of the financial data furnished by the companies. We are most thankful to them for sparing their time and helping us with their advice.

We feel greatly indebted to our staff and particularly to our most energetic and efficient Secretary, Mr. K. V. Venkatachalam. His experience in the Ministry of Communications, his thorough knowledge of the background and the intricacies of the problems, his quick grasp and clear thinking, his independent outlook in considering each problem on its merits, have been most invaluable to us. We have been amazed at the facility and quickness with which he has been able to produce drafts and other material for our consideration. The task of preparing statements and analysing the statistics has fallen on Mr. R. K. Agrawal, our Assistant Secretary, and he has done this to our entire satisfaction. The rest of the staff have also had to work very hard, sometimes at very great pressure and for late hours. But for their ready and willing co-operation we could not have been able to finish the task within the time it has actually taken us.

We express our indebtedness to the Bombay Government, to the Honourable President of the Bombay Legislative Council and the Honourable Speaker of the Bombay Legislative Assembly, for their kindness and courtesy in placing at our disposal the accommodation which we needed during our stay in Bombay. We also thank the Mysore Government for their kindness in making very satisfactory arrangements during our stay at Banga'ore.

G. S. RAJADHYAKSHA,	Chairman.
H. L. DEY,	Member.
R. NARAYANASWAMI,	Member.

K. V. VENKATACHALAM,—Secretary.

*Bombay, dated the 15th September, 1950.*



**PART VI**  
**APPENDICES**



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## APPENDIX I

**List of Bodies and Persons who sent Preliminary Memoranda to the Committee**

Air-India, Bombay  
Indian National Airways, New Delhi  
Air Services of India, Bombay  
Deccan Airways, Begumpet, Hyderabad  
Airways (India), Calcutta  
Indian Overseas Airlines, Bombay  
Himalayan Aviation, Calcutta  
Dalmia Jain Airways, New Delhi  
Nalanda Airways, Patna  
Director General of Civil Aviation, New Delhi  
Hindustan Aircraft Limited, Bangalore  
Greaves Cotton & Co. Limited (Aviation Division), Bombay  
Aviation Industries (India) Limited, Calcutta  
Delhi Flying Club, Delhi  
Madras Flying Club, Madras  
Indian Pilots' Guild, Bombay  
Air Technical Training Institute, Dum Dum  
Air-India Employees' Union, Bombay  
The Associated Chambers of Commerce of India, Calcutta  
Mr. P. K. Ghosh, Calcutta  
Mr. G. C. Arya, Bombay  
Mr. K. S. Balakrishnan, Calcutta  
Mr. T. D. Kumar, New Delhi  
Dr. R. V. Rao and Mr. B. P. Rao, Hyderabad  
Dr. V. M. Ghatage, Hindustan Aircraft Limited  
Mr. S. R. Khanna, Delhi

APPENDIX II

No. 28-ATC/1-50

GOVERNMENT OF INDIA

Ministry of Communications

AIR TRANSPORT INQUIRY COMMITTEE

FROM

Shri K. V. Venkatachalam,  
Secretary,  
Air Transport Inquiry Committee.

To

All Air Transport Companies, the Director General of Civil Aviation, the Air Transport Licensing Board, Flying Clubs, the Governments of the States, Members of Parliament, Ministries of Government, Chambers of Commerce, Trade Associations, etc.

Dated Bombay, the 8th April 1950.

SUBJECT.—Questionnaire issued by the Air Transport Inquiry Committee.

Sir,

The Government of India, Ministry of Communications, in their Resolution No. 1-A/27-49, dated the 8th February 1950, constituted an Air Transport Inquiry Committee, with the Hon'ble Mr. Justice G. S. Rajadhyaksha as Chairman and Dr. H. L. Dey and Mr. R. Narayanaswami as Members, to inquire into the present state of air transport in India and to advise Government on the best lines on which future development might be organised. The detailed terms of reference of the Committee are as follows:—

“To enquire into and report upon and to make recommendations in regard to the following matters, viz: —

- (a) the present state of the air transport industry in India in regard to both internal and external services;
- (b) the short-comings, if any, in the organisation and management of the industry as a whole or in regard to any individual company or companies;
- (c) the major difficulties and defects in the industry as at present constituted;
- (d) the manner in which Indian air services, internal and external, could best be operated with the maximum economy, having due regard to all relevant factors, including passenger fares and freight and mail rates, during the 5 years 1950-54, providing also for adequate development of the air services and, for such purpose,

- (1) the reasonable needs of the industry of assistance from the State and the manner and extent of such assistance and cost thereof to the State.
- (2) regulation of the industry and control over its management by the State,
- (3) any necessary re-organisation of the industry;
- (e) the desirability, practicability and economic consequences of the operation of the said air services under State ownership and management, either direct or through a body corporate, and the cost of acquisition of such ownership."

2. After considering certain preliminary memoranda received from operating Companies and other bodies and persons interested in air transport, the Committee has drawn up a questionnaire on the different aspects of the subject of the inquiry. I am to enclose a copy of the questionnaire and to request that you will kindly favour the Committee with your replies.

3. The questionnaire is designed to cover the whole field of the inquiry and follows the main heads of the terms of reference of the Committee. It is not, however, expected that all those who may be pleased to send replies should attempt to answer all the questions. The questions are arranged in seven parts and are intended to be answered as indicated below:—

Parts A and B and section 1 of Part C	} to be answered by air transport companies.
Part C, section 2	to be answered by the Director General of Civil Aviation.
Part C, section 3.	to be answered by the Air Transport Licensing Board.
Parts D, E and F.	to be answered by air transport companies, the Director General of Civil Aviation and the Air Transport Licensing Board.
Part G	to be answered by all bodies and persons generally interested in air transport, viz., Trade Associations, Oil Companies, aircraft dealers, Members of Parliament, Ministries of Government, the Governments of the States, etc.

Any points in the questionnaire which may be obscure and may require clarification may kindly be referred to the undersigned. If any body or person to whom this questionnaire is addressed wishes to give its or his views on any points relevant to the inquiry which may not have been included in the questionnaire, it would be convenient if such points were dealt with in supplementary memoranda.

4. It will facilitate the work of the Committee if the bodies or persons to whom this questionnaire is addressed could indicate, along with their replies, whether they would like to appear before the Committee at such place and time as the Committee may conveniently fix at a later stage of its deliberations.

5. It is requested that replies to the questionnaire may be sent to the undersigned so as to reach him by the 1st May 1950. The replies should be in 12 copies and should indicate what portion, if any, is desired to be treated as confidential.

6. All replies and all correspondence relating to the questionnaire and the work of the Committee may, after the 15th April 1950 be addressed to the Secretary, Air Transport Inquiry Committee, Council Hall Building, Appollo Bunder, Bombay.

Yours faithfully,

K. V. Venkatachalam,

Secretary.

## QUESTIONNAIRE

**Note.**—Instructions for answering the Questionnaire.

1. Internal services—For the purposes of this Questionnaire, internal services include, besides purely domestic services, services to countries immediately adjoining India, e.g., Pakistan, Ceylon and Burma.
2. Wherever possible please give your answers to the questions in tabular form.
3. Please reproduce each question and its number before answer.
4. Please send twelve copies of your reply together with all statements and other papers accompanying the reply.
5. On the top right hand corner of each sheet please give the name of the body or person giving the replies.
6. Separate statements should be prepared for information relating to different periods or different dates.

### **PART A—History, Organization and Establishment of the Air Transport Companies**

(Questions to be answered by the Air Transport Companies in respect of both internal and external air operations.)

- Q. 1. Please give a brief history of your undertaking upto the 31st March 1950.
- Q. 2. If your firm is managed by Managing Agents, state the terms of management and remuneration.
- Q. 3. Please give a current organisation chart of your Company, showing: (a) the functions and responsibilities of each section and (b) the distribution of the staff between the head office and outstations.
- Q. 4. Please give in a tabular form, the following information as on the 31st December 1947, the 31st December 1948, the 31st December 1949 and the 31st March 1950:—
  - (a) Total number of employees, and total monthly salaries and wages bill including allowances, bonus, etc., as detailed in (c) below.
  - (b) Number of employees and salaries and wages bill (including allowances, etc.) for each of the following sub-divisions, Indian and non-Indian being given separately in each case:—
    - (i) Administration (i.e., top management, office management, branch management, etc.)



- (ii) Publicity and advertising
  - (iii) Medical and Welfare Organisation
  - (iv) Accounts and audit organisation
  - (v) Operations management
  - (vi) Flight crew [state separately
    - (a) Captains
    - (b) Co-pilots
    - (c) Radio Officers
    - (d) Hostesses].
  - (vii) Operations ground personnel
  - (viii) Aircraft maintenance management
  - (ix) Aircraft maintenance personnel—[State separately
    - (a) Licensed ground engineers
    - (b) Skilled mechanics
    - (c) Semi-skilled mechanics
    - (d) Specialists
    - (e) Unskilled workmen
    - (f) Watchmen
    - (g) Clerical]
  - (x) Stores Organisation
  - (xi) Traffic and Sales management
  - (xii) Traffic and Sales personnel
- (c) Give details of scales of pay, allowances, bonuses and commission, if any, contribution to provident fund, insurance premia paid by the company, etc. for each category of employees listed in (b) above.
- (d) Give an estimate of the amount of working capital required by you for the efficient maintenance of your existing services. Please state the basis on which this estimate has been made.
- (e) (i) At what rates do you provide for depreciation of equipment for purposes of your financial accounts? If the rates are different from the rates allowed for income-tax purposes, state the reasons therefor.
- (ii) What are the purposes for which your depreciation fund is meant to be utilised?

#### **PART B—Operational and Financial Statistics of the Air Transport Companies**

(Questions to be answered by the Air Transport Companies in respect of both internal and external air operations).

**Q. 5. Operational Statistics:**—Please give in a tabular form information in respect of the calendar years 1947, 1948 and 1949, and the first quarter of 1950 on the following points: (where your financial year is not the calendar year, figures may be given for your last three complete financial years, and that portion of the current financial year up to 31st March 1950):—

- (i) **Scheduled Services** (State separately for each route operated and also give total figures):

- (a) Route mileage
- (b) Frequency of service offered
- (c) Type of aircraft employed
- (d) Schedule of passenger fares, freight rates and mail rates
- (e) Hours flown
- (f) Miles flown
- (g) Schedule regularity%
- (h) Seat-miles flown
- (i) Passengers carried (paying)
- (j) Paying passenger-miles performed
- (k) Passenger load-factor % (passenger-mile basis)
- (l) Passenger ton-miles flown (including free baggage)
- (m) Freight and excess baggage ton-miles
- (n) Mail ton-miles
- (o) Total ton-miles performed
- (p) Capacity ton-miles flown
- (q) Overall load-factor per cent (ton-miles basis)
- (r) Revenue earned:
  - (a) Passengers
  - (b) Freight
  - (c) Mail
  - (d) Total
- (s) Approximate cost of operation of service.
- (ii) **Non-scheduled or charter operations**—(State separately for each route operated, and also give total figures)
  - (a) Hours flown
  - (b) Miles flown
  - (c) Passengers (paying)
  - (d) Paying passenger-miles
  - (e) Seat-miles operated
  - (f) Passenger ton-miles flown
  - (g) Freight ton-miles
  - (h) Total ton-miles performed
  - (i) Revenue earned:
    - (a) Passengers
    - (b) Freight
    - (c) Total
  - (j) Approximate cost of operation of service.
- (iii) **Non-revenue flying.**
  - (a) Training hours flown
  - (b) Executive transport hours flown
  - (c) Ferry flights hours flown
  - (d) Other non-revenue flying (Describe nature, e.g., relief flying with essential spares, etc.)

(iv) **General**

- (a) Total number of units of each type of aircraft in your fleet
- (b) Total hours flown with each type of aircraft employed.
- (c) Corresponding average flight utilization achieved with each type of aircraft.
- (d) Number of aircraft given complete overhaul, during period under review.
- (e) Corresponding average hours flown per complete overhaul.
- (f) Number of engines given complete overhaul during the period under review.
- (g) Corresponding average engine-hours per engine overhaul.
- (h) Number of engine removals for reasons other than time-expiry.
- (i) Corresponding engine-hours per abnormal removal.
- (j) Average number of flying hours achieved per year for each category of flying staff
- (k) Man-hours expended on (i) aircraft servicing, (ii) air-frame overhaul, (iii) power plant overhaul
- (l) Corresponding man-hours per flying-hour in each case.
- (m) Total amount of aviation spirit consumed in gallons, separately for each type of aircraft:
- (n) For each type of aircraft in your fleet, please give the following information [Item (ii) should be stated as an average of actual figures for all similar units for your fleet].
  - (i) Maximum gross weight permitted for take-off in accordance with Indian Certificate of Airworthiness.
  - (ii) Give details of any restriction on this take-off weight imposed on specific routes due to particular characteristics of airports or terrain in the vicinity, special factors such as maximum permissible landing weight at destination, maximum zero-fuel gross weight, or maximum en-route weight for clearance of high terrain.
  - (iii) Weight empty (including normal furnishings, radio, etc.)
  - (iv) Basic operating weight ready to receive fuel and payload. Please give details of difference between (iii) and (iv), e.g., allowance for weights of flight crew and cabin attendants; navigating and flight manuals and equipment; passenger service items such as rugs, pillows, literature; food services; wash-water, etc.; engineering spares carried, if any.
  - (v) Standard fuel load normally carried, for each route operated. Please give details as to total amount of fuel normally consumed in operating the route, and the intended purpose of the reserve fuel normally loaded.
- (vi) On the basis of (i), (ii), (iv) and (v) quote weight payload available for each route.
- (vii) State number of passenger seats installed, and total usable volume of all cargo compartments.

- (viii) In the light of your experience, state the maximum volumetric capacity payload consistent with (vii), having regard to average passenger weights and average density of baggage and freight.
- (ix) For each route operated, state block-to-block time as listed in your schedules, and corresponding block speed achieved.
- (v) If possible, quote comparative figures for U.S.A., Canada, U.K. and Australia, in respect of items (iv) (c), (iv) (e), (iv) (g), (iv) (i), (iv) (j), and (iv) (l).
- (vi) If your aircraft or engine overhaul is performed by an outside contractor please state the terms of each such contract, and the results obtained in relation to:—
- (a) the period of time lost for each overhaul.
  - (b) average man-hours charged for per overhaul
  - (c) total cost per overhaul.

**Q. 6 Expense and Revenue:—**Please give in a tabular form the following information for the periods corresponding to those for which your operational statistics (given under Q. 5) apply:

**Expense:**

- (i) Direct operating costs (State separately for each type of aircraft and also give total):
  - (a) Fixed direct operating costs (*i.e.*, irrespective of amount of flying):
    - (i) Depreciation—aircraft
    - (ii) Depreciation—spare engines and propellers
    - (iii) Aircraft insurance
    - (iv) Aircraft housing fees
  - (b) Variable direct operating costs (*i.e.*, according to amount of flying):
    - (i) Fuel and oil
    - (ii) Flight crew salaries (excluding hostesses)
    - (iii) Aircraft servicing (labour, materials, overheads including stores organisation)
    - (iv) Aircraft overhaul (labour, material, overheads including stores organisation) State separately for airframes, engines and accessories.)
    - (v) Landing fees and any other route charges
- (ii) Indirect operating costs:
  - (a) Operations on-costs (including flight crew insurance, travelling and accommodation expenses, uniforms and salaries, etc., for operations managements and ground staff)
  - (b) Training (all flight crew)
  - (c) Passenger services (meals, hostess salaries, etc., passenger insurance, surface transport, etc.)
  - (d) Traffic, sales and agencies (booking offices, including salaries for traffic management and personnel, rent, etc., agents' commissions, reservation control systems, etc.)

## (iii) General Costs.

- (a) Interest on working capital, etc.
- (b) Administration (including Directors' fees, salaries and overhead for top management, office management, etc.)
- (c) Office rents and expenses [other than traffic included in (ii) (d)]
- (d) General publicity and advertising [other than time-tables etc., included in passenger services (ii) (c)]
- (e) Medical and welfare.
- (f) Accounts and Audit.
- (g) Miscellaneous items.

(2) **REVENUE:**(i) **Scheduled Services** (State separately for each route operated, and also give total figures):—

- (a) Passenger fares and cancellation charges
- (b) Excess baggage
- (c) Freight
- (d) Mail payment
- (e) Miscellaneous
- (f) Total

(ii) **Non-scheduled or charter operations** (State separately for each route operated and also give total figures):—

- (a) Passenger revenue
- (b) Freight revenue
- (c) Total
- (d) Maximum, minimum and average rates for charters.

(iii) **Miscellaneous:**

- (a) Overhaul or repair work for other operators
- (b) Agency fees from other airlines (specify details)
- (c) Any financial assistance, other than mail contracts from Union and State Governments.

Q. 7. Please supply the balance sheets of your Company, including profit and loss account, for each of your last three financial years.

**PART C—Economics of Air Transport Operations.**

Section 1 (Questions to be answered by the Air Transport Companies in respect of internal air services only)

Q. 8. (i) Please state, in a tabular form, the changes in the level of passenger fares, freight rates and mail rates as fixed by the Air Transport Licensing Board and as changed by your Company since 1st January 1946. How do the present rates compare with those in force in U.S.A., Canada, U.K. and Australia?

(ii) What has been the effect of those changes on (a) the volume of traffic and (b) the revenue from your operations, on different routes? Please give specific figures.

- Q. 9. (i) What do you estimate to be the minimum cost of operation per mile of (a) a Dakoto, (b) a Viking, with due regard to sound and safe operation on the basis of an annual utilisation of (1) 1000 hours, (2) 1500 hours and (3) 2000 hours? Please give details of your estimates stating the assumptions you have made in regard to depreciation and any other relevant factors. If your actual cost is more than the minimum cost, please state the reasons why it is so?
- (ii) In respect of the present routes, what, in your estimate, should be the reasonable level of passenger fares, freight rates and mail rates to cover this minimum cost? Please give details of the calculations including (a) the load factor assumed and (b) profits allowed for.
- (iii) Do you consider that a reduction in the fares and freight rates would lead to an adequate increase in traffic so as to (a) maintain and (b) increase the revenue of your Company? Please give estimates.
- Q. 10. On the basis of the minimum cost of operation and the existing level of passenger fares and freight and mail rates what would have been the extent of the gap, if any, between your earnings and expenditure in respect of the operations during the last financial year? How far would that gap have been reduced by the refund of nine annas per gallon of the customs duty on aviation spirit granted by Government last year? If this would not have closed the gap completely, what proposal [e.g., (i) direct subsidy by Govt., (ii) increase in passenger fares and freight and mail rates and (iii) any other method] would you favour in order to cover the deficit?
- Q. 11. What are the charges levied in India for (a) landing, (b) housing (c), communications, (d) navigation and (e) meteorological facilities? How do they compare with those in U.S.A., Canada, U.K. and Australia? If you consider any modifications necessary, what are your suggestions?
- Q. 12. (i) Do you experience any serious difficulties regarding the availability (1) in adequate quantity and (2) at reasonable rates of (a) fuel and oil and (b) stores and spares? If so, what remedies would you suggest for overcoming the difficulties.
- (ii) What is the system of your stores and spares purchases and how do you ensure obtaining goods of the requisite quality at the lowest prices?
- (iii) How do the prices of (a) fuel and oil and (b) stores and spares in this country compare with those in U.S.A., Canada, U.K. and Australia? Please give figures.
- Q. 13. (i) What facilities are available to you for (a) current repairs and (b) for obtaining certificates of airworthiness and for overhaul of engines and major assemblies?
- (ii) If you obtain these facilities from Hindustan Aircraft Limited, Bangalore, are they adequate and are the charges reasonable? Is the work executed within a reasonable period? Have you any suggestions to make for improvement in this regard?
- (iii) If you have your own organisation, please state its present capacity? Is your organisation on its present scale necessary and economic, in view of the facilities available at Hindustan Aircraft Limited?

(iv) If the capacity of your organisation is more than what is required for your own needs, what suggestions would you make for its utilisation to the best advantage of the Industry?

Q. 14. What procedure do you follow in recruiting your (a) flying, (b) engineering and (c) administrative staff?

Q. 15. (i) Is the supply of (a) flying personnel and (b) engineering personnel adequate and available on reasonable terms? If not, what suggestions would you make to improve the position? Is it feasible to introduce a measure of standardisation in their emoluments?

(ii) How do the emoluments of different categories of staff in India compare with those in U.S.A., Canada, U.K. and Australia? Please give figures.

(iii) What facilities do you possess for training your (a) flying personnel and (b) engineering personnel?

(iv) If you have your own organisation, please state its present capacity. Is the organisation on the scale you possess necessary or economic in view of the training facilities available in the flying clubs and the Civil Aviation Training Centre, Allahabad?

(v) Do you consider the facilities available in the flying clubs and the Civil Aviation Training Centre adequate to meet the present requirements of the Industry?

Q. 16. What are your present arrangements for insuring (a) aircraft, (b) personnel and (c) passengers? Please state the rates you pay for each category. Do you insure direct with an insurance company or through its agents? Do you consider these arrangements satisfactory and economic? If not, have you any suggestions to make for their improvement?

Q. 17. (a) How many units of your fleet will require to be replaced during the next 5 years? Please give details of your scheme for replacement.

(b) Have you considered the feasibility of replacing the existing types of aircraft by more efficient and economical ones? Please give details.

(c) What financial provision have you made for the purpose? If you consider the provision inadequate, how do you propose to raise the necessary funds?

(d) Do you require any State assistance for this purpose? If so what should be the extent and form of such assistance?

Q. 18. What are the existing rates for the carriage of mails and on what basis have they been fixed? What, in your opinion, should be the principles that should govern the fixation of mail rates? Should they be different from those governing the fixation of passenger fares and freight rates? What is the practice followed regarding this matter in U.S.A., Canada, U.K. and Australia?

Q. 19. What has been the effect of the 'All-up' mail scheme on (a) the volume of your mail traffic and (b) your revenue?

Q. 20. (i) What has been the effect of the Night Air Service on (a) the volume of passengers, freight and mail traffic carried by you and (b) your revenue?

(ii) Are you in agreement with the principle of the Night Air Service? If so, do you think the present arrangements for the Night Air Service satisfactory? If not, what modifications in these arrangements would you suggest?

(iii) Is the existing ground organisation (e.g., lighting, navigational aids etc.) for the Night Air Service adequate and satisfactory for the safe working of the Service (i) during fair weather and (ii) during the monsoon? If not, in what directions do you consider improvement necessary in order to ensure safe working throughout the year?

(iv) Do you consider the fixation of the passenger fare on the Night Air Service at the first class rail fare plus 12½% reasonable? If possible, please indicate, the extent to which your passenger traffic and revenue have been affected by the fixation of this rate.

- Q. 21. (i) Do you think that the present arrangement under which in certain cases two or more airlines have been licensed to operate on the same or more or less the same route is a sound one?
- (ii) How far has this arrangement affected the volume of your traffic and your revenues?
- (iii) If you consider the above arrangement to be unsound, what practicable alternative would you suggest?
- Q. 22. What has been the effect of operations by non-scheduled operators on the volume of your traffic and your revenue? Have there been any cases of deliberate undercutting in fares and freight rates? Give specific instances. What measures of control would you suggest over the non-scheduled operators to minimise the adverse effect on scheduled operation?
- Q. 23. What are the possibilities of effecting economy in expenditure in respect of (a) booking arrangements, (b) surface transport, (c) passenger and freight handling and (d) any other matter, by way of pooling or any other method?
- Q. 24. Do you consider the present air route pattern in India satisfactory? If not, have you any suggestions to make for its improvement?
- Q. 25. Do you consider the present allocation of routes amongst the scheduled operators satisfactory? If not, what suggestions would you make to improve it?
- Q. 26. (i) To what extent are the present difficulties of the air transport industry due to (a) the policies pursued by the Government of India from time to time and (b) the administration of the air transport licensing rules by the Air Transport Licensing Board? Please give specific instances.
- (ii) In order to ensure the future development of the air transport industry on sound lines, what modifications would you suggest in (a) the policy of the Government, (b) the Licensing Rules and (c) the administration of these Rules?
- Q. 27. Do you consider that there is at present an excessive number of Companies operating scheduled air services? If so, what in your opinion, would be a reasonable number and what should be the economic size of each? What are the factors which should be taken into consideration for determining the size of such a Company?



- Q. 28. If you consider that the present number of companies is excessive and should be reduced, what concrete and practicable schemes, *e.g.*, merger, would you propose to bring about the necessary reduction, having regard to the fact that long term licences were issued to the Companies in 1949?

**PART C—Economics of Air Transport Operations.**

Section 2 (Questions to be answered by the Director General of Civil Aviation)  
(Replies to questions 44, 45, 46, 47, 48 and 49 should be in respect of both internal and external services)

- Q. 29. On the basis of the statistics which you have received from all the operators, what is the average cost of operation per mile for each Company in respect of:—

- (a) a Dakota
- (b) a Viking
- (c) a Skymaster, and
- (d) a Constellation?

Please give the detailed breakdown of the cost.

- Q. 30. What in your opinion is the minimum cost of operation per mile of:—

- (a) a Dakota
- (b) a Viking
- (c) a Skymaster, and
- (d) a Constellation

with due regard to sound and safe operation?

Please give the details on which your estimate has been based, stating the assumptions you have made in regard to utilisation of aircraft and depreciation.

- Q. 31. In respect of the present routes (including the external routes) what in your estimate should be the reasonable level of passenger fares, freight rates and mail rates, to cover this minimum cost?

Please give details of the calculations including:—

- (a) the load factor assumed and (b) the profit allowed for.

Do you consider that a reduction in the fares and freight rates would lead to an adequate increase in traffic so as to (a) maintain and (b) increase, the revenue of the Companies? Please give estimates.

- Q. 32. (i) On the basis of the minimum cost of operation and the existing level of passenger fares and freight and mail rates, what would have been the extent of the gap, if any, between the earnings and expenditure of the Companies in respect of their operations during the last financial year?

(ii) How far would that gap have been reduced by the refund of 9 annas per gallon of the customs duty on aviation spirit granted by Government last year?

(iii) If this would not have closed the gap completely, what proposals [*e.g.*, (a) direct subsidy by Government, (b) increase in passenger fares and freight and mail rates, etc.] would you favour in order to enable the companies to meet the deficit?

**N.B.**—In respect of the external services, please give answer with regard to (i) and (iii) only.

- Q. 33. What is the average cost of aviation spirit in U.S.A., Canada, U.K., Australia and India? How do the prices of aircraft stores and spares in this country compare with those in U.S.A., Canada, U.K. and Australia? What is the proportion of direct to indirect costs on scheduled air lines in U.S.A., Canada, U.K., Australia and India? If possible, please give this proportion separately for internal and external operations.
- Q. 34. What are the charges levied in India for (a) landing (b) housing (c) communication (d) navigation and (e) meteorological facilities? How do they compare with those in U.S.A., Canada, U.K. and Australia? If you consider any modifications necessary, what are your suggestions?
- Q. 35. Please furnish particulars of passenger fares, freight rates and mail rates at present in force in India for internal and external services and also in Canada and Australia.
- Q. 36. What has been the effect of the changes made from time to time in India in passenger fares, freight and mail rates on the volume of traffic and on the revenues of scheduled air transport operators? Please give specific figures.
- Q. 37. (i) What are the existing rates for the carriage of mails, both internal and external, and on what basis have they been fixed?  
(ii) What in your opinion should be the principles that should govern the fixation of mail rates? Should they be different from those governing the fixation of rates for passengers and freight? What is the practice in this respect followed in U.S.A., U.K. and Australia?
- Q. 38. What has been the effect of the "All-up" mail scheme on the volume of mail traffic carried by the different Companies and on their revenues?
- Q. 39. (i) Please give a short note on the institution of the Night Air Service, with particular reference to the grant of licences for the operation of the Service from time to time.  
(ii) Was the ground organization (*e.g.*, lighting, navigational aids, etc.) existing at the time of the grant of those licences adequate and satisfactory for the safe working of the Night Air Service (a) during the fair weather season, and (b) during the mousoon?  
(iii) What is the position now and what improvements, if any, are in your opinion necessary and desirable to make the working of the Service possible throughout the year?  
(iv) What has been the effect of the Night Air Service on the volume of traffic, passengers, freight and mail?  
(a) on the lines operating them, and (b) on other lines.
- Q. 40. (i) Do you think that the present arrangement under which, in certain cases, two or more airlines have been licensed to operate on the same or more or less the same route a sound one?  
(ii) How far has this arrangement affected the volume of traffic and revenue of the companies?

(iii) If you consider the above arrangement to be unsound, what practicable alternative would you suggest?

Q. 41. (i) On the basis of the statistics which you have received from the operating Companies, what is the aircraft utilisation factor for each of the Companies for the years 1947, 1948 and 1949? In respect of Bharat Airways Ltd., please give utilisation factor separately for internal and external services.

(ii) How do these figures compare with the maximum and minimum utilization factors obtained in the U.S.A., Canada, U.K. and Australia?

(iii) What in your opinion should be the reasonable minimum utilization factor in India, for both internal and external services?

(iv) If the present utilization factor in India is unduly low, what are the reasons? Have you any suggestions to offer to remedy the situation?

Q. 42. (i) What is the total capital expenditure incurred so far on the construction of aerodromes and the provision of other ground organisation in India?

(ii) What is the annual recurring expenditure of the Civil Aviation Department under major heads for each of the last three financial years?

(iii) What is the total annual revenue from landing and housing fees, rents of hangars, issue of licences and certificates, etc., for the last three financial years?

(iv) What has been the total consumption of aviation petrol by civil aviation in each of the last three years and what is the revenue from customs duties?

Q. 43. Do the operating companies in India experience serious difficulties regarding the availability

(i) in adequate quantity and

(ii) at reasonable rates of

(a) fuel and oil and

(b) stores and spares?

If they do, what remedies would you suggest for overcoming the difficulties?

Q. 44. (i) What facilities are available to the operating Companies for

(a) current repairs and

(b) for obtaining certificates of airworthiness and overhaul of engines and major assemblies?

(ii) Are the facilities available at Hindustan Aircraft Limited, Bangalore, adequate to meet satisfactorily the requirements of all the Companies?

(iii) Are the charges made by the Hindustan Aircraft Limited reasonable?

(iv) Which of the operating Companies maintain their own organisation for

(a) current repairs and

(b) for obtaining certificates of airworthiness and overhaul of engines and major assemblies for internal and external air services?

Please state the capacity of each. Do you consider this arrangement necessary and economic, in view of the facilities available at Hindustan Aircraft Limited?

(v) If the capacity of the repair and overhaul organisation maintained by the operating Companies taken together with the facilities at Hindustan Aircraft Limited is more than what is required to meet the needs of the air transport industry in India, what suggestions would you make for the utilisation of the total facilities available to the best advantage of the industry?

Q. 45. (i) Is the supply of—

(a) flying personnel and

(b) engineering personnel both for internal and external services, adequate and available on reasonable terms?

If not what suggestions would you make to improve the position?

(ii) How do the emoluments of different categories of staff in India compare with those in U.S.A., Canada and Australia?

**Please give figures.**

(iii) What facilities are available in India for training

(a) flying personnel and

(b) engineering personnel, both for internal and external services?

(iv) Which of the operating companies maintain their own organisation for training personnel and what is its capacity? Is such separate organisation necessary and economic in view of the training facilities available in the flying clubs and the Civil Aviation Training Centre, Allahabad?

(v) Do you consider the facilities available at the flying clubs and the Civil Aviation Training Centre, adequate to meet the requirements of the Industry?

Q. 46. What are the present arrangements for insuring—

(a) aircraft

(b) aircraft personnel and

(c) air passengers?

What are the rates for each category? Do you consider these arrangements satisfactory and economic? If not, have you any suggestions to make for their improvement?

Q. 47. (a) How many units of the aircraft fleet of the companies will require to be replaced during the next five years? Have you any views on schemes for replacement?

(b) Have you considered the feasibility of replacement by the companies of the existing types of aircraft by more efficient and economical ones? Please give details.

(c) What financial provision have the companies made for the purpose? If you consider the provision inadequate, how could the necessary funds be raised?

(d) Would the Companies require any State assistance for the purpose and if so, what should be the extent and form of such assistance?

- Q. 48. What has been the effect of operations by non-scheduled operators on the volume of traffic and on the revenue of scheduled operators? Do you know of any cases of deliberate undercutting in fares and freight rates? Give specific instances. What measures of control would you suggest on the non-scheduled operations to minimise their adverse effect on scheduled operations?
- Q. 49. What in your opinion are the possibilities of effecting economy in expenditure in respect of—
- (a) booking arrangements
  - (b) surface transport
  - (c) passenger and freight handling and
  - (d) any other matter, by way of pooling or any other method?
- Q. 50. Do you consider the present air route pattern in India satisfactory? If not, have you any suggestions to make for its improvement?
- Q. 51. Do you consider the present allocation of routes amongst the scheduled operators satisfactory? If not, what suggestions would you make to improve it?
- Q. 52. In the light of your experience, have you any suggestions to make for
- (a) the amendment of the Indian Aircraft Rules relating to the licensing air transport services, and
  - (b) their administration?
- Q. 53. Do you consider that at present there is an excessive number of companies operating scheduled air services? If so, what, in your opinion, would be a reasonable number and what should be the economic size of each? What are the factors which should be taken into consideration for determining the size of such a company?
- Q. 54. If you consider that the present number of Companies is excessive and should be reduced, what concrete and practicable schemes, e.g. merger, would you propose to bring about the necessary reduction, having regard to the fact that long-term licences were issued to the companies in 1949?

#### PART C— Economics of Air Transport Operations.

##### Section 3—(Questions to be answered by the Air Transport Licensing Board)

- Q. 55. Please give particulars (dates, routes, air lines, etc.) of all licences so far issued by the Air Transport Licensing Board?
- Q. 56 (i) Have there been cases where at the time of the grant of a licence, there was already an operator licensed for the same route in the sense that the terminal stations were the same? Please give details of such cases.
- (ii) Please state the considerations which weighed with the Board in granting duplicate licences in such cases. Does the Board consider this arrangement a sound one?

- Q. 57. (i) It has been suggested that in granting licences, the Board did not appreciate the paramount necessity for determining the routes which could reasonably be expected to offer an adequate volume of traffic. Is there any substance in this?
- (ii) How were the following requirements of Rule 140 of the Indian Aircraft Rules ascertained by the Board:—
- (a) the need for air transport in the area concerned;
  - (b) potential traffic on the route;
  - (c) the capacity or otherwise of the existing air services to cater for the routes in respect of which licences had been applied for; and
  - (d) the capacity of the applicant as an air transport operator?
- Q. 58. Have there been cases where the Board did not accept the advice of the Director General of Civil Aviation in granting licences? If so, please give the details of all such cases.
- Q. 59. Is it correct to say that in granting licences to certain companies, the Board found itself embarrassed by the commitments of Rulers of certain States to allow the building of aerodromes by a company of their own choice? If so, please give details.
- Q. 60. Please furnish a statement of the revenues of each company for the calendar years 1947, 1948 and 1949 and for the first quarter of 1950 in respect of scheduled flights—(passengers, freight and mail).
- Q. 61. Before issuing term licences in the early part of 1949, was any comprehensive review undertaken as regards
- (i) the result of the operations of each company during the period of its provisional licence; and
  - (ii) the financial condition of the various operators?
- Was there any case in which any company in possession of provisional licence was not given a term licence?
- Q. 62. (i) It has been stated that having regard to the volume of current and potential traffic, an excessive number of companies have been licensed to operate scheduled air services. Does the Board agree with this statement?
- (ii) If so, what, in the opinion of the Board, would be a reasonable number, and what should be the economic size of each? What are the factors which should be taken into consideration for determining the size of such a company?
- Q. 63. If the Board considers that the present number of companies is excessive and should be reduced what concrete and practicable schemes, e.g., merger, would it propose to bring about the necessary reduction, having regard to the fact that long term licences were issued to the companies in 1949?
- Q. 64. In issuing licences, did the Board guard against the dangers of wasteful and uneconomic competition?
- Q. 65. Please state, in tabular form, the changes in the level of passenger fares, freight rates and mail rates as fixed by the Board and as charged by the different companies since the 1st January 1946.

- Q. 66. (i) What is the minimum cost of operation per mile of
- (a) a Dakota,
  - (b) a Viking,
  - (c) a Skymaster, and
  - (d) a Constellation,
- with due regard to sound any safe operation? Please give details of the estimates, stating the assumptions made in regard to utilisation of aircraft and depreciation.
- (ii) In respect of the present routes, what in the Board's estimate should be the reasonable level of passenger fares, freight rates and mail rates to cover this minimum cost? Please give details of the calculations including
- (a) the load factor assumed; and
  - (b) the profits allowed for.
- (iii) Does the Board consider that a reduction in the fares and freight rates would lead to an adequate increase in traffic so as to
- (a) maintain, and
  - (b) increase the revenue of the companies? Please give estimates.
- Q. 67. What are the existing rates for the carriage of mails and on what basis have they been fixed? What, in the opinion of the Board, should be the principles that should govern the fixation of mail rates? Should they be different from those governing the fixation of passenger fares and freight rates? What is the practice followed regarding this matter in U.S.A., Canada, U.K. and Australia?
- Q. 68. (i) Please give a short note on the institution of the Night Air Service, with particular reference to the grant of licences for the operation of the service from time to time.
- (ii) What were the considerations which weighed with the Board in deciding to grant a licence for the Night Air Service in the first instance to the Indian Overseas Airlines and then to the Himalayan Aviation Limited, which till then had no experience of scheduled operations?
- (iii) Were the claims of other operators on the routes concerned taken into account? Were the relevant provisions of the Indian Aircraft Rules duly observed?
- (iv) What has been the effect of the Night Air Service on the volume of traffic (passengers, freight and mail)
- (a) on the lines operating them and
  - (b) on other lines?
- (v) Was the then existing ground organisation (e.g., lighting, navigational aids, etc.) for the Night Air Service adequate and satisfactory for the safe working of the service during
- (a) the fair weather season
  - (b) during the monsoon?
- What is the position now and in what direction does the Board consider improvements necessary to make the operation of the service possible throughout the year?

- Q. 69. Does the Board consider the present air route pattern in India satisfactory? If not, has it any suggestions to make for its improvement in the light of its experience?
- Q. 70. Does the Board consider the present allocation of routes amongst the scheduled operators satisfactory? If not, what suggestions would it make to improve it?
- Q. 71. In the light of the Board's experience, has the Board any suggestions to make for
- (a) the amendment of the Indian Aircraft Rules relating to the licensing of air transport services; and
  - (b) their administration?

**PART D— Future Development of the Air Transport Industry**

(Questions to be answered by the Air Transport Companies, the Director General of Civil Aviation and the Air Transport Licensing Board in respect of internal air services only.)

- Q. 72. What rate of increase in the volume of traffic (separatively for passengers, freight and mail) do you expect during the next 5 years on each of the routes at present operated within India?
- Q. 73. What, in your opinion, are the possibilities of developing new routes within India during the next five years? Please give details of the proposed routes and an estimate of potential traffic on each route.
- Q. 74. Do you consider it desirable to extend the facilities for air travel by introducing "Coach Class" service between high density traffic points? If so, what suggestions in this regard would you make? Please give details of potential traffic, fares and freight rates and estimated costs and revenues.
- ("Coach Class" service means a cheaper service on an austerity basis involving a reduction in passenger comforts by accommodating a larger number of passengers and the withdrawal of the facilities of free surface transport and food.) ...

Q. 75. In order to facilitate the proposed development of air transport, what extension of ground organisation (e.g., aerodromes, lighting, radio and navigational aids, meteorological facilities, etc.) do you consider, would be necessary?

Q. 76. Do you consider it desirable to introduce exclusive freighter services where they do not exist at present? If so, what suggestions in this regard would you make? Please give details regarding potential traffic, freight rates and estimated costs and revenues.

In this connection, the Companies already operating such services will please give details of their operations, in respect of the above points, and indicate the possibilities of extending them.

Q. 77. Have you any plans to increase (i) the frequencies on your existing routes and (ii) your scheduled route mileage? If so, please indicate them in as much detail as possible.



N.B. This question is intended to be answered by Air Transport Companies only.

- Q. 78. (i) Do you consider that the existing scheduled operators will be able to undertake the development of the proposed new routes on sound and economic lines? If so, on what basis should the business of such development be distributed amongst the existing operators?
- (ii) If not, what in your opinion, should be the number and economic size of new operators who should be licensed for the purpose?
- Q. 79. If the proposed development requires new capital, will it be possible to raise it in the existing conditions of the Industry and the present state of the capital market? If not, how should the proposed development be financed?
- Q. 80. Do you consider that for the purposes of the proposed development, there would be (a) an adequate supply of technical personnel (e.g., pilots, engineers) and (b) sufficient facilities for repair and overhaul of equipment? If not, what suggestions would you make to improve the position?
- Q. 81. For the purpose of the proposed development, do you consider it necessary that new aircraft should be purchased? If so, have you considered the question of acquiring more efficient and economic types of aircraft than the present ones? Please give your views in some detail, including (a) the capital cost of the aircraft and (b) the minimum cost of operating them per ton-mile.
- Q. 82. Having regard to the volume of traffic and the estimated cost of operation of the different types of aircraft likely to be in use during the next five years, what should be the level of passenger fares, freight and mail rates in order to break even?
- Q. 83. If the fixation of passenger fares and freight and mail rates at that level is likely to prove a deterrent to the development of air traffic, what, in your opinion, would be a reasonable level for passenger fares, etc.?
- Q. 84. If the earnings on the basis of such rates are not adequate to meet the cost of operations, please give an estimate of the deficit. What measures of State assistance, if any, would you suggest to cover that deficit?
- Q. 85. If it is found necessary for Government to give a subsidy or other kinds of financial aid to the Industry, should there be any Government control over the working of the companies concerned? If so, what should be the extent and method of such control?

#### PART E.—State Ownership and Management.

(Questions to be answered by the Air Transport Companies, the Director General of Civil Aviation and the Air Transport Licensing Board in respect of internal air services only)

- Q. 86. Do you consider the present organisation of the industry for the operation of scheduled air services satisfactory, having regard also to its development during the next five years? If not, what suggestions would you make for its reorganisation, with a view to making the operations self-supporting?

- Q. 87. If the operations cannot be made self-supporting at an early date, what is the extent and duration of State assistance that should be required by the Industry? In what form should it be given?
- Q. 88. Having regard to the present state of the industry and the need for its development on sound and economic lines, do you consider State ownership and management of the Industry desirable? Will such a step be practicable at the present time or during the next five years from the point of view
- (a) availability of necessary funds;
  - (b) efficiency of management; and
  - (c) economy of operation?
- Please give reasons for your views.
- Q. 89. If the Industry is to be owned by the State, can you give an estimate of the total cost of acquisition? On what basis has your estimate been worked out?
- Q. 90. If the Industry is to be managed by the State, should this be entrusted to a Government Department or to a Statutory Corporation? Please state your reasons?

#### PART F—Operation of External Services.

(Questions to be answered by the Air Transport Companies, the Director General of Civil Aviation and the Air Transport Licensing Board.)

- Q. 91. (i) Do you consider the air routes at present operated by the Indian Companies from India to the West and the East satisfactory and adequate? If not, what improvements would you suggest?
- (ii) What rate of increase in the volume of traffic (separately for passengers, freight and mail) do you expect on each of these routes during the next five years?
- (iii) What in your opinion, are the possibilities of developing new routes for external services during the next five years? Please give details of the proposed routes and an estimate of potential traffic on each route?
- (iv) Have you any plans to increase (a) the frequencies on your existing routes and (b) your scheduled route mileage? If so, please indicate them in as much detail as possible.

N.B. Part (iv) is intended to be answered by Air Transport Companies only.

- Q. 92. (i) Please state, in a tabular form, the changes in the level of passenger fares, freight and mail rates, since the commencement of external operations. Do the Companies follow in this respect the tariff fixed by the International Air Transport Association? On what basis is this tariff fixed?
- (ii) What has been the effect of those changes on (a) the volume of traffic and (b) the revenue from external air operations on different routes? Please give specific figures.
- Q. 93. (i) What is the minimum cost of operation per mile of a Constellation/a Skymaster, with due regard to sound and safe operation? Please give details of your estimates stating the assumptions you

have made in regard to utilisation of aircraft and depreciation. If the actual cost is more than the minimum cost, please state the reasons why it is so.

- (ii) In respect of the present routes, what, in your estimate, should be the reasonable level of passenger fares, freight rates and mail rates to cover this minimum cost? Please give details of the calculations including (a) the load factor assumed and (b) profits allowed for.
- (iii) Do you consider that a reduction in the fares and freight rates would lead to an adequate increase in traffic so as to (a) maintain and (b) increase the revenue? Please give estimates.
- Q. 94. On the basis of the minimum cost of operation and the existing level of passenger fares and freight and mail rates, what is the extent of the gap, if any, between the earnings and the expenditure for each of the last two financial years? What proposals would you make for covering the gap?
- Q. 95. (i) What facilities are available to the Companies for (a) current repairs and (b) obtaining certificates of airworthiness and overhaul of engines and major assemblies?
- (ii) If the Companies have their own organisation for this purpose please state its present capacity.
- Q. 96. (i) Is the supply of (a) flying personnel and (b) engineering personnel adequate and available on reasonable terms? If not, what suggestions would you make to improve the position? Is it feasible to introduce a measure of standardisation in their emoluments?
- (ii) How do the emoluments of different categories of staff in India compare with those in U.S.A., Canada, U.K. and Australia? Please give figures.
- (iii) What facilities are available to the Companies for training (a) flying personnel and (b) engineering personnel?
- (iv) If the Companies have their own organisation for this purpose, please state its present capacity. Is the organisation on the scale they possess necessary or economic, in view of the training facilities available in the flying clubs and the Civil Aviation Training Centre, Allahabad?
- (v) Do you consider the facilities available in the flying clubs and the Civil Aviation Training Centre adequate to meet the present requirements of the Industry?
- Q. 97. What procedure is followed in recruiting (a) flying (b) engineering and (c) administrative staff?
- Q. 98. What are the present arrangements for insuring (a) aircraft, (b) personnel and (c) passengers? Please state the rates paid for each category. Is it the practice to insure direct with an insurance Company or through its agents? Do you consider these arrangements satisfactory and economic? If not, have you any suggestions to make for their improvement?
- Q. 99. (a) How many units of your fleet will require to be replaced during the next five years? Please give details of your scheme for replacement.

- (b) Have you considered the feasibility of replacing the existing types of aircraft by more efficient and economical ones? Please give details.
- (c) What financial provision have you made for the purpose? If you consider the provision inadequate, how do you propose to raise the necessary funds?
- (d) Do you require any state assistance for this purpose and if so, what should be the extent and form of such assistance.

**N.B.** This question is intended to be answered by Air Transport Companies only.

- Q. 100. What are the existing rates for the carriage of mails and on what basis have they been fixed? What, in your opinion, should be the principles that should govern the fixation of mail rates? Should they be different from those governing the fixation of passenger fares and freight rates? What is the practice followed regarding this matter in U.S.A., Canada, U.K. and Australia?
- Q. 101. What has been the effect of the operations by non-scheduled operators on the volume of traffic and revenue in respect of external air services? Have there been any cases of deliberate undercutting in fares and freight rates? Give specific instances. What measures of control would you suggest over the non-scheduled operators to minimise their adverse effect on scheduled operators?
- Q. 102. What are the possibilities of effecting economy in expenditure in respect of (a) booking arrangements (b) surface transport (c) passenger and freight handling and (d) any other matter, by way of pooling or any other method?
- Q. 103. (i) Do you consider that the existing scheduled operators will be able to undertake the development of the proposed new routes on sound and economic lines? If so, on what basis should the business of such development be allocated amongst the existing operators?  
(ii) If not, what in your opinion, should be the number and economic size of new operators who should be licensed for the purpose?
- Q. 104. If the proposed development requires new capital, will it be possible to raise it in the existing condition of the Industry and the present state of the capital market? If not, how should the proposed development be financed?
- Q. 105. Do you consider that for the purposes of the proposed development, there would be (a) an adequate supply of technical personnel (e.g., pilots, engineers) and (b) sufficient facilities for repair and overhaul of equipment? If not, what suggestions would you make to improve the position?
- Q. 106. For the purpose of the proposed development, do you consider it necessary to purchase new aircraft? If so, have you considered the question of acquiring more efficient and economic types of aircraft than the present ones? Please give your views in some detail, including (a) the capital cost of the aircraft and (b) the minimum cost of operating them per ton-mile.
- Q. 107. If the earnings on the basis of rates fixed by International Transport Association are not adequate to meet the cost of the operations, please give an estimate of the deficit. What measures of State assistance would you suggest to cover that deficit?

- Q. 108. If Government were to give a subsidy or other kind of financial aid for the operation of external services, should there be any Government control over the working of the Companies concerned? If so, what should be the extent and method of such control?
- Q. 109. Do you consider the present organisation of the Industry for the operation of external air services satisfactory, having regard also to its development during the next five years? If not, what suggestions would you make for its reorganisation with a view to making the operations self-supporting?
- Q. 110. If the operations cannot be made self-supporting at an early date, what is the extent and duration of State assistance that would be required by the Industry? In what form should it be given?
- Q. 111. Having regard to the present state of external air services and the need for their development on sound and economic lines, do you consider State ownership and management of the organisation for the operation of the services desirable? Will such step be practicable at the present time or during the next five years from the point of view of (a) availability of necessary funds, (b) efficiency of management and (c) economy of operation? Please give reasons for your views.
- Q. 112. If the organisation for the operation of external air services is to be owned by the State, can you give an estimate of the total cost of establishing or acquiring that organisation? On what basis has your estimate been worked out?
- Q. 113. If the external air services are to be managed by the State, should this be entrusted to a Government Department or to a Statutory Corporation?

### PART G.

(Questions to be answered by Trade Associations, other bodies and persons interested in air transport and members of the general public.)

Please answer only those questions on which you have knowledge or information.

- Q. 114. Do you consider India's present air route pattern, both for internal and external services, satisfactory? If not, have you any suggestions to make for its improvement?
- Q. 115. What rate of increase in the volume of traffic do you expect on the existing routes during the next five years?
- Q. 116. What in your opinion are the possibilities of developing new routes, for both internal and external services, during the next five years? Please give details of the proposed routes and an estimate of potential traffic on each route?
- Q. 117. Is the present level of passenger fares, freight rates and mail rates reasonable?
- Q. 118. Do you consider that a reduction in the fares and freight rates would lead to an adequate increase in traffic so as to (a) maintain and (b) increase, the net revenue of the Operating Companies? If possible, please give estimates.

- Q. 119. Are there any serious difficulties in this country in regard to the availability (i) in adequate quantities and (ii) at reasonable rates, of (a) fuel and oil and (b) stores and spares? If so, what remedies would you suggest for over-coming the difficulties?
- Q. 120. How do the prices of (a) fuel and oil and (b) stores and spares in India compare with those in U.S.A., Canada, U.K. and Australia? Please give figures.
- Q. 121. (1) Is the supply of (a) flying personnel and (b) engineering personnel adequate and available on reasonable terms? If not, what suggestions would you make to improve the position? Is it feasible to introduce a measure of standardisation in their emoluments?
- (2) How do the emoluments of different categories of staff in India compare with those in U.S.A., Canada, U.K. and Australia? If possible please give figures.
- (3) Do you consider the training facilities available in the flying clubs and the Civil Aviation Training Centre, Allahabad, adequate to meet the present requirements of the Industry?
- Q. 122. What are the present arrangements for insuring (a) aircraft, (b) personnel and (c) passengers? Do you consider these arrangements satisfactory and economic? If not, have you any suggestions to make for their improvement?
- Q. 123. Do you consider the 'All-up' mail scheme and the institution of the Night Air Service satisfactory? If not, what modifications would you suggest for their improvement?
- Q. 124. Are you in favour of the continuance of operations by non-scheduled operators in competition with scheduled operators?
- Q. 125. Do you consider it desirable to extend the facilities for air travel by introducing a "Coach Class" service on an austerity basis at cheaper fares? By 'austerity basis' is meant a reduction in passenger comforts by providing accommodation for a larger number of passengers and the withdrawal of the facilities of free surface transport and free food.
- Q. 126. Do you consider it desirable to introduce exclusive freighter services where they do not exist at present? If so, what suggestions in this regard would you make?
- Q. 127. If it is proposed to undertake further development of air transport in India, will it be possible to raise the necessary capital for it in the existing conditions of the Industry and the present state of the capital market? If not, how should the proposed development be financed?
- Q. 128. Do you consider that for the purpose of such development, there would be an adequate supply of technical personnel, such as pilots and engineers? If not, what suggestions would you make to improve the position?
- Q. 129. If it is found necessary for Government to give a subsidy or other kind of financial aid to the air transport industry, should there be any Government control over the working of the companies concerned? If so, what should be the extent and method of such control?

- Q. 130. Have you any suggestions to make to enable the air transport industry to function with greater economy and efficiency?
- Q. 131. Do you consider the present organisation of the Industry for the operation of scheduled air services satisfactory, having regard also to its development during the next five years? If not, what suggestions would you make for its reorganisation, with a view to making the operations self-supporting?
- Q. 132. If the operations cannot be made self-supporting at an early date, what is the extent and duration of State assistance that would be required by the Industry? In what form should it be given?
- Q. 133. Having regard to the present state of the Industry and the need for its development on sound and economic lines, do you consider that State ownership and management of the Industry would be desirable? Will such a step be practicable at the present time or during the next five years from the point of view of
- (a) availability of necessary capital;
  - (b) efficiency of management and
  - (c) economy of operation?
- Please give reasons for your views.
- Q. 134. If the Industry is to be owned by the State, can you give an estimate of the total cost of acquisition? On what basis has your estimate been worked out?
- Q. 135. If the Industry is to be managed by the State, should this be entrusted to a Government Department or to a Statutory Corporation?
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## APPENDIX III

### List of Bodies and Persons to whom copies of the Committee's Questionnaire were sent

#### *Scheduled Operators.*

Air-India, Bombay  
Indian National Airways, New Delhi  
Air Services of India, Bombay  
Deccan Airways, Begumpet (Deccan)  
Airways (India), Calcutta  
Bharat Airways, Calcutta  
Indian Overseas' Airlines, Bombay  
Himalayan Aviation, Calcutta  
Kalinga Airlines, Calcutta  
Air-India International, Bombay

#### *Non-Scheduled Operators*

Air Survey Company of India, Dum Dum  
Dalmia Jain Airways, Delhi  
Indamer Company, Bombay  
Nalanda Airways, Patna  
Jamair Company, Bombay  
H. H. Maharaja Jiwaji Rao Scindia of Gwalior, Gwalior  
The Maharajadhiraja of Darbhanga, Darbhanga (Bihar)

#### *Flying Clubs*

Delhi Flying Club, New Delhi  
Bombay Flying Club, Bombay  
Orissa Flying Club, Phubaneswar (Orissa).  
Bengal Flying Club, Barrackpore (Calcutta)  
Northern India Flying Club, Jullundur  
Aero Club of India, New Delhi  
Madras Flying Club, Madras  
Bihar Flying Club, Patna  
Hind Provincial Flying Club, Lucknow  
Hyderabad State Aero Club, Begumpet (Deccan)  
C.P. and Perar Flying Club, Nagpur

#### *Other bodies and persons interested in Civil Aviation*

The Federation of Indian Chambers of Commerce and Industry, New Delhi.  
The Associated Chambers of Commerce of India, Calcutta.  
Standard Vacuum Oil Company, Bombay



Burmah-Shell Oil Storage and Distributing Company of India Limited, Bombay.

Caltex (India) Limited, Bombay

Air Technical Training Institute, Dum Dum (24 Parganas)

Hindustan Aircraft Limited, Bangalore

Aviation Industries (India) Ltd., Calcutta

Indian Society of Aeronautical Engineers, Dum Dum (24 Parganas);

Society of British Aircraft Constructors, New Delhi

Greaves Cotton and Company, Limited, Bombay

Indian Pilots' Guild, Bombay

Air-India Employees' Union, Bombay

'Air-India Licensed Ground Engineers' Association, Bombay

All-India Aero Employees' Federation, Bangalore

'All-India Air Line Radio Officers' Association, Bombay

British Aviation Insurance Company Ltd., Calcutta

Indian Airways Magazine, Calcutta

"Indian Skyways", Bombay

Aeronautical Society of India, New Delhi

The Air Transport Association of India, New Delhi.

Continental Freight and Transport, Bombay

H. R. Haseler, Bombay

R. K. Dundas, (Eastern) Limited, Bombay

The Indian Life Insurance Offices' Association, New Delhi

The Punjab Chamber of Commerce, New Delhi

Engineering Association of India, Calcutta

British Overseas Airways Corporation, New Delhi

Indian Merchants' Chamber, Bombay

Mr. S. V. Aiyer, Chief Cost Accounts Officer, Calcutta

Mr. S. K. Datta Ray, Calcutta

Mr. Harold Caplan, Calcutta

Mr. E. P. Rao, Hyderabad (Deccan)

Mr. T. D. Kumar, New Delhi

Mr. Ramanathan, Coimbatore

Mr. P. K. Ghosh, Calcutta

Mr. H. M. Nolan, Bombay

Mr. K. S. Balakrishnan, Calcutta

Dr. V. M. Ghatage, Bangalore

Mr. G. C. Arya, Bombay

Mr. S. R. Khanna, Delhi

Captain Williamson, Bombay

*Ministries of the Government of India and State Governments.*

Ministries of Communications, Finance, Defence, Industry and Supply,  
Home Affairs, Commerce and States.

Prime Minister's Secretariat, Cabinet Secretariat, and Planning Commission.

Director General of Civil Aviation.

Director General of Posts and Telegraphs.

Air Transport Licensing Board.

Director General of Observatories.

Principal Information Officer.

Chief Secretaries to the Governments of Madras, West Bengal, Bombay, Uttar Pradesh, Punjab, Bihar, Assam, Madhya Pradesh, Orissa, Jammu and Kashmir, Mysore, Rajasthan, Travancore-Cochin, Hyderabad, Madhya Bharat, Patiala and East Punjab States Union, and Saurashtra.

Chief Commissioners of Ajmer, Andaman and Nicobar Islands, Bilaspur, Bhopal, Tripura, Delhi, Coorg, Himachal Pradesh, Kutch, Manipur (Assam), Vindhya Pradesh.

Deputy Commissioner of Labour (Administration), Bombay

*All Members of Parliament*

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## APPENDIX IV

### List of Bodies and persons who sent replies to the Committee's Questionnaire.

Air-India  
Indian National Airways  
Air Services of India  
Deccan Airways  
Airways (India)  
Bharat Airways  
Indian Overseas Airlines  
Himalayan Aviation  
Dalmia Jain Airways  
Air-India International  
Kalinga Airlines  
Nalanda Airways  
Indamer Company  
Hindustan Aircraft Ltd  
Greaves Cotton & Co., Ltd. (Aviation Division)  
Indian Pilots' Guild, Bombay  
All-India Airline Radio Officers' Association, Bombay  
All-India Licensed Ground Engineers' Association, Bombay  
Air-India Employees' Union  
Madras Flying Club, Madras  
Indian Skyways, Bombay  
Burmah-Shell Oil Storage & Distributing Co. of India Ltd  
Air Transport Licensing Board  
Director General of Civil Aviation  
Ministry of Commerce  
Ministry of Finance (Department of Economic Affairs)  
Government of Manipur  
Government of Tripura  
Government of Madras  
Government of Hyderabad  
Government of Saurashtra  
Government of Mysore  
Government of West Bengal  
Government of Punjab  
Director of Industries and Labour, Delhi  
Chief Pilot, Government of Rajasthan  
Cochin Chamber of Commerce, Cochin  
Upper India Chamber of Commerce, Kanpur  
Chamber of Commerce, Bombay  
Indian Chamber of Commerce, Calcutta

Bengal Chamber of Commerce, Calcutta  
 Federation of Indian Chambers of Commerce & Industry, New Delhi  
 Indian Merchants' Chamber, Bombay  
 Southern India Chamber of Commerce, Madras.  
 Punjab Chamber of Commerce, New Delhi  
 Marwari Association, Calcutta  
 Servants of India Society, Nagpur  
 The British Aviation Insurance Co., Ltd., Calcutta  
 Sterling General Insurance Co., Ltd., New Delhi  
 R. K. Dundas (Eastern) Ltd., Bombay  
 Mr. T. D. Kumar, New Delhi  
 Mr. G. C. Arya, Bombay  
 Mr. S. K. Datta Ray, Calcutta.  
 Dr. R. V. Rao and Mr. B. P. Rao, Hyderabad  
 Mr. V. M. Nayar, Dum Dum.  
 Mr. M. R. Masani, Member of Parliament  
 Commander B. W. Galpin, B.O.A.C. Representative in India

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## APPENDIX V

### List of bodies and persons who gave oral evidence before the Commission

<i>Body examined</i>	<i>Names of Representatives</i>	<i>Date</i>
Air Services of India . . . . .	W/Cdr. W.H. Burbury Shri R. C. Jalundhwala Shri S. M. Kapadia	21-6-50
Indian Overseas Airlines . . . . .	Mr. J. M. Akhaney Mr. A. Prakash Mr. B. G. Menon	27-6-50
Air-India . . . . .	Mr. J. R. D. Tata Mr. Gurunath Bewoor Mr. J. D. Choksi Mr. K. G. Bhore Mr. A. C. Gazdar Mr. S. K. Kooka Mr. N. J. Pavri Mr. D. M. Desai	29&30-6-50
Indian National Airways . . . . .	Mr. J. M. Gupta Captain L. M. Manilal Mr. T. D. Kumar Mr. R. S. Sandill Mr. G. D. Mathur	2-7-50
Air-India International . . . . .	Mr. J. R. D. Tata Mr. Gurunath Bewoor Mr. J. D. Choksi Mr. K. G. Bhore Mr. N. J. Pavri Mr. S. K. Kooka	4-7-50
Airways (India) . . . . .	Mr. K. K. Roy Captain Chitamber	5-7-50
Deccan Airways . . . . .	Mr. P. M. Reddy Mr. K. V. Reddy Mr. Goodey Mr. Subba Rao	6-7-50
Burmah-Shell Oil Storage & Distributing Company of India Ltd. . . . .	Mr. L. J. P. Swabey. Mr. P. A. V. Dolleymore.	12-7-50
Indian Merchants Chamber . . . . .	Mr. R. G. Saraiya Mr. A. C. Ramalingam	"
Federation of Indian Chambers of Commerce & Industry, New Delhi.	Mr. P. C. Rao (As observer).	"
Chamber of Commerce, Bombay . . . . .	Mr. L. A. Halsall Mr. C. A. Petit	"
Indian Pilots' Guild . . . . .	Capt. A. J. Chaves Mr. D. A. Samant	"
All India Licensed Ground Engineers' Association.	Mr. S. E. Shroff.	"
Air-India Employees' Union . . . . .	Mr. N. C. Mukerji. Mr. B. V. Ajgaonkar. Mr. B. Rammya	"

<i>Body examined</i>	<i>Names of Representatives</i>	<i>Date</i>
Director General of Civil Aviation	Mr. T. P. Bhalla Mr. O. N. Dang Mr. A. Varadachari	13-7-50 21-7-50 22-7-50 & 24-7-50
Bharat Airways	Mr. V. M. Pawar Mr. C. L. Kejriwal Mr. C. J. Lalkaka Mr. B. L. Shah	14-7-50
Indian Chamber of Commerce, Calcutta	Mr. C. L. Kejriwal	14-7-50
Himalayan Aviation	Mr. R. E. W. Tomsett Capt. S. Bujakowski Mr. G. R. Todd Mr. Charles Eley	15-7-50
I.N.A. Workers' Union	Mr. P. N. Natesan	19-7-50
All-India Airline Radio Officers' Association	Mr. Govindan	19-7-50
Greaves Cotton & Co. Ltd.	Mr. N. M. Wagle Mr. M. F. C. Elliott	19-7-50
Messrs R. K. Dundas (Eastern) Ltd.	Mr. E. A. King	19-7-50
Director General of Posts & Telegraphs	Mr. Krishna Prasada Mr. L. K. Narayanaswamy	22-7-50
Aircraft Ground Engineers' Association, New Delhi.	Mr. Lalvani	24-7-50

<i>Name</i>	<i>Informal Discussions</i>	<i>Date</i>
Mr. J. R. D. Tata	.	30-6-50
Mr. N. Dandekar	.	23-7-50
Prof. D. R. Gadgil	.	27-7-50
General J. H. Doolittle	.	17-8-50

## APPENDIX VI

**Statement showing companies and routes in respect of which provisional or temporary licences were granted to them by the Air Transport Licensing Board upto 30th June 1949**

<i>Description of Route</i>	<i>Date of grant</i>
<b>1. Air-India.</b>	
Karachi-Ahmedabad-Bombay-Hyderabad-Madras-Colombo . . . . .	1-10-1946
Bombay-Ahmedabad-Delhi . . . . .	1-10-1946
Bombay-Nagpur-Calcutta . . . . .	1-10-1946
Madras-Bangalore-Cochin-Trivandrum . . . . .	15-1-1947
Delhi-Jaipur . . . . .	15-12-1948
Bombay-Baroda-Ahmedabad . . . . .	28-3-1949
<b>2. Indian National Airways.</b>	
Calcutta-Allahabad-Kanpur-Delhi-Lahore-Rawalpindi-Peshawar . . . . .	1-10-1946
Delhi-Jodhpur-Karachi . . . . .	1-10-1946
Delhi-Lucknow . . . . .	1-10-1946
Lahore-Bikaner-Jodhpur-Ahmedabad . . . . .	1-10-1946
Karachi-Quetta-Lahore . . . . .	1-10-1946
Calcutta-Rangoon . . . . .	1-11-1947
Delhi-Amritsar . . . . .	1-1-1948
Calcutta-Agartala . . . . .	7-5-1949
<b>3. Air Services of India.</b>	
Bombay-Jamnagar-Bhuj-Karachi . . . . .	1-10-1946
Bombay-Bhopal-Kanpur-Lucknow . . . . .	1-10-1946
Bombay-Bhavanagar . . . . .	4-10-1946
Porbandar-Jamnagar-Ahmedabad . . . . .	7-10-1946
Bombay-Indore-Gwalior-Agra-Delhi . . . . .	7-4-1947
Jamnagar-Mandvi-Bhuj . . . . .	23-3-1948
Bombay-Rajkot-Morvi . . . . .	24-2-1949
Bombay-Poona-Bangalore . . . . .	26-2-1949
<b>4. Deccan Airways.</b>	
Delhi-Bhopal-Nagpur-Hyderabad-Madras . . . . .	1-10-1946
Hyderabad-Bangalore . . . . .	1-10-1946
Hyderabad-Bombay . . . . .	1-2-1947
Hyderabad-Vijayavada-Visakhapatnam . . . . .	15-1-1949
Madras-Vijayavada . . . . .	21-2-1949
Madras-Tiruchirappally-Madurai . . . . .	2-7-1949
<b>5. Dalmia Jain Airways.</b>	
Delhi-Amritsar-Jammu-Srinagar . . . . .	27-4-1948
Amritsar-Srinagar (Freighter) . . . . .	5-6-1948
<b>6. Bharat Airways.</b>	
Calcutta-Gaya-Lucknow-Delhi, (with permission for introducing additional halts at Patna and Banaras) . . . . .	30-6-1947
Delhi-Kanpur-Allahabad-Calcutta . . . . .	24-10-1947
Delhi-Amritsar . . . . .	1-1-1948
Calcutta-Chittagong . . . . .	5-6-1948
Calcutta-Bangkok-Saigon-Honkong-Shanghai . . . . .	22-1-1949
Calcutta-Agartala . . . . .	27-5-1949
<b>7. Airways (India.)</b>	
Calcutta-Bhubaneswar-Visakhapatnam-Madras-Bangalore . . . . .	15-4-1947
Calcutta-Dacca . . . . .	5-6-1948
Calcutta-Bagdogra-Gauhati-Mohanbari . . . . .	15-1-1949

**8. Maltri Airways (later changed to Indian Overseas Airlines)**

Bombay-Nagpur-Calcutta . . . . .	4-10-1946
Nagpur-Jubbulpore-Allahabad-Kanpur-Lucknow . . . . .	19-2-1948
Nagpur-Hyderabad-Bangalore-Madras . . . . .	28-2-1948
Calcutta-Bangkok-Singapore-Batavia-Saurabaya-Darwin-Sydney . . . . .	22-1-1949
Delhi-Nagpur-Madras . . . . .	30-1-1949
Bombay-Nagpur-Calcutta . . . . .	20-1-1949

**9. Orient Airways**

Calcutta-Akyab-Rangoon . . . . .	10-6-1947
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**10. Ambica Airlines**

Bombay-Baroda-Ahmedabad-Deesa-Jodhpur-Bikaner-Amritsar . . . . .	27-1-1947
Bombay-Rajkot-Morvi . . . . .	10-3-1947
Bombay-Poona-Bangalore . . . . .	7-6-1948

**11. Jupiter Airways**

Madras-Visakhapatnam-Nagpur-Agra-Delhi . . . . .	1-6-1948
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**12. Kalinga Airlines.**

Calcutta-Agartala (Freighter) . . . . .	6-6-1949
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**13. Air-India International**

Bombay-Cairo-Geneva-London . . . . .	1-6-1948
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APPENDIX VII

Statement of 10 year term licences granted by the Air Transport Licencing Board on the 1st July 1949

Airline	Route	Remarks
1. Air-India Bombay	<ul style="list-style-type: none"> <li>1. Bombay—Delhi. (non-stop)</li> <li>2. Bombay—Ahmedabad—Jaipur—Delhi.</li> <li>3. Bombay—Calcutta. (non-stop).</li> <li>4. Bombay—Madras. (non-stop)</li> <li>5. Ahmedabad—Karachi.</li> <li>6. Ahmedabad—Bombay—Hyderabad—Madras—Colombo.</li> </ul>	<p>The two routes are operated as Bombay—Ahmedabad—Karachi and Bombay—Madras—Trichinopoly—Colombo.</p>
2. Indian National Airways, New Delhi.	<ul style="list-style-type: none"> <li>7. Bombay—Baroda—Ahmedabad</li> <li>8. Madras—Bangalore—Coimbatore—Cochin—Trivandrum.</li> <li>9. Bombay—Karachi</li> <li>1. Delhi—Calcutta. (non-stop)</li> <li>2. Delhi—Amritsar—Jammu—Srinagar.</li> </ul>	<p>The service has been allowed to be suspended.</p>
	<ul style="list-style-type: none"> <li>3. Delhi—Amritsar—Srinagar. (Freight).</li> <li>4. Delhi—Jaipur—Jodhpur—Bikaner—Delhi</li> <li>5. Delhi—Jodhpur—Karachi</li> </ul>	<p>Provisionally allowed to be reconstituted and operated as :—(i) Delhi—Amritsar—Jammu—Srinagar, on three days of the week. (ii) Delhi—Amritsar—Srinagar and Srinagar—Jammu, on the other four days of the week.</p> <p>Service not commenced so far.</p>

Airline	Route	Remarks
	6. Delhi—Lahore.	
	7. Calcutta—Rangoon (non-stop).	
3. Air Services of India, Bombay	1. Bombay—Indore—Gwalior—Delhi.	
	2. Bombay—Jammagar—Bhuj.	Allowed to be operated as Bombay—Jammagar—Bhuj on 4 days of the week, and as Bombay—Kochol—Forbandar—Jammagar—Bhuj on the other 3 days of the week.
	3. Bombay—Bhavanagar—Rajkot.	
	4. Bhuj—Karschi	
4. Deccan Airways, Hyderabad, (Deccan)	1. Delhi—Bhopal—Nagpur—Hyderabad—Madras.	Halt at Bhopal allowed to be omitted and the air route reconstituted as Delhi—Nagpur—Hyderabad—Madras.
	2. Hyderabad—Bombay	
	3. Hyderabad—Bangalore	
5. Airways (India), Calcutta.	1. Calcutta—Bhubaneswar—Vizagapatnam—Madras—Bangalore.	Allowed to be operated as Calcutta—Bhubaneswar—Madras—Bangalore on 3 days of the week and as Calcutta—Vizagapatnam, Madras—Bangalore on the other 4 days of the week.
	2. Calcutta—Gauhati—Mohanbari . . . . .	For operation of exclusive freighter service Calcutta—Gauhati-sector of the air route temporarily allowed to be reconstituted as Calcutta—Gauhati—Shillong—Calcutta.
	3. Calcutta—Bagdogra.	
	4. Calcutta—Dacca.	
6. Bihar Airways, Calcutta	1. Calcutta—Allahabad—Kanpur—Delhi.	
	2. Calcutta—Patna—Barras—Lucknow—Delhi.	
	3. Calcutta—Agartala—Khumbrigam . . . . .	Provisionally allowed to be extended to Imphal.
	4. Calcutta—Chittagong.	



**APPENDIX VIII**

**List of Non-Scheduled Operators and the amount of flying done by them during 1947-1950**

Name of the Company	Hours flown by non-scheduled operators during.			
	1947*	1948	1949	1950 1st Qr.
1. Dalmia Jain Airways † . . . . .	3242-15	4261-29	745-30	276-10
2. Air Survey Company of India . . . . .	3480-20	40-25	67-45	52-45
3. Segal Air Transport . . . . .	78-45	49-30	..	..
4. Hindustan Airways Company . . . . .	104-05	..	..	..
5. Mr. C. T. Quin, Jamnagar . . . . .	..	154-55	..	..
6. Indarner Company . . . . .	..	181-15	3803-05	2034-35
7. Kalinga Airlines § . . . . .	..	1386-32	4275-35	1053-15
8. Jamair Company . . . . .	..	183-30	562-55	1408-00
9. Himalayan Aviation ‡ . . . . .	..	643-10	2771-59	844-26
10. Nalanda Airways . . . . .	..	19-10	640-31	232-55**
11. Shaways (India) . . . . .	..	..	181-35	..
<b>TOTAL</b> .	<b>6905-25</b>	<b>6919-56</b>	<b>13048-55</b>	<b>5902-06</b>

\*Includes non-revenue flights as well.

†Became a purely non-scheduled operator from July 1949.

§Became a scheduled operator in May 1949.

‡Became a scheduled operator in October 1949.

\*\* For January and February only.

## APPENDIX IX

Statement showing scheduled Air Transport Services operated by the different companies on 1st July 1950

Route	Frequency
<b>1. Air-India.—</b>	
Bombay-Madras-Tiruchirapally-Colombo . . . . .	Daily
Bombay-Almedabad-Karachi . . . . .	Daily
Bombay-Calcutta . . . . .	Daily
Bombay-Delhi . . . . .	Daily
Bombay-Almedabad-Jaipur-Delhi . . . . .	4 weekly
Bombay-Karachi . . . . .	Daily
Bombay-Madras . . . . .	3 weekly
Madras-Bangalore-Coimbatore-Cochin-Trivandrum . . . . .	Daily
Bombay-Delhi (Nightly) . . . . .	Daily
<b>2. Indian National Airways.—</b>	
Delhi-Calcutta (Non-stop) . . . . .	Daily
Delhi-Jodhpur-Karachi . . . . .	3 weekly
Delhi-Lahore . . . . .	Daily
Calcutta-Rangoon (Non-stop) . . . . .	Daily
Delhi-Amritsar-Srinagar . . . . .	4 weekly
Srinagar-Jammu . . . . .	4 weekly
Delhi-Srinagar . . . . .	Daily
Delhi-Amritsar-Jammu-Srinagar . . . . .	3 weekly
<b>3. Air Services of India.—</b>	
Bombay-Jamnagar-Bhuj-Karachi . . . . .	4 weekly
Bombay-Keshod-Porbandar-Jamnagar-Bhuj . . . . .	3 weekly
Bombay-Bhavnagar-Rajkot . . . . .	Daily
Bombay-Indore-Gwalior-Delhi . . . . .	3 weekly
Bombay-Poona-Bangalore . . . . .	4 weekly
<b>4. Deccan Airways.—</b>	
Delhi-Nagpur-Hyderabad-Madras . . . . .	Daily
Hyderabad-Bombay . . . . .	Daily
Hyderabad-Bangalore . . . . .	Daily
<b>5. Airways (India).—</b>	
Calcutta-Bhubaneshwar-Madras-Bangalore . . . . .	3 weekly
Calcutta-Visakhapatnam-Madras-Bangalore . . . . .	4 weekly
Calcutta-Gauhati . . . . .	3 daily
Calcutta-Gauhati-Mohanbari . . . . .	Daily
Calcutta-Bagdogra . . . . .	3 daily
Calcutta-Dacca . . . . .	3 daily
Calcutta-Bagdogra (freighter) . . . . .	3 weekly
<b>6. Bharat Airways.—</b>	
Calcutta-Allahabad-Kanpur-Delhi . . . . .	1 weekly
Calcutta-Patna-Banaras-Lucknow-Delhi . . . . .	Daily
Calcutta-Chittagong . . . . .	2 Daily
Calcutta-Agartala . . . . .	9 daily
Agartala-Gauhati . . . . .	Daily
Calcutta-Bangkok . . . . .	1 weekly

(Service on the route Calcutta-Rangoon-Bangkok-Singapore recently licensed, has not yet commenced.)

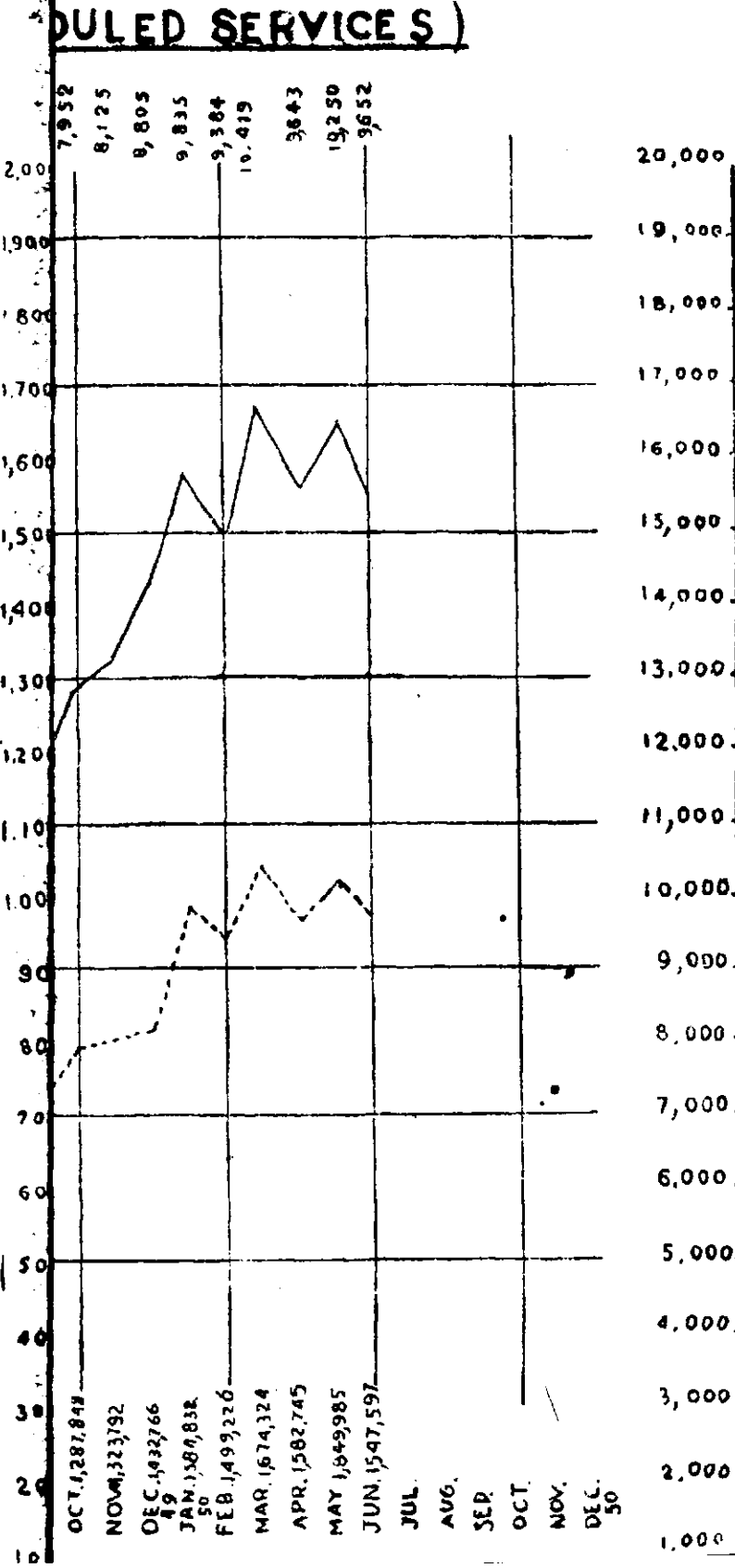
<i>Route</i>	<i>Frequency</i>
<b>7. Indian Overseas Airlines—</b>	
Bombay-Nagpur-Calcutta . . . . .	Daily
<b>8. Himalayan Aviation—</b>	
Delhi-Nagpur-Madras . . . . .	Nightly
Bombay-Nagpur-Calcutta . . . . .	Nightly
<b>9. Kalinga Airlines.—</b>	
Calcutta-Agartala (freighter or service) . . . . .	6 daily
<b>10. Air-India International.—</b>	
Bombay-Basra-Cairo-Geneva-London . . . . .	2 weekly
Bombay-Cairo-Rome-London . . . . .	1 weekly
Bombay-Adon-Nairobi . . . . .	1 weekly

APPENDIX X.

Route mileage operated by scheduled Air Transport companies, annual flying hours on the basis of services and frequencies operated by them on the 1st July 1950 and numbers and categories of Aircraft possessed by them

Name of Company	Route mileage as on 1-7-50	Annual flying hours on the basis of services and frequencies operated on 1-7-50	Number and categories of transport aircraft possessed on 1st April 1950
Air-India . . . . .	5,940	26,629	14 Dakotas 7 Vikings
Indian National Airways . . . . .	3,880	13,333	11 Dakotas 5 Vikings
Air Services of India . . . . .	2,548	6,474	8 Dakotas 2 SO-95's
Deccan Airways . . . . .	1,819	8,335	13 Dakotas
Airways (India) . . . . .	2,016	18,650	11 Dakotas
Bharat Airways . . . . .	3,233	17,300	12 Dakotas 2 Skymasters
Indian Overseas Airlines . . . . .	1,037	4,990	15 Dakotas 1 Skymaster.
Himalayan Aviation . . . . .	2,132	10,098	7 Dakotas
Kalinga Airlines . . . . .	196	5,850	5 Dakotas.
<b>TOTALS</b> . . . . .	<b>22,801</b>	<b>1,11,659</b>	96 Dakotas 12 Vikings 3 Skymasters 2 SO-95's

MILES FLOWN SCALE 1" = 200,000 MILES



HOURS FLOWN. SCALE 1" = 2,000 HOURS.



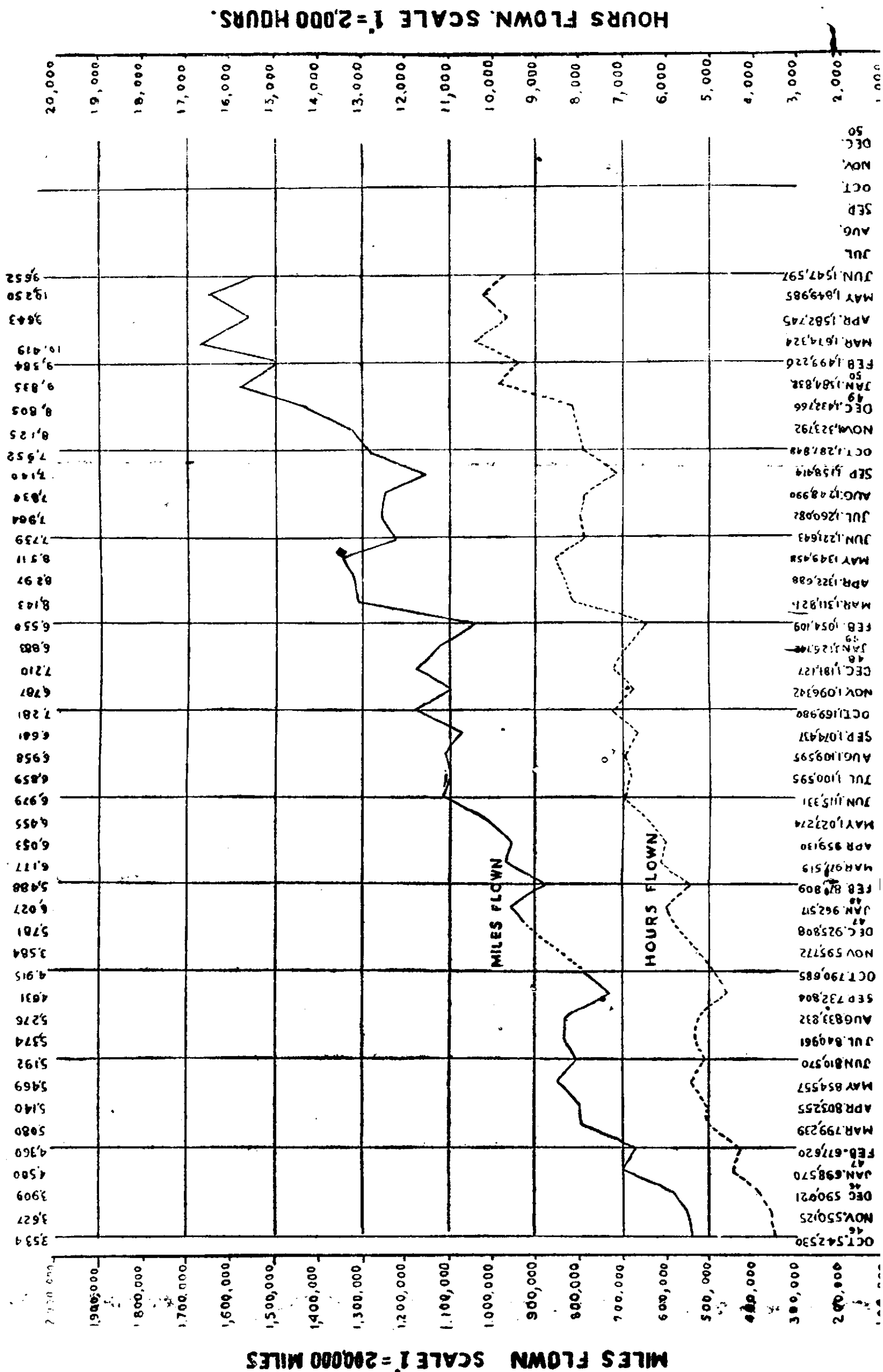
APPENDIX XI

Progress of Air Traffic carried by Indian Airlines on Scheduled Services during 1946-50

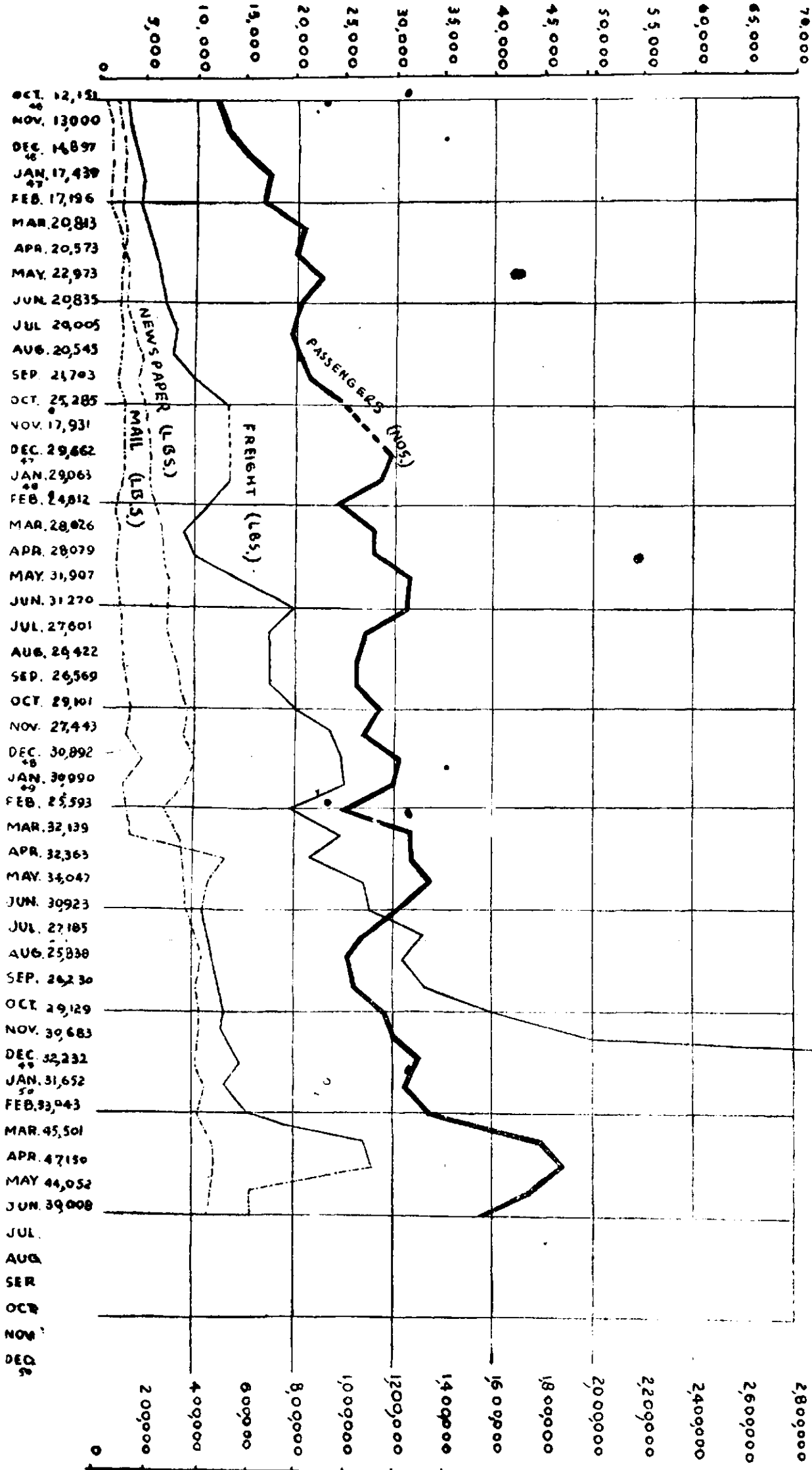
(Internal and International)

Year	Route mileage on the last day of the period	Miles flown	Hours flown	Number of passengers carried	Number of Mails carried (including 2nd Class mails) lbs.	Freight carried lbs.	Newspaper carried lbs.	Total load carried ton-miles	Load factor %
1946	10,123	4,520,048	29,539	105,251	1,029,403	1,318,153	567,573	6,391,219	74.8
1947	11,790	9,361,673	59,302	254,960	1,405,073	3,868,546	1,779,016	14,355,164	77.2
1948	18,685	12,648,765	78,961	341,186	1,582,645	8,156,471	3,818,265	19,295,532	73.3
1949	19,193	15,098,354	93,943	357,415	5,031,959	17,774,994	4,724,685	23,249,052	63.6
1950 (based on figures for January to June)	23,064	18,857,418	118,366	482,612	9,272,410	75,890,806	5,600,184	33,979,934	65.1

# MILES AND HOURS FLOWN (SCHEDULED SERVICES)



PASSENGERS. SCALE 1 = 10,000 PERSONS



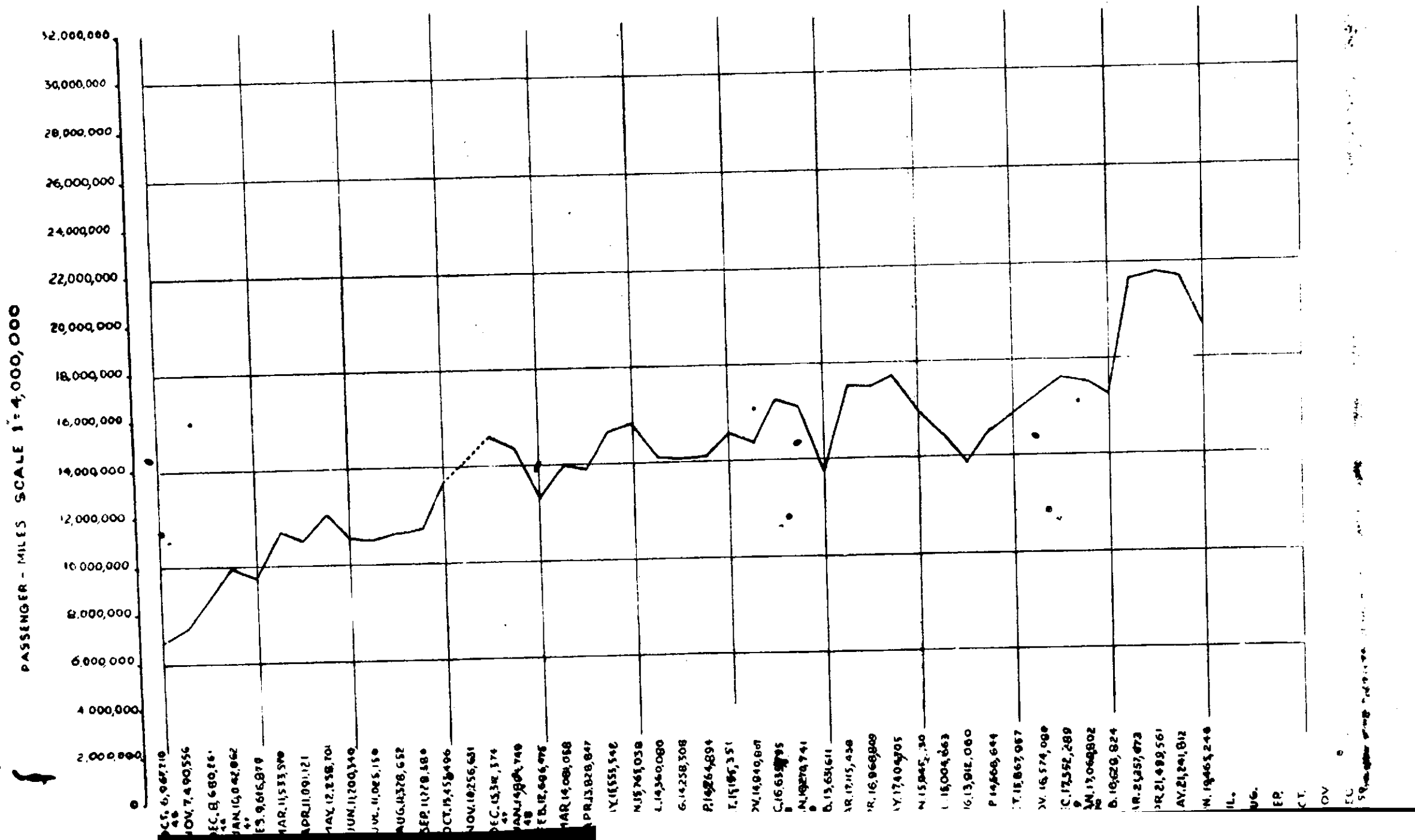
MAIL (LBS.)	NEWS PAPER (LBS.)	FREIGHT (LBS.)
112,785	58,635	129,007
111,084	71,800	143,988
124,484	71,379	162,900
120,580	72,346	192,739
119,721	64,051	181,905
136,226	103,543	204,111
123,439	122,104	240,020
116,071	142,315	260,032
108,649	153,772	281,824
118,200	160,623	334,714
110,097	197,948	313,942
99,139	183,723	408,308
126,049	214,094	528,013
104,769	142,568	386,195
120,633	235,322	742,088
121,744	233,559	544,894
106,864	254,229	467,947
109,167	282,272	363,279
96,333	287,123	406,371
100,766	298,053	597,801
111,239	308,934	812,179
120,984	307,624	702,392
122,582	336,293	712,770
148,071	354,910	718,121
112,910	376,843	797,647
168,292	364,376	961,803
201,493	414,073	1,073,467
142,232	388,494	1,008,171
142,437	364,674	984,508
163,972	350,158	989,323
525,140	359,844	864,530
463,259	449,352	1,094,634
453,557	379,171	1,130,440
475,459	405,445	1,329,998
481,701	440,848	1,256,677
510,336	419,000	1,384,347
522,825	439,774	1,602,187
547,909	432,719	2,026,713
601,140	435,215	4,323,324
540,380	459,480	6,830,973
613,131	431,237	7,005,520
1,095,265	403,268	8,440,336
1,123,689	484,162	5,162,339
630,008	482,172	6,275,888
633,732	459,176	4,234,444

PASSENGERS, FREIGHT, NEWSPAPER & MAIL ON ALL SCHEDULED SERVICES (REVENUE TRAFFIC ONLY)

FREIGHT NEWSPAPER AND MAIL SCALE 1 = 400,000 LBS.

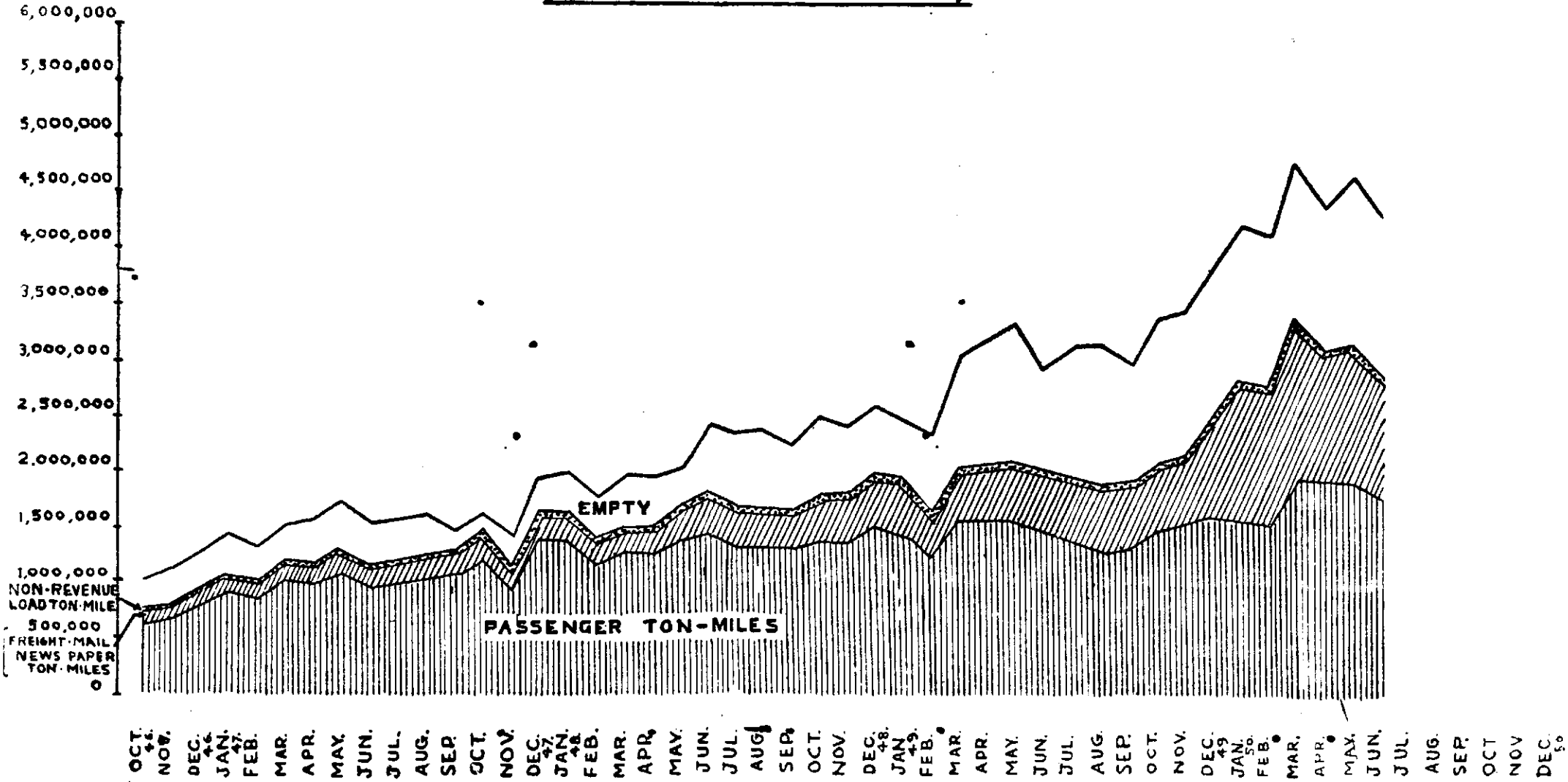


# REVENUE PASSENGER-MILES ON SCHEDULED SERVICES

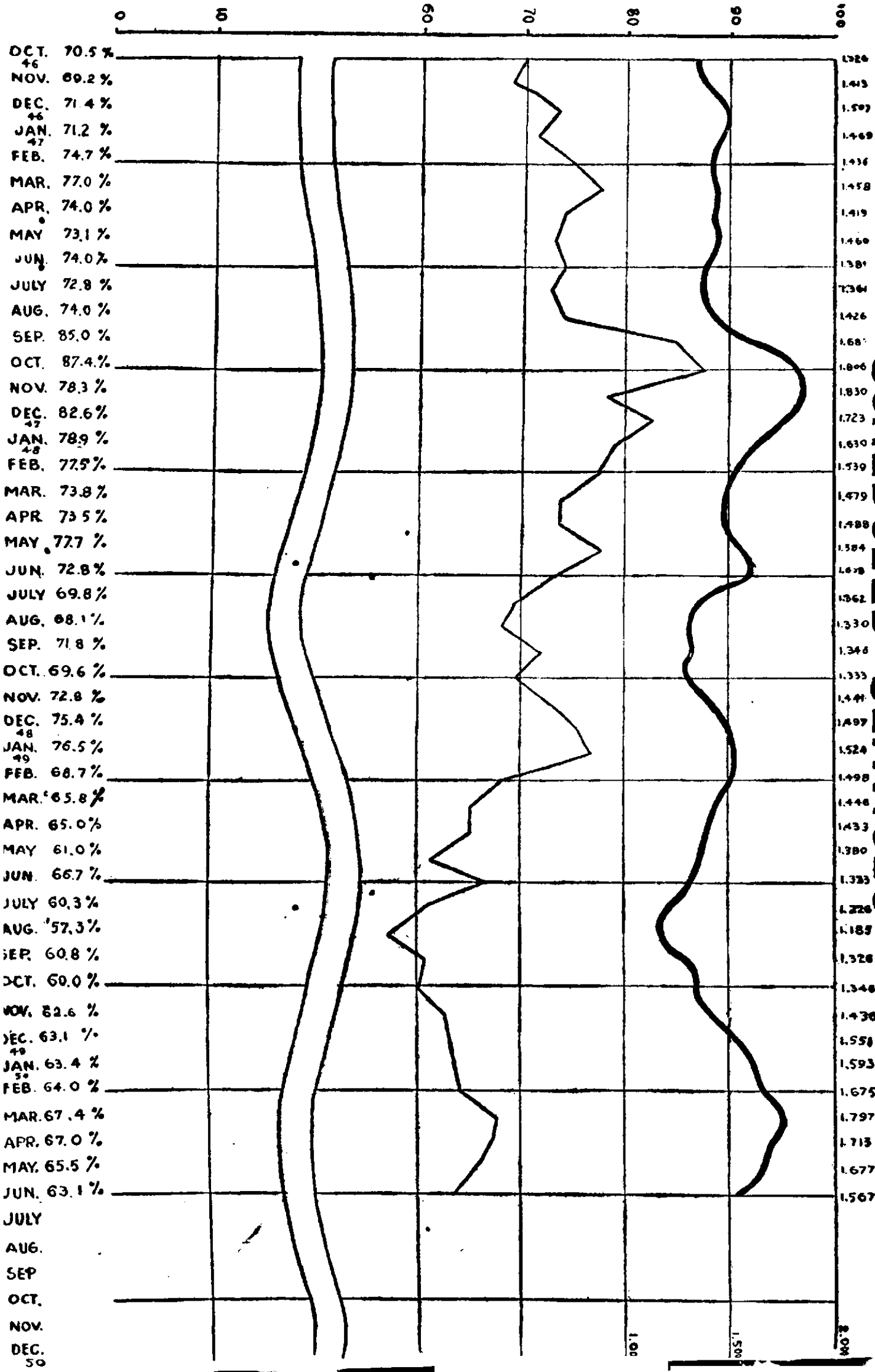


PASSENGER TON-MILES (REVENUE)	TOTAL LOAD TON-MILES (NON-REVENUE)	CAPACITY TON-MILES
622,075	750,974	1,020,635
668,762	791,995	1,114,745
775,026	911,093	1,245,632
907,239	1,054,327	1,435,850
858,733	1,005,629	1,302,467
1,030,032	1,195,439	1,512,950
990,558	1,165,207	1,539,196
1,090,107	1,282,476	1,705,183
963,579	1,156,534	1,512,227
970,256	1,185,194	1,571,755
1,013,071	1,230,234	1,602,730
1,045,461	1,270,174	1,453,069
1,199,692	1,464,577	1,632,993
916,210	1,121,406	1,391,767
1,365,804	1,630,197	1,931,590
1,332,452	1,604,086	1,986,238
1,134,616	1,395,117	1,741,486
1,256,491	1,483,789	1,958,979
1,232,947	1,466,766	1,938,321
1,379,272	1,662,853	2,085,920
1,414,586	1,790,970	2,385,013
1,289,952	1,653,938	2,298,030
1,284,099	1,621,123	2,314,009
1,283,652	1,627,362	2,208,784
1,362,830	1,762,302	2,459,636
1,340,372	1,764,730	2,365,234
1,500,638	1,990,448	2,573,824
1,465,374	1,905,860	2,433,135
1,229,986	1,617,570	2,303,714
1,528,537	2,017,268	3,009,399
1,519,593	2,009,505	3,102,867
1,532,593	2,050,508	3,292,538
1,407,523	1,980,201	2,871,624
1,327,212	1,889,580	3,048,052
1,238,848	1,807,476	3,065,179
1,290,686	1,856,988	2,968,764
1,409,273	2,027,155	3,289,030
1,480,633	2,162,910	3,349,870
1,538,568	2,474,521	3,804,766
1,519,453	2,715,606	4,173,061
1,474,914	2,553,104	4,050,215
1,879,185	3,243,220	4,718,617
1,804,936	2,950,846	4,316,165
1,803,696	3,068,002	4,583,533
1,726,432	2,745,886	4,234,878

## VOLUME OF TRAFFIC & CAPACITY TON-MILES OPERATED (SCHEDULED SERVICES)

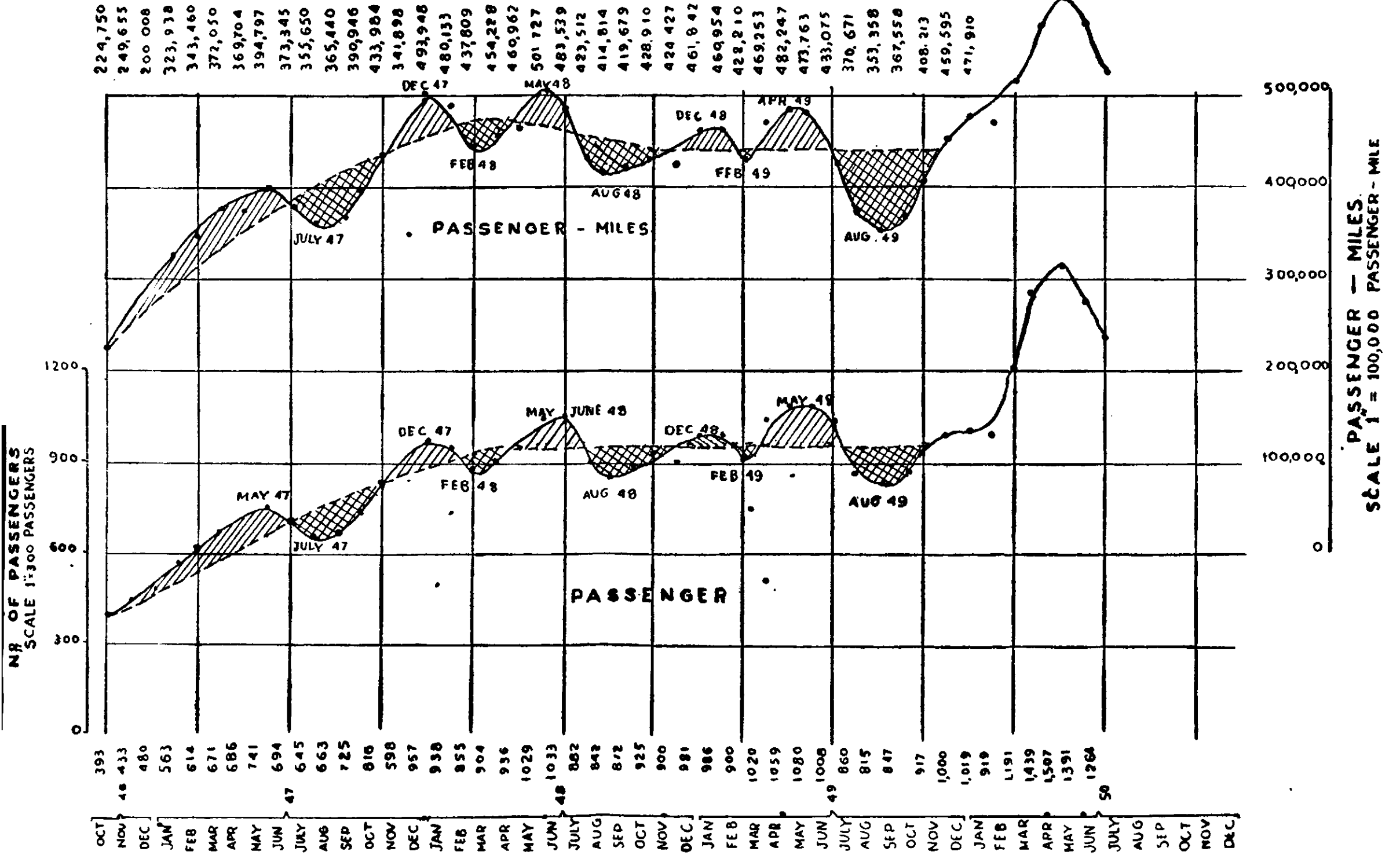


REVENUE LOAD FACTOR  
SCALE 1" = 10%



REVENUE LOAD FACTOR  
ON  
SCHEDULED SERVICES

### NO OF PASSENGERS & PASSENGER - MILES (DAILY AVERAGES) ON ALL SCHEDULED SERVICES EXCEPT BOMBAY-LONDON AND THE FAR - EAST SERVICES





## APPENDIX XIII

Statement showing the cost of transportation performed by the operating companies and the revenue earned by them in different years in terms of annas per mile.

Operator	Cost Revenue Element	1946-47	1947	1947-48	1948	1948-49	1949	1949-50.	1950 1st quarter
		Cost Rev.	Cost Rev.	Cost Rev.	Cost Rev.	Cost Rev.	Cost Rev.	Cost Rev.	Cost Rev.
Air-India *	Direct Transport	..	45.6	70.3	..	55.6	73.7	..	60.3
	Other	..	24.6	3.4	..	23.9	6.3	..	24.9
	Total	..	70.2	73.7	..	79.4	80.0	..	85.2
Nett result			+3.5		+0.6		-10.0		
Indian National Airways *	Direct Transport	46.7	48.0	..	..	70.2	77.4	..	67.8
	Other	13.25	6.6	..	..	20.5	6.8	..	21.0
	Total	59.95	54.6	..	..	90.7	84.2	..	88.8
Nett result		-5.25			-6.5		-10.7		-3.6
Air Services of India	Direct Transport	56.0	43.2	..	..	55.2	73.9	..	52.7
	Other	19.7	3.1	..	..	16.1	0.9	..	18.2
	Total	75.7	46.3	..	..	71.3	74.8	..	70.9
Nett result		-29.4			+3.5		-3.3		-22.6

\*For these operators the costs and revenue are in some instances for composite fleets.

<b>Deccan Airways</b>	Direct	Transport	..	39.5	50.5	..	52.0	60.6	..	53.4	47.4	..	48.4	42.2
	Other		..	13.1	0.7	..	15.8	7.9	..	15.4	4.6	..	10.5	5.3
	Total		..	51.6	51.2	..	67.8	68.5	..	68.8	52.0	..	58.9	47.5

Nett result . . . . . -0.4 . . . . . +0.7 . . . . . -16.8 . . . . . -11.4

<b>Airways (India)</b>	Direct	Transport	..	40.6	57.6	..	42.1	58.0	..	45.5	53.5	..	39.9	56.3
	Other		..	16.7	0.5	..	13.5	2.2	..	12.7	7.2	..	11.5	3.9
	Total		..	57.3	58.1	..	55.6	60.2	..	58.2	60.7	..	51.4	60.2

Nett result . . . . . +0.8 . . . . . 4. + 6 . . . . . + 2.5 . . . . . + 8.8

<b>Bharat Airways</b>	Direct	Transport	124.6	90.9	..	48.4	62.7	..	42.1	45.8	..	..	55.5	..
	Other		79.1	0.0	..	19.0	0.1	..	15.2	2.3	..	..	5.5	..
	Total		203.7	90.9	..	67.4	62.8	..	57.3	48.1	..	..	64.5	61.0

Nett Result . . . . . -112.8 . . . . . -4.6 . . . . . -9.2 . . . . . -3.5

<b>Himalayan Aviation.</b>	Direct	Transport	..	..	..	..	..	..	43.8	51.1	..	..	39.2	51.2
	Other		..	..	..	..	..	..	13.6	1.7	..	..	11.3	2.4
	Total		..	..	..	..	..	..	57.4	52.8	..	..	50.6	53.6

Nett result . . . . . -4.6 . . . . . -4.6 . . . . . +3.0

<b>Indian Overseas Air-lines.</b>	Direct	Transport	29.22	33.2	..	41.2	47.6	..	49.5	34.8	..	..	..	..
	Other		13.98	1.2	..	15.55	1.2	..	24.16	1.42	..	..	..	..
	Total		43.25	34.4	..	56.75	48.8	..	73.66	36.22	..	..	..	..

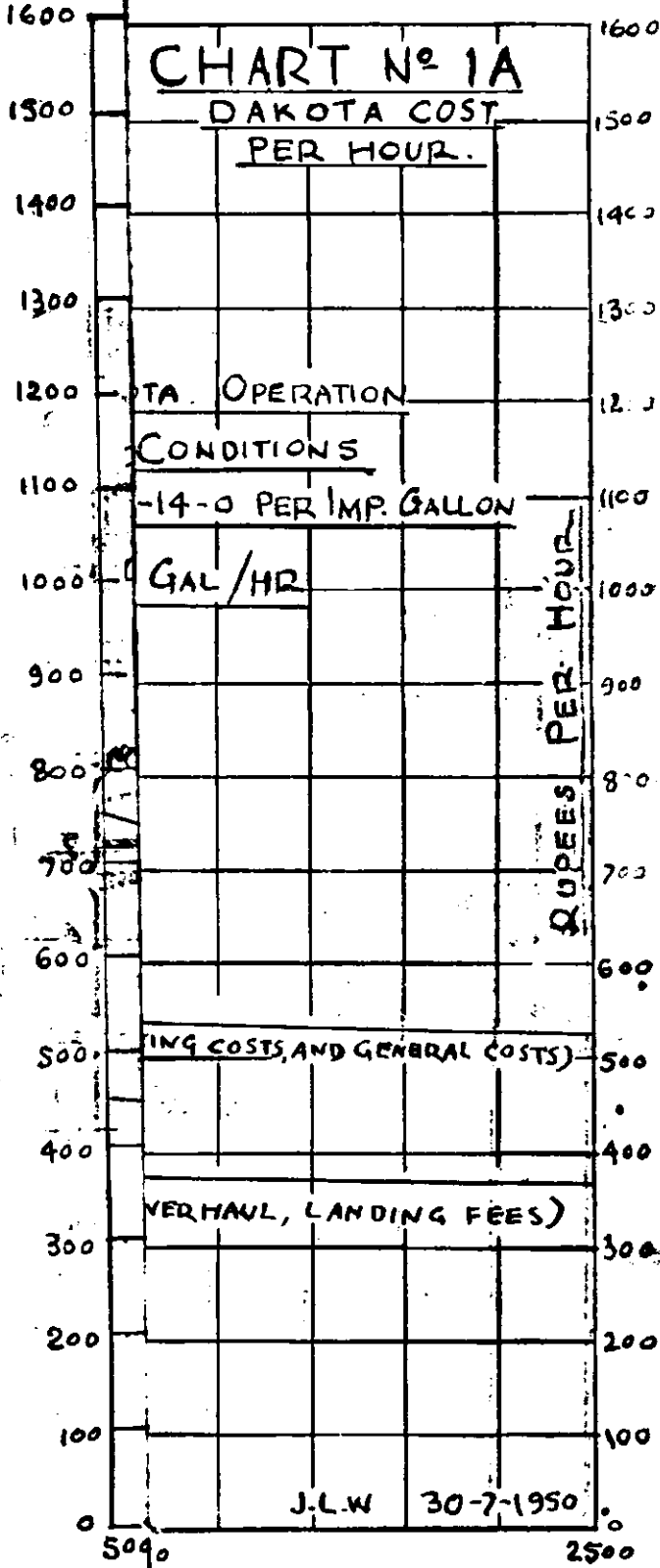
Nett result . . . . . -8.85 . . . . . -7.95 . . . . . -37.44

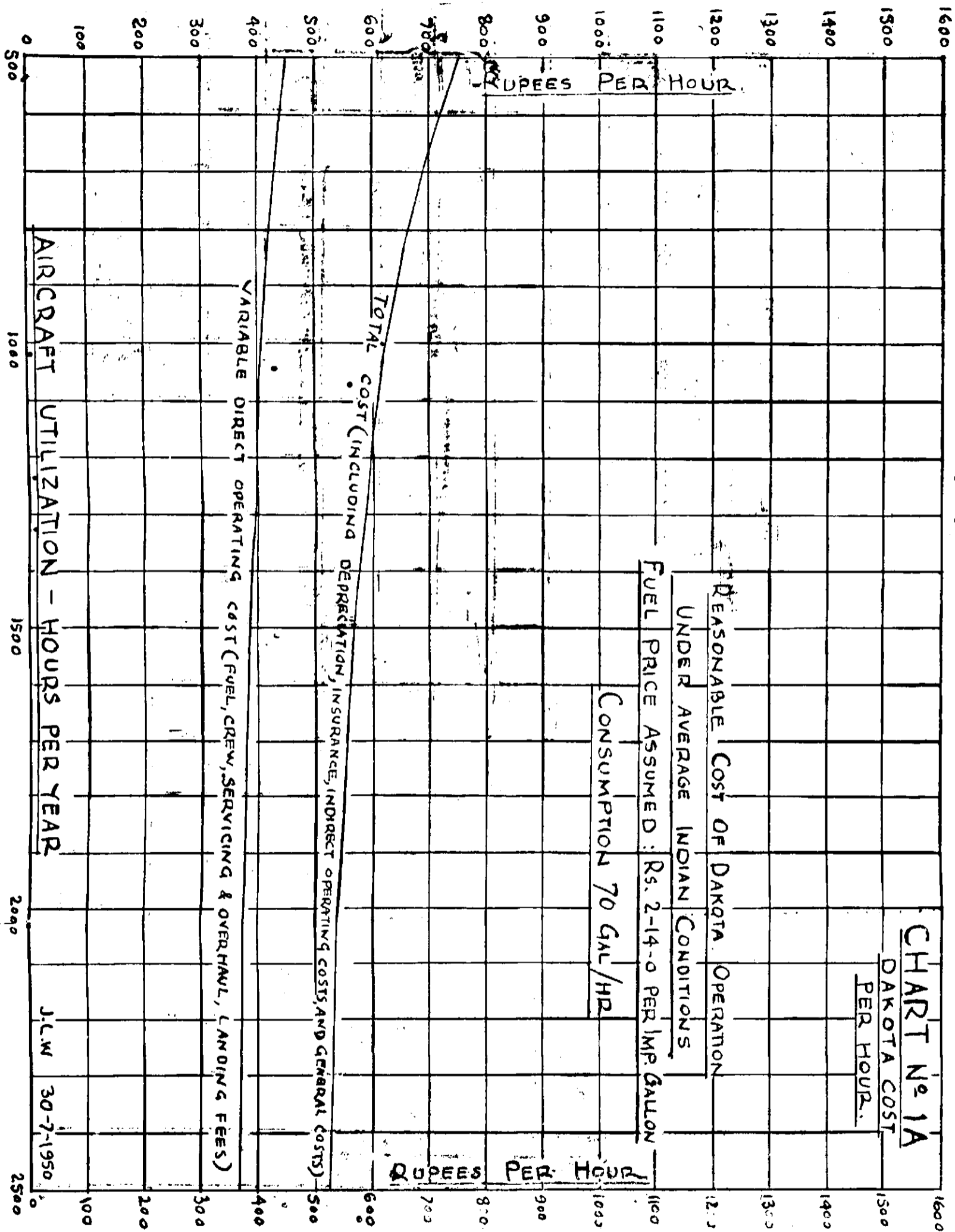
APPENDIX XIV

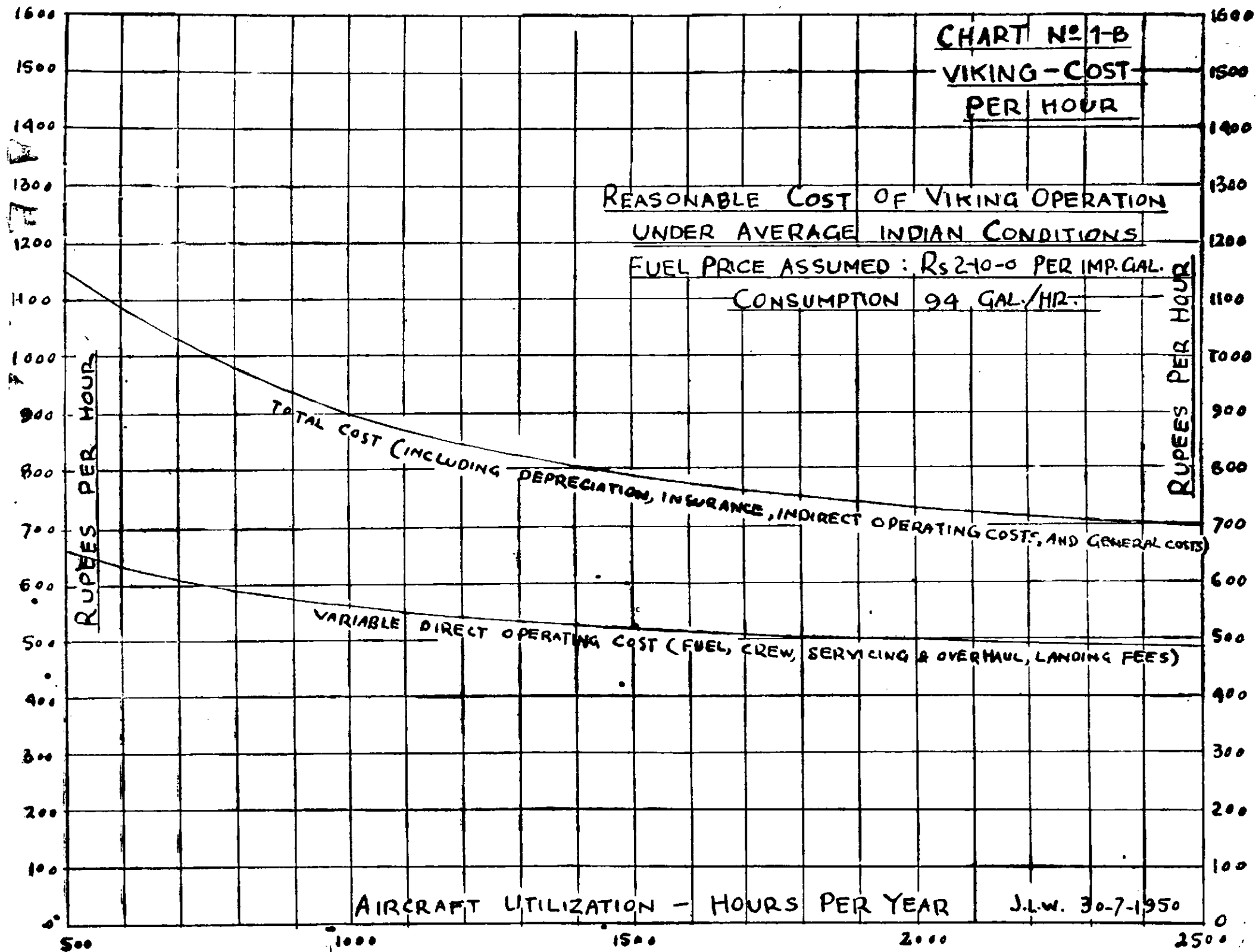
Statement showing the financial results of the operations of the scheduled operating companies for the latest financial year for which they have furnished figures.

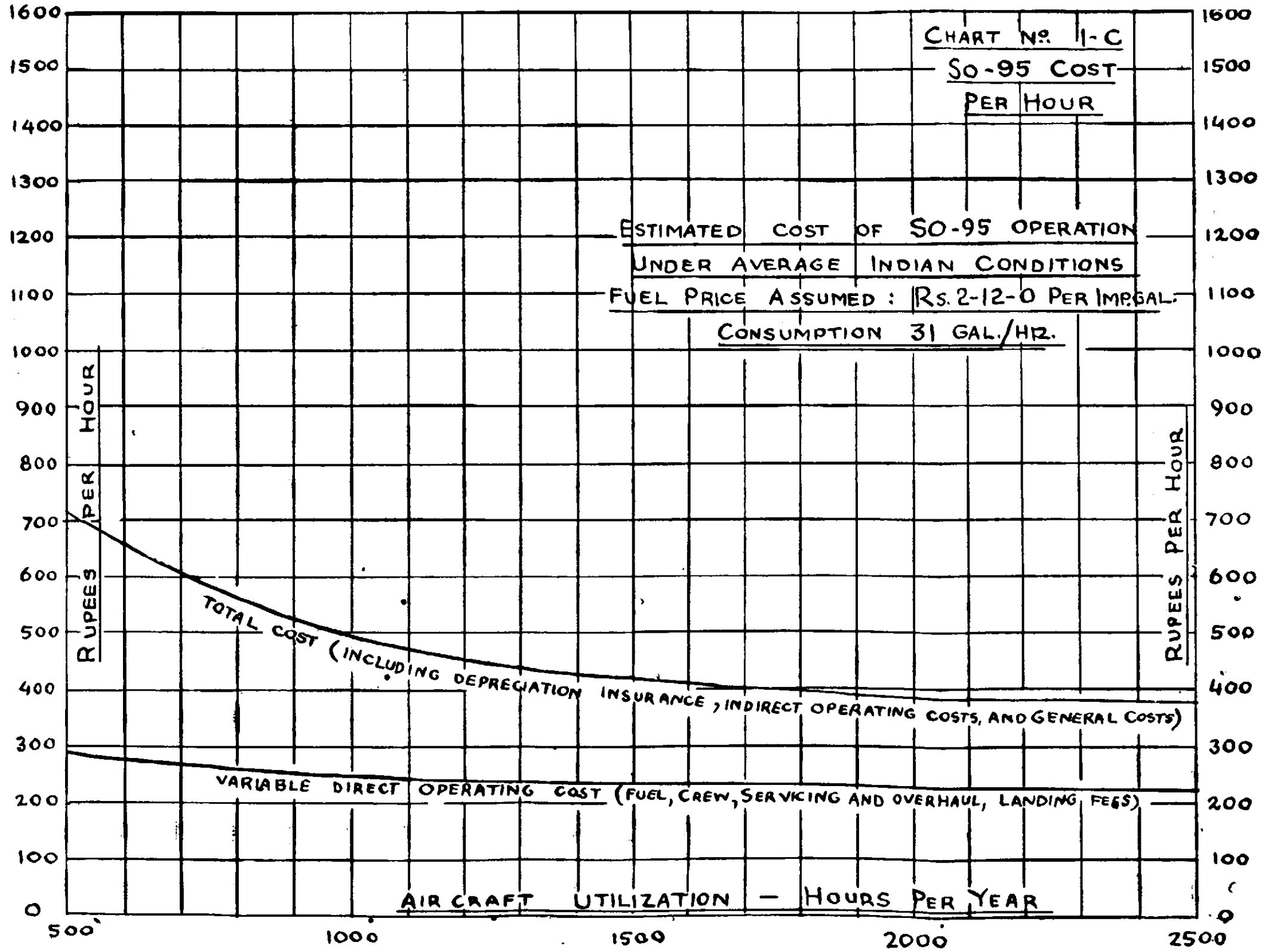
Name of Company	Period Reviewed	Actual Revenue		Total	Actual Result from Balance sheet Profit + Loss		Revenue from Petrol Rebate		Actual result eliminating Petrol Rebate
		Rs.	Rs.		Rs.	Rs.	Rs.	Rs.	
Air-India	1949 (12 months)	1,91,79,049	28,40,994	2,20,20,043	-29,33,880	9,47,248	-38,81,128		
Indian National Airways	1949-50 (9 months)	66,68,602	6,34,623	73,03,225	-3,37,234 (or roughly -4,50,000 for a full year).	4,24,879 (or roughly 5,60,000 for a full year).	-7,62,113 (or roughly -10,00,000 for a full year).		
Air Services of India	1948-49 (12 months)	62,96,889	2,49,125	65,46,014	-4,05,241	56,000 (roughly)	-4,61,241		
Deccan Airways	1949 (12 months)	48,70,236	4,72,752	53,42,988	-17,13,528	4,33,892 -21,47,420			
Airways (India)	1949 (12 months)	60,11,060	8,06,486	68,17,536	+2,78,969	4,23,590	-1,44,621		
Bharat Airways	1949-50 (12 months)	89,20,993	8,243	89,29,236	3,16,570	8,08,000 (Approximately)	-11,26,570		
Indian Overseas Airlines	1949-50 (12 months)	24,34,404	1,701	24,36,105	-16,61,980	2,00,900	-18,81,980		
Himalayan Aviation	1949-50 (12 months)	46,14,602	4,26,340	50,40,942	-15,446	3,47,467	-3,02,913		
Kalinga Airlines	No figures furnished by the company.								
TOTAL		5,89,95,825	54,40,264	6,44,36,089	-72,39,676	37,76,197	-1,10,15,873		

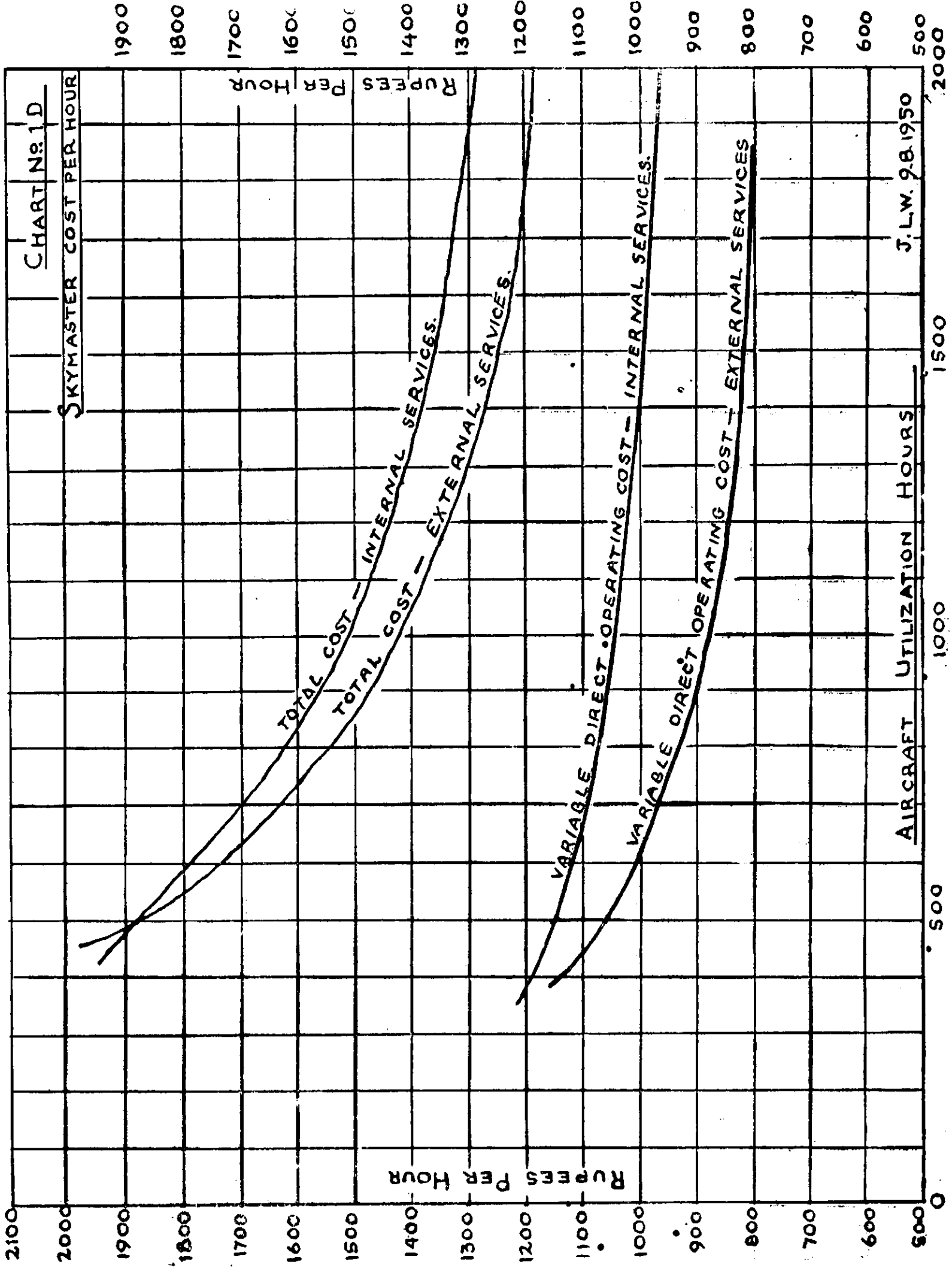
APPENDIX .



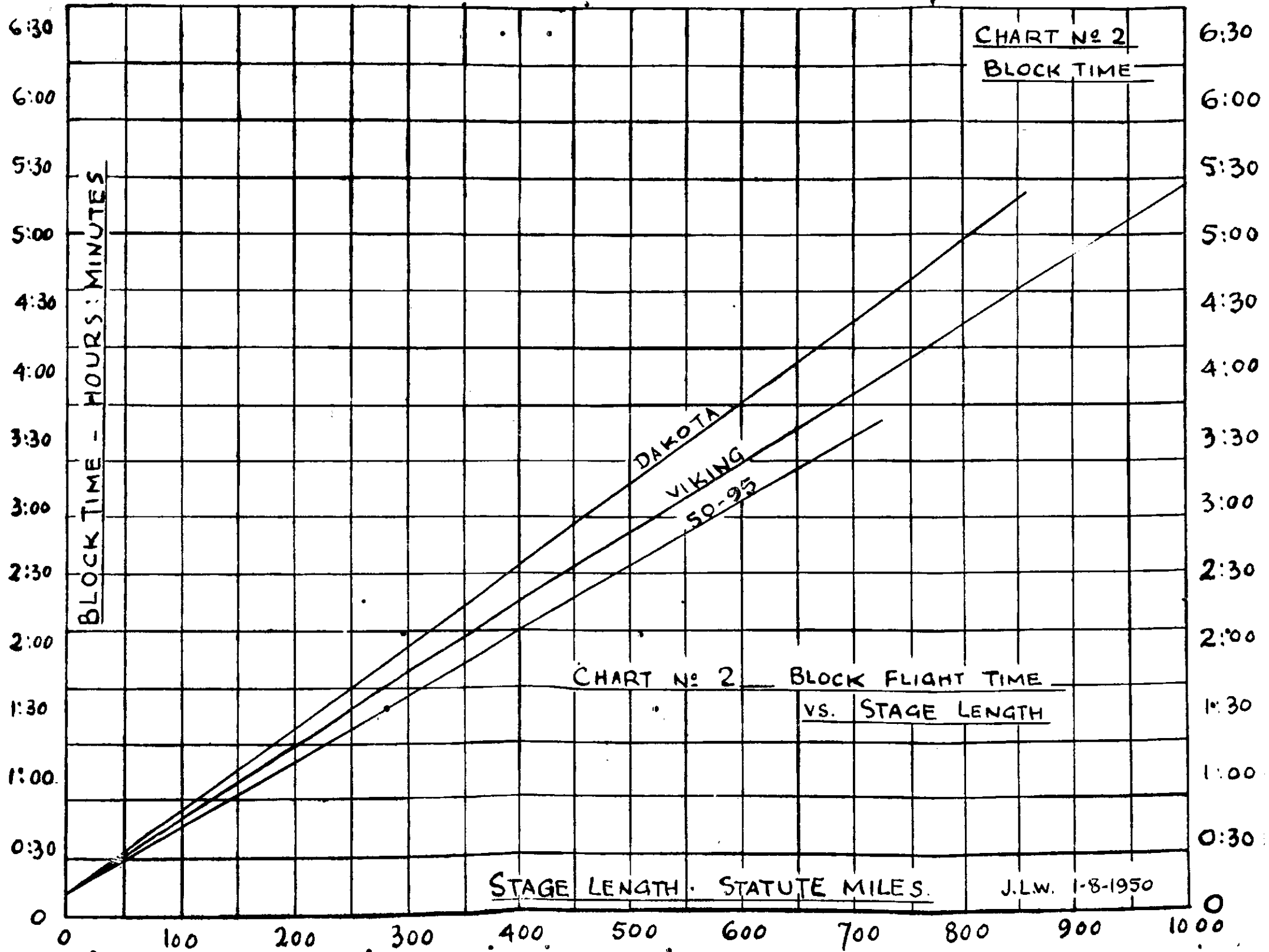


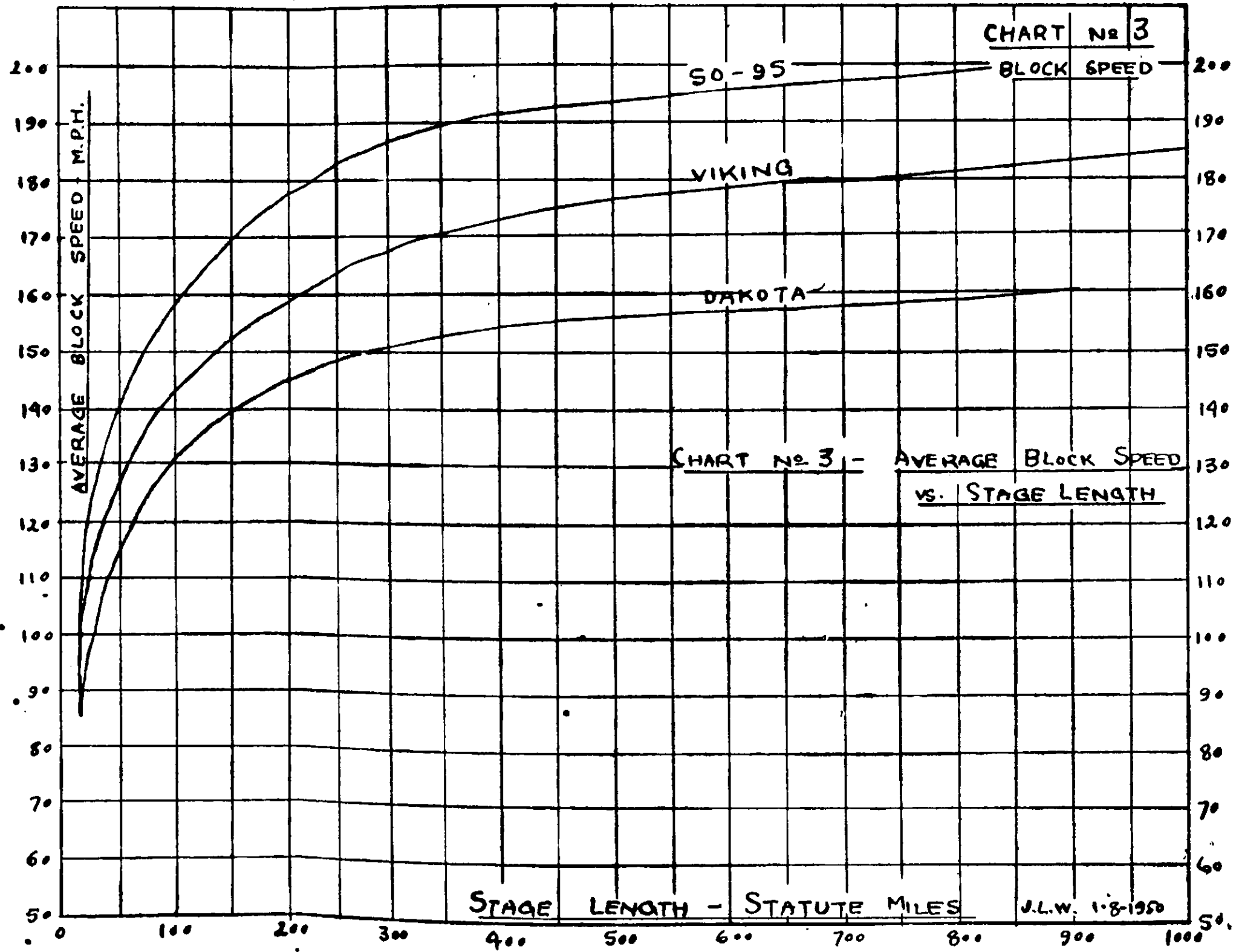


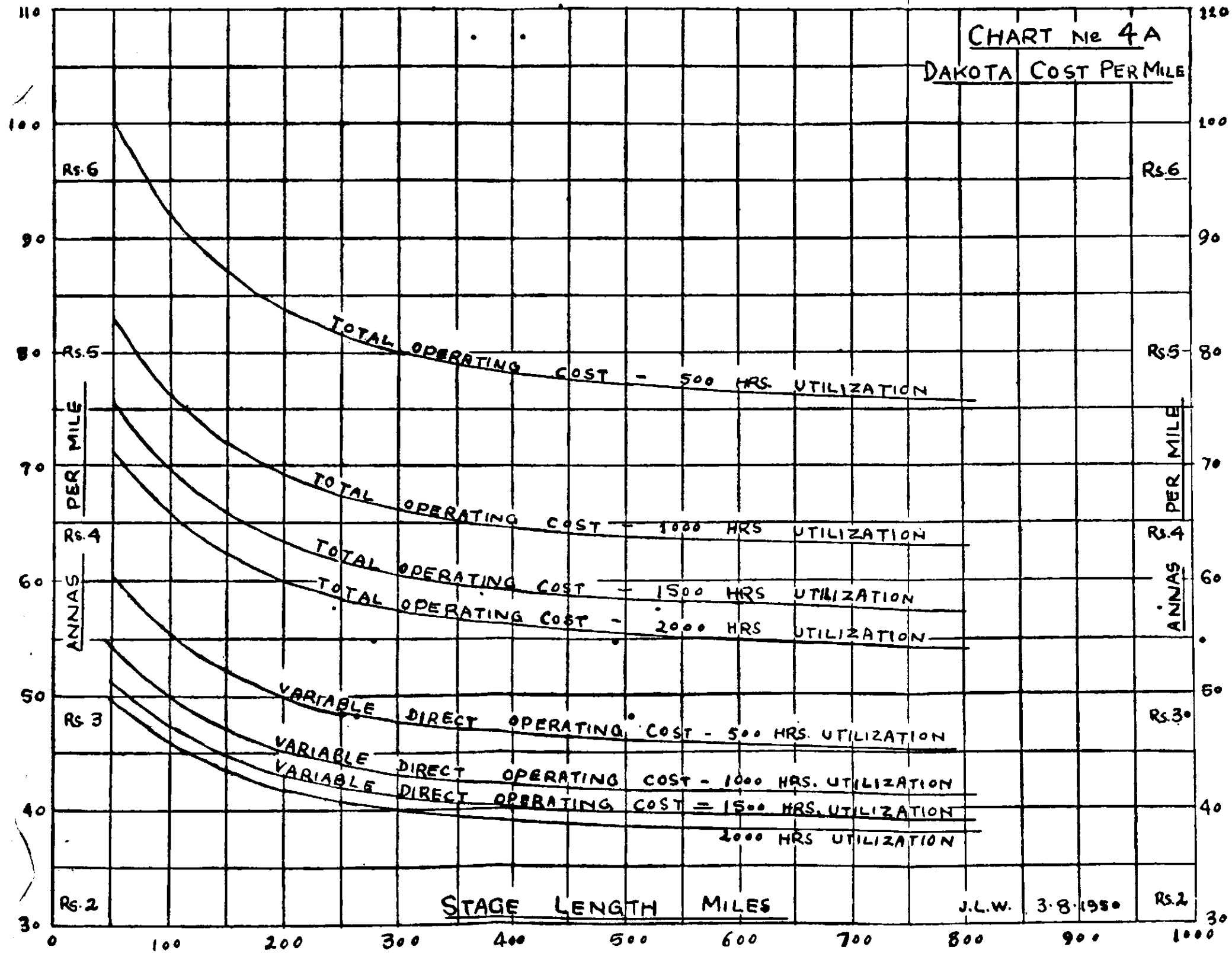


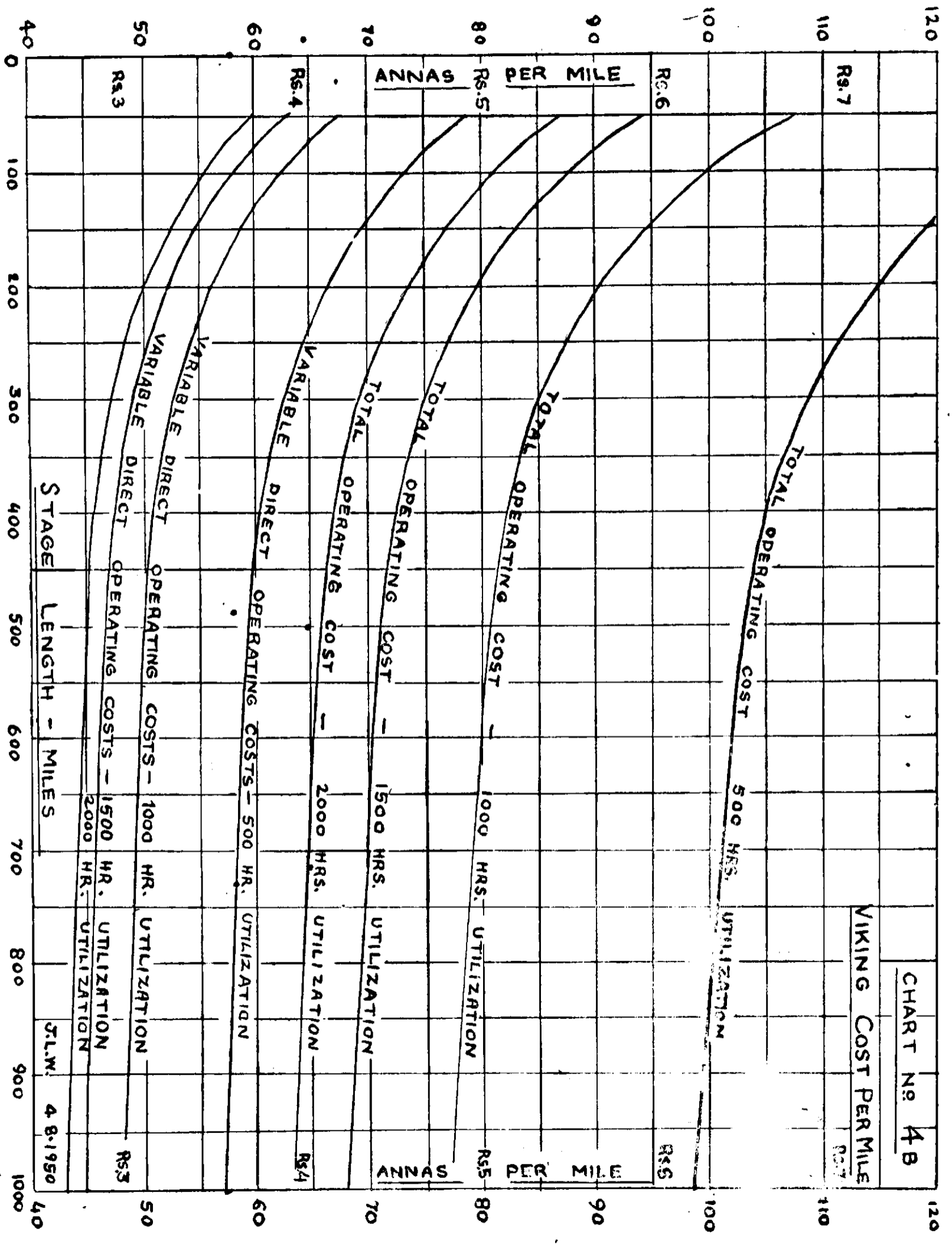


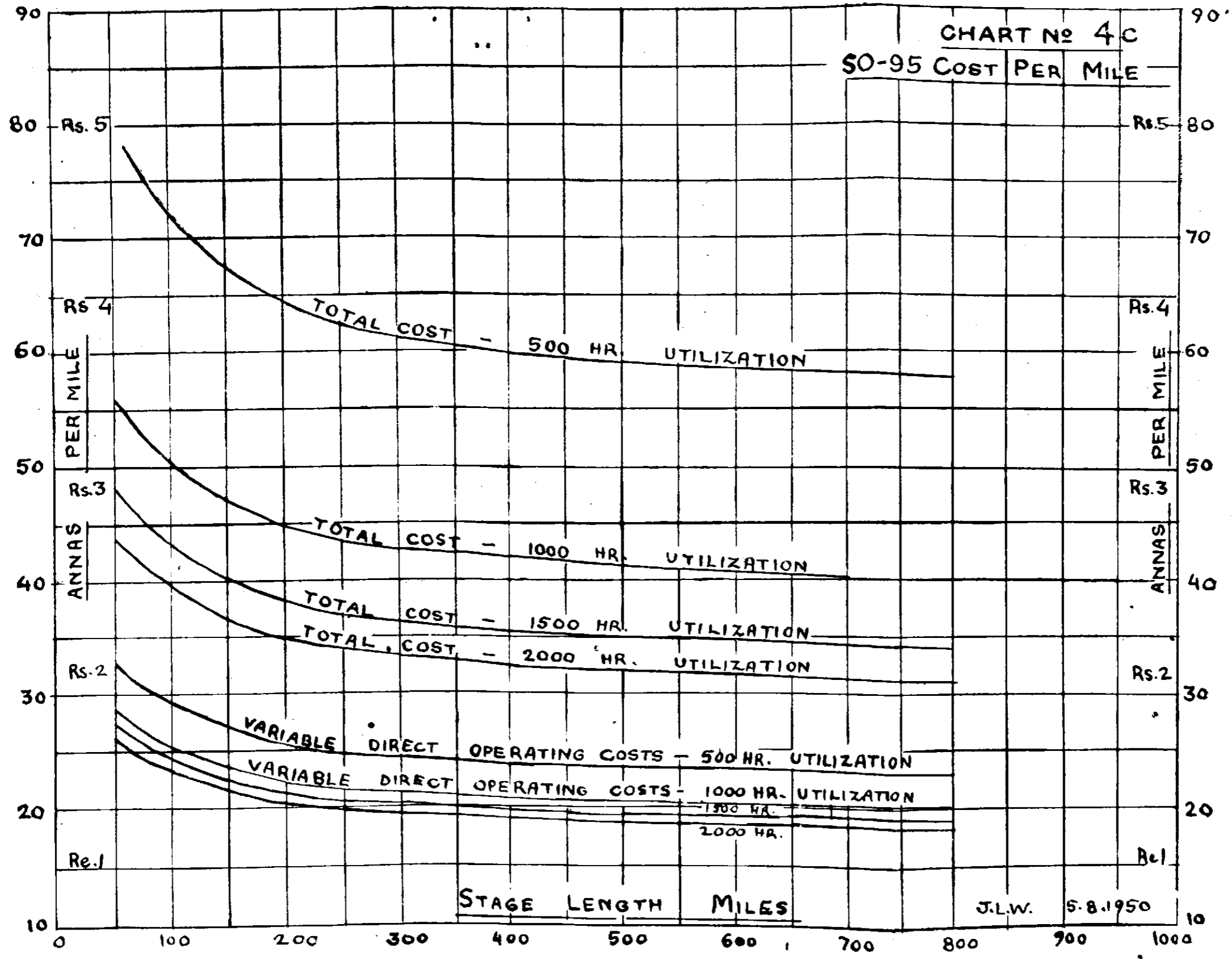




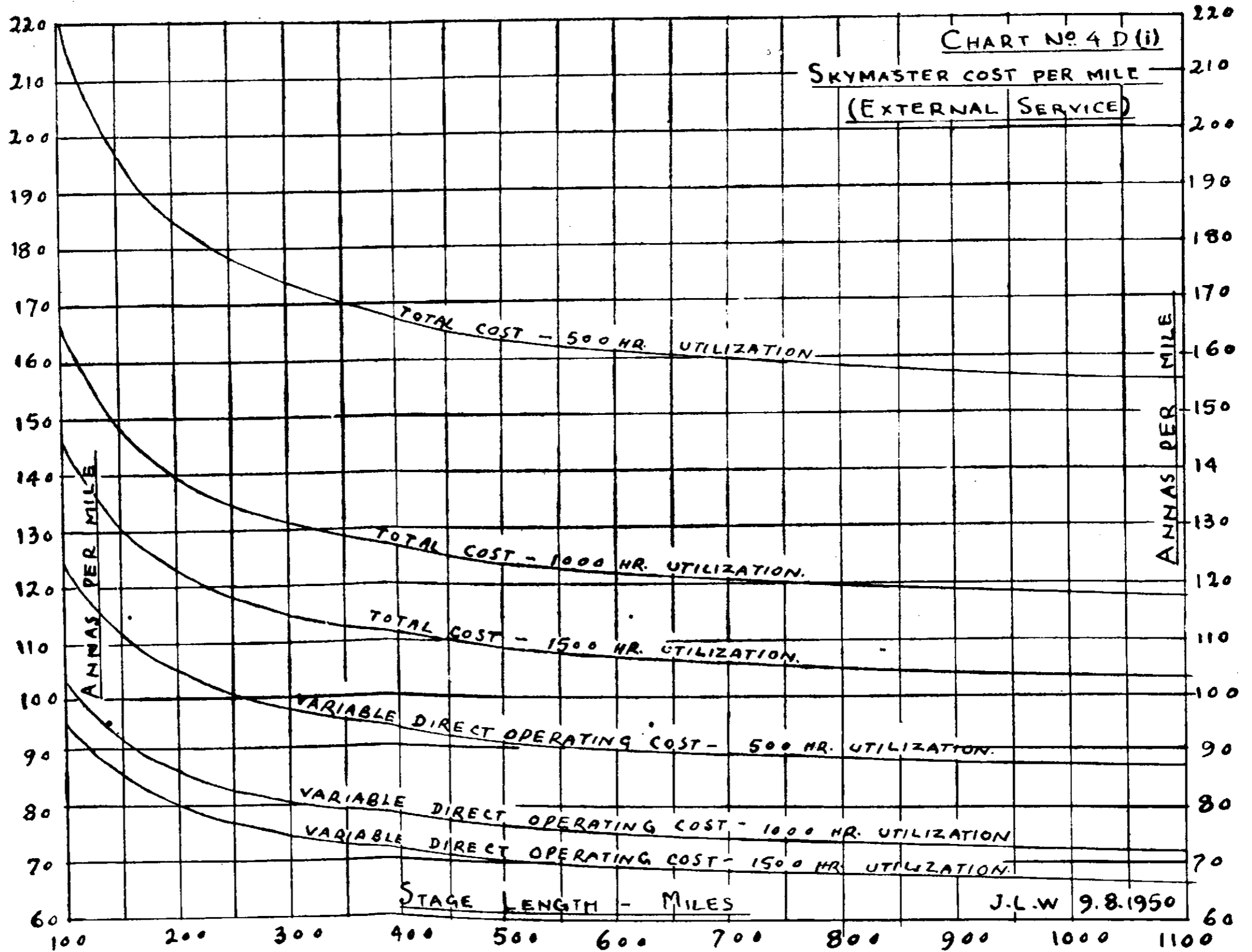


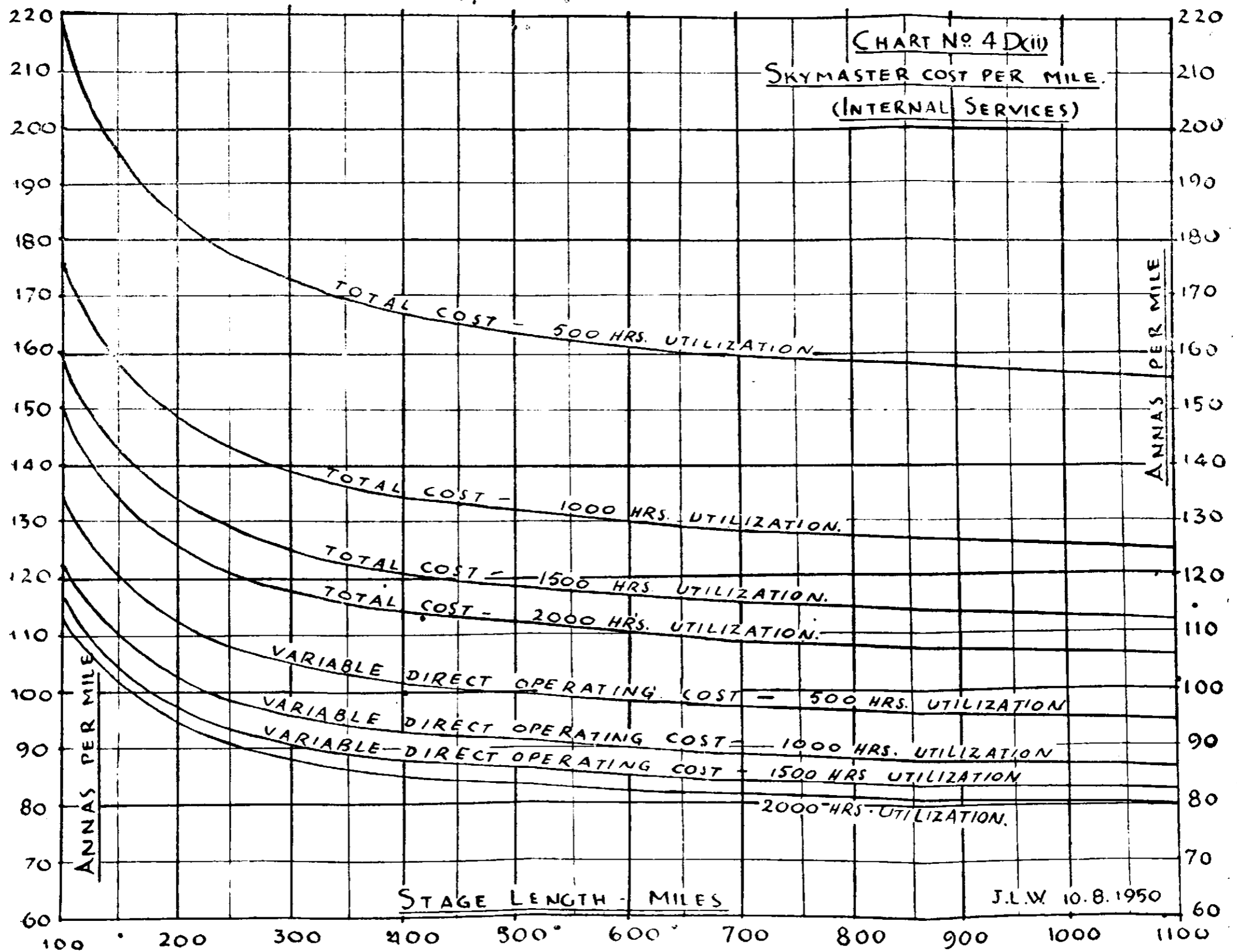


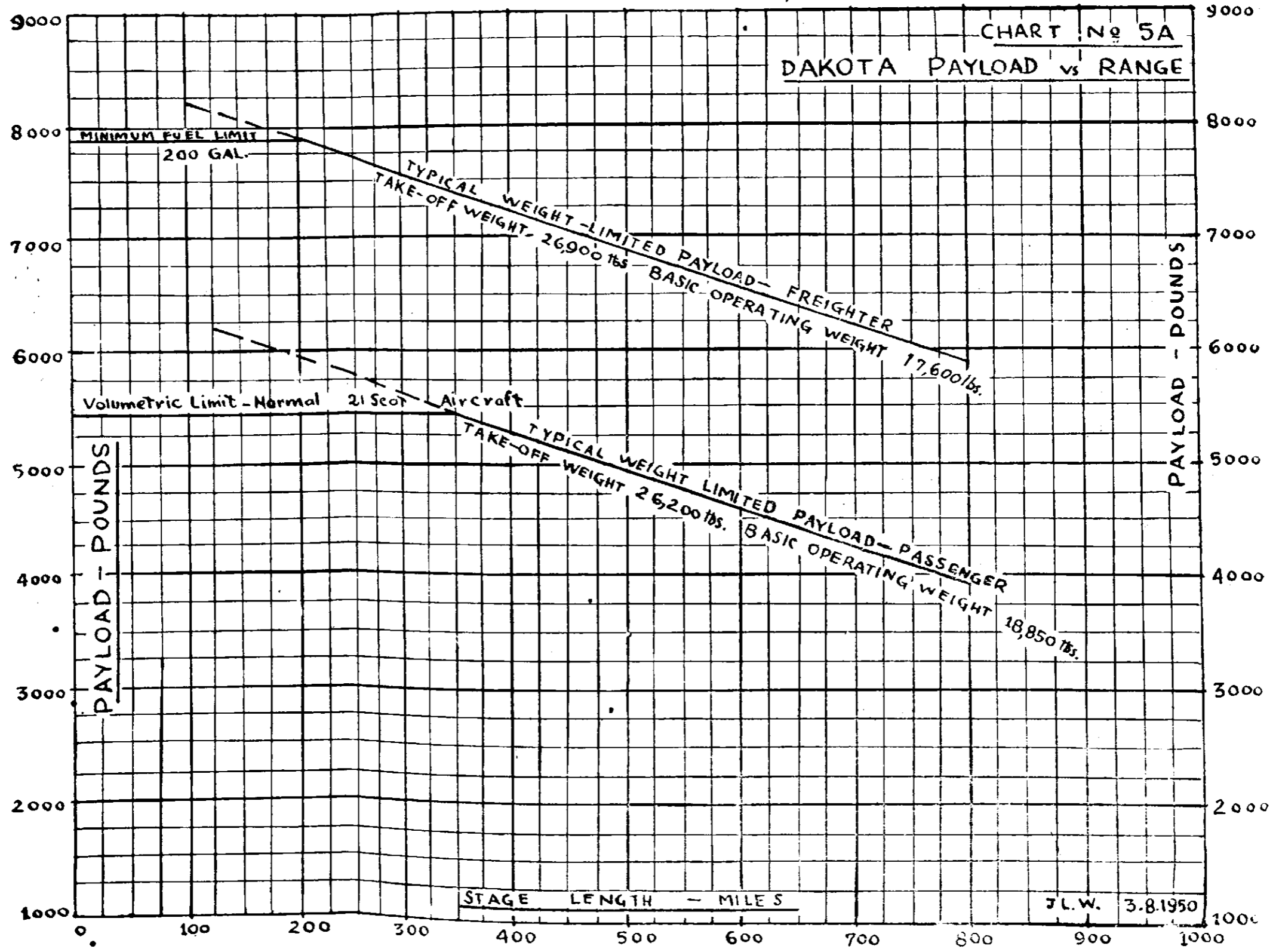




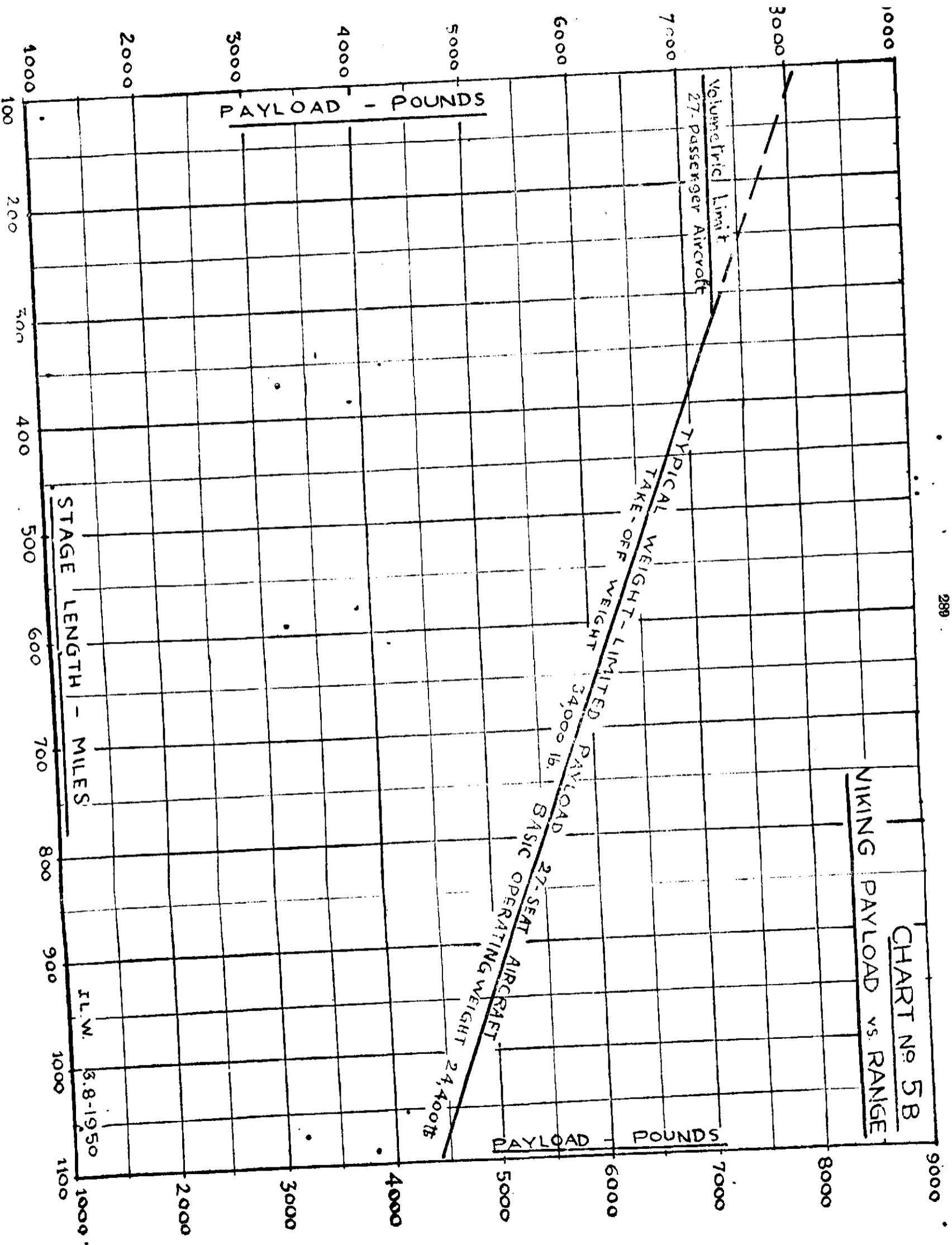
J.L.W. 5.8.1950





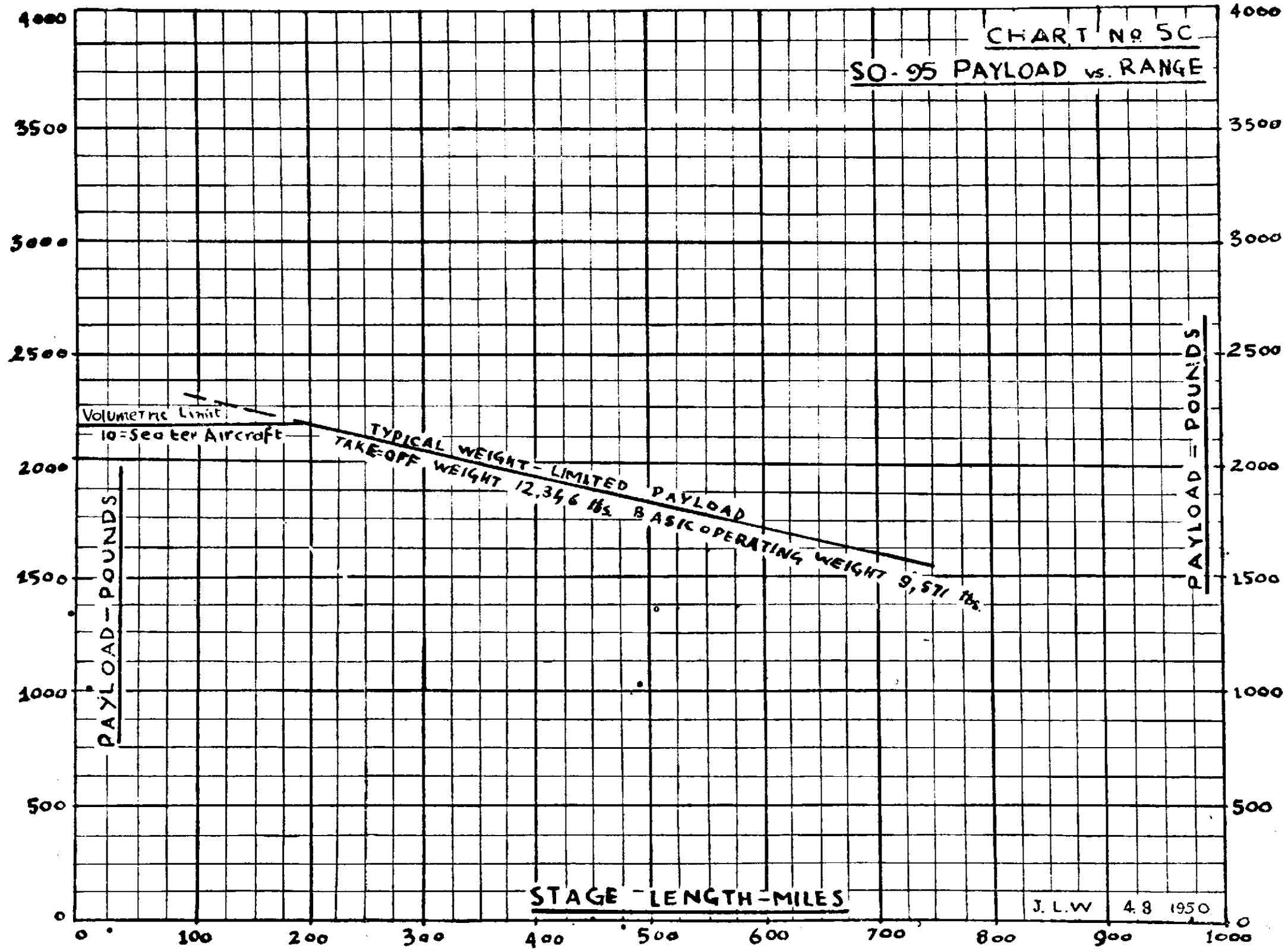




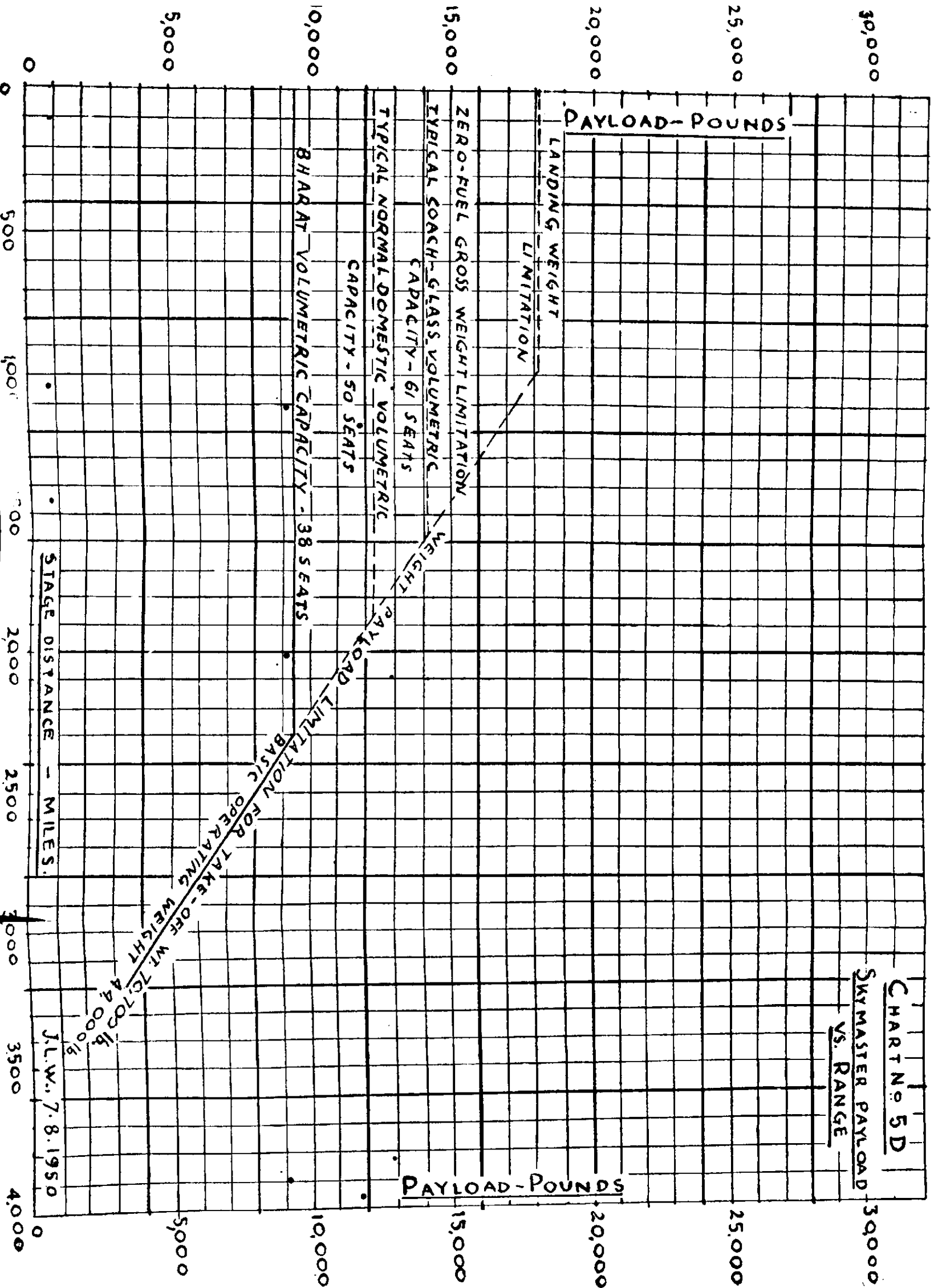


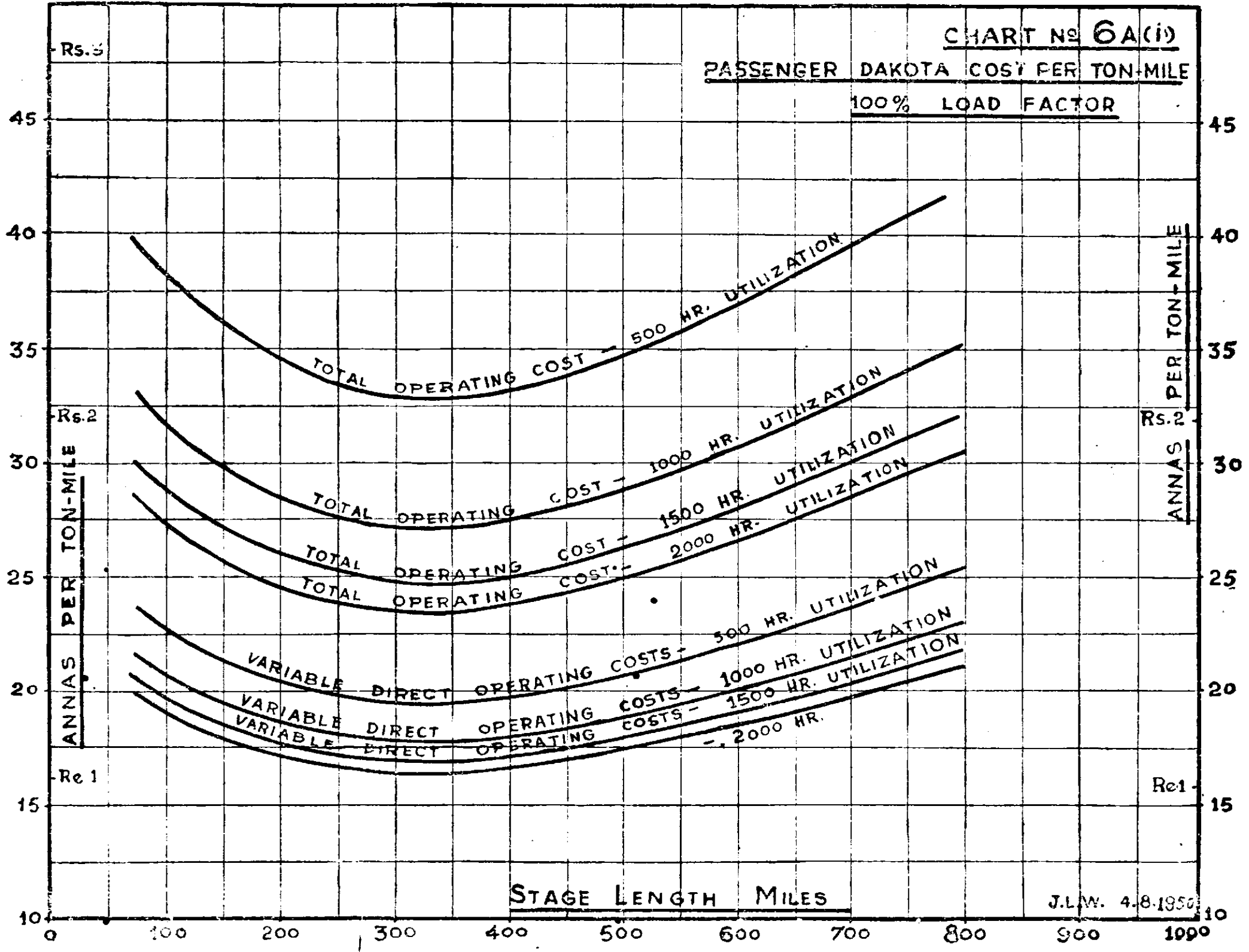
IL.W. 5.8-1950

CHART NO 5C  
SO-95 PAYLOAD vs. RANGE



J. L. W 4.8 1950

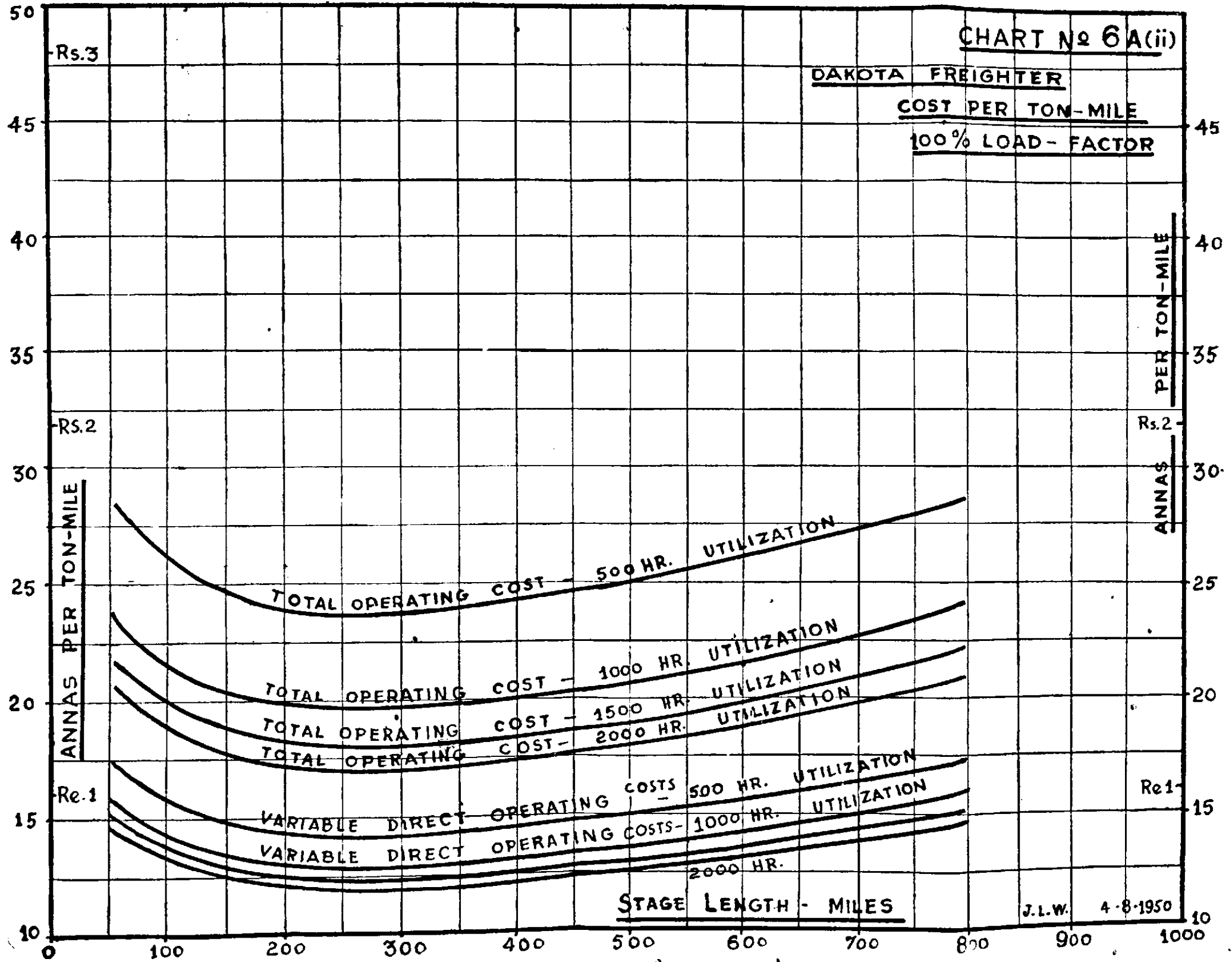




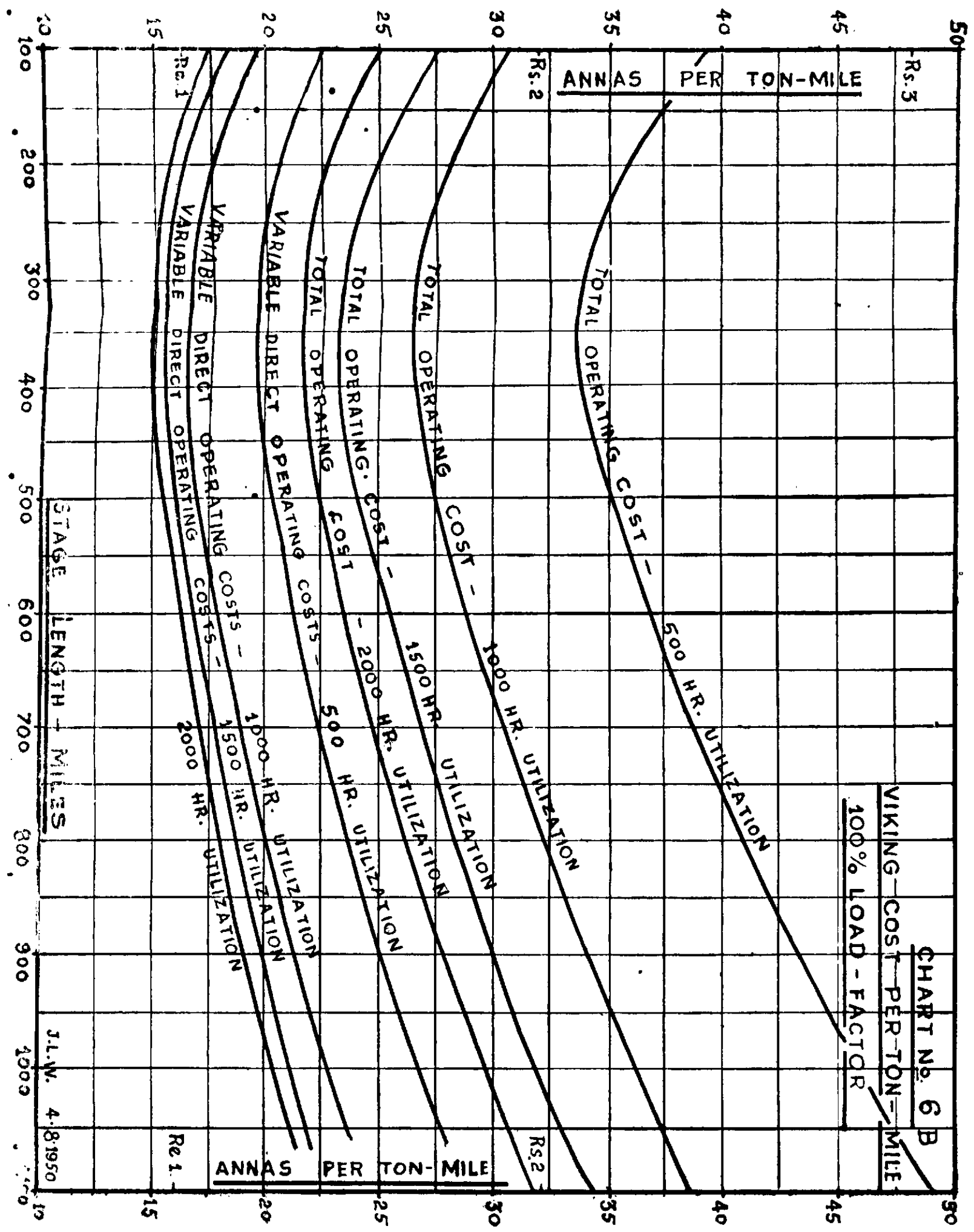
J.L.W. 4.8.1950

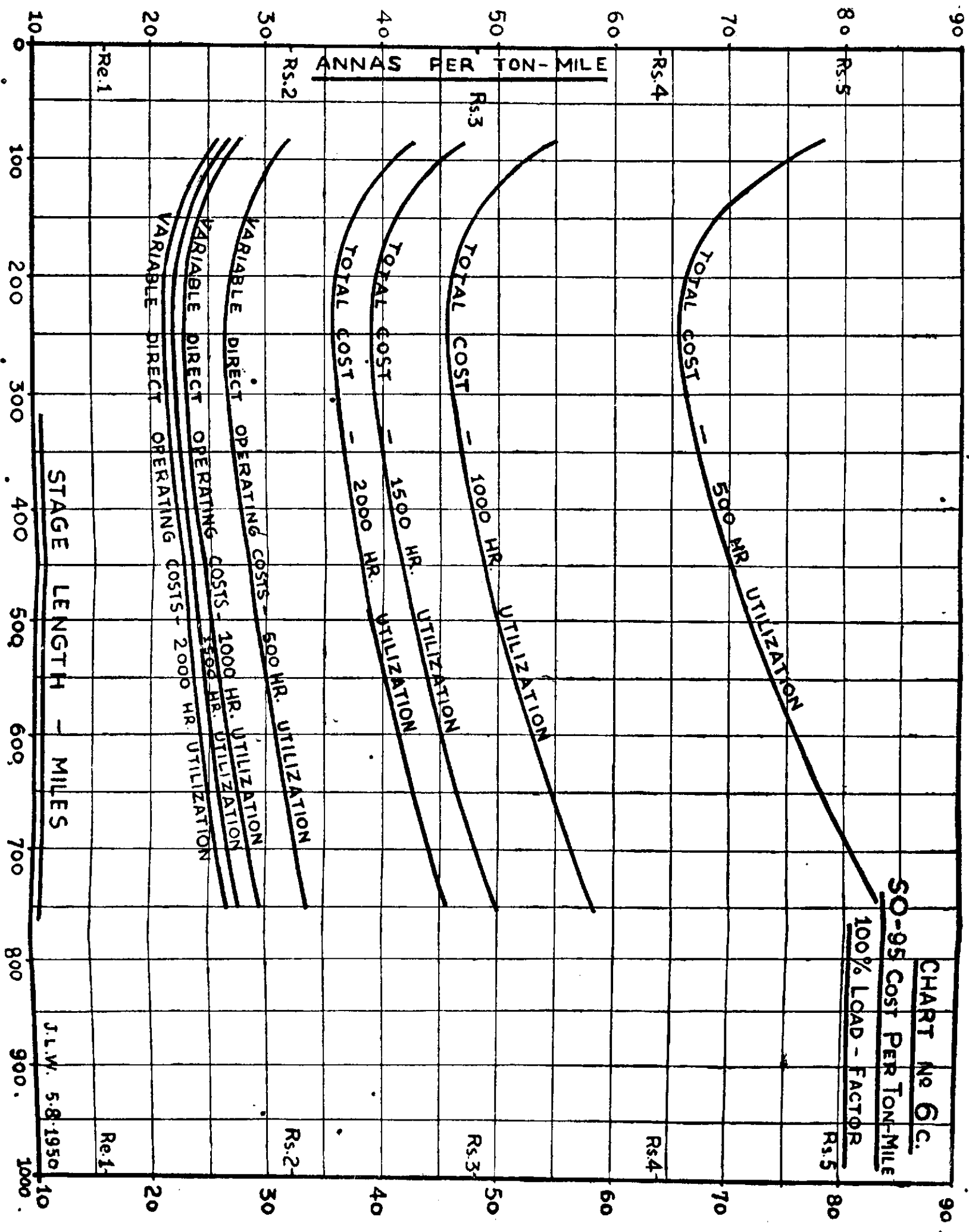
CHART No 6A(ii)

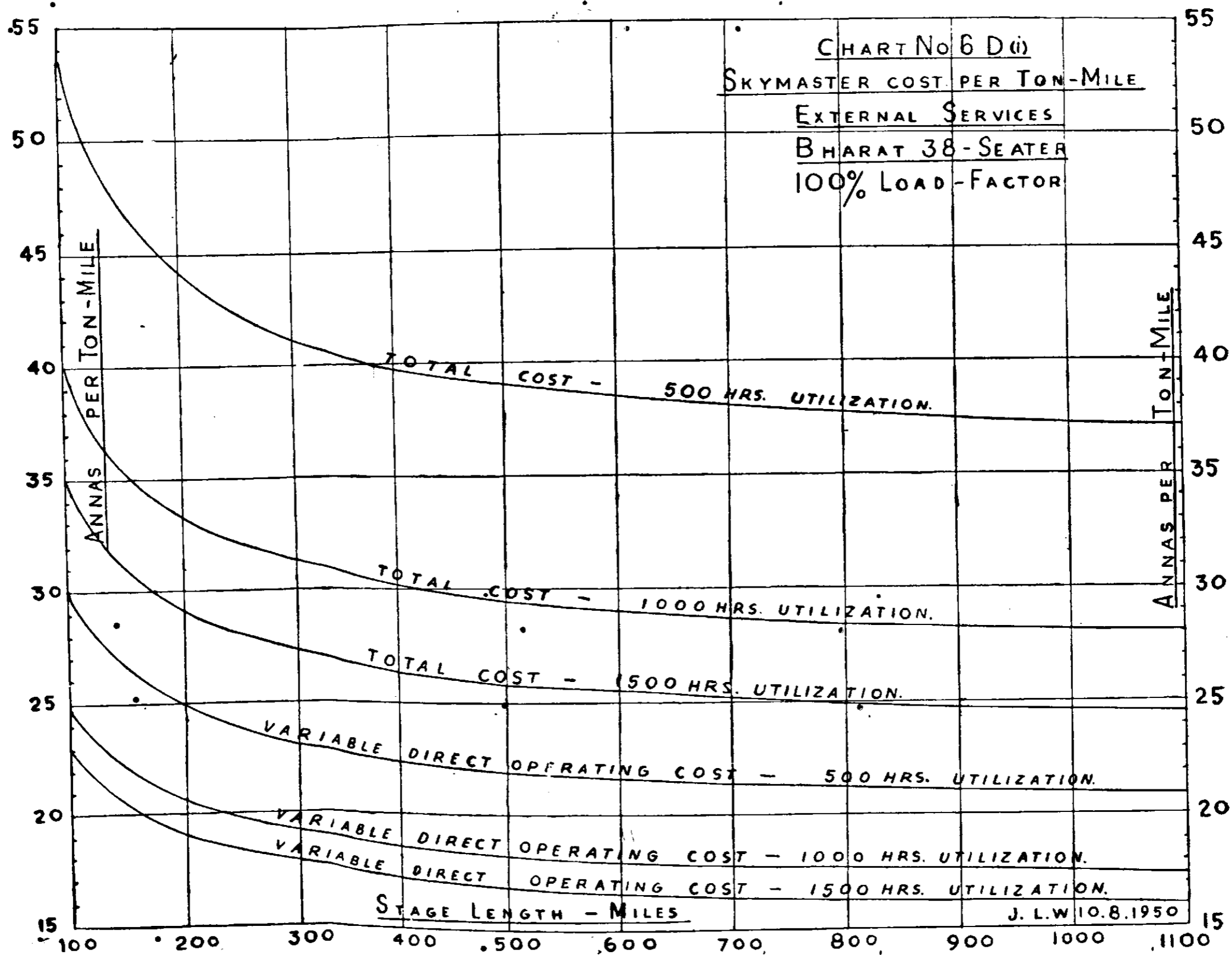
DAKOTA FREIGHTER  
COST PER TON-MILE  
100% LOAD-FACTOR



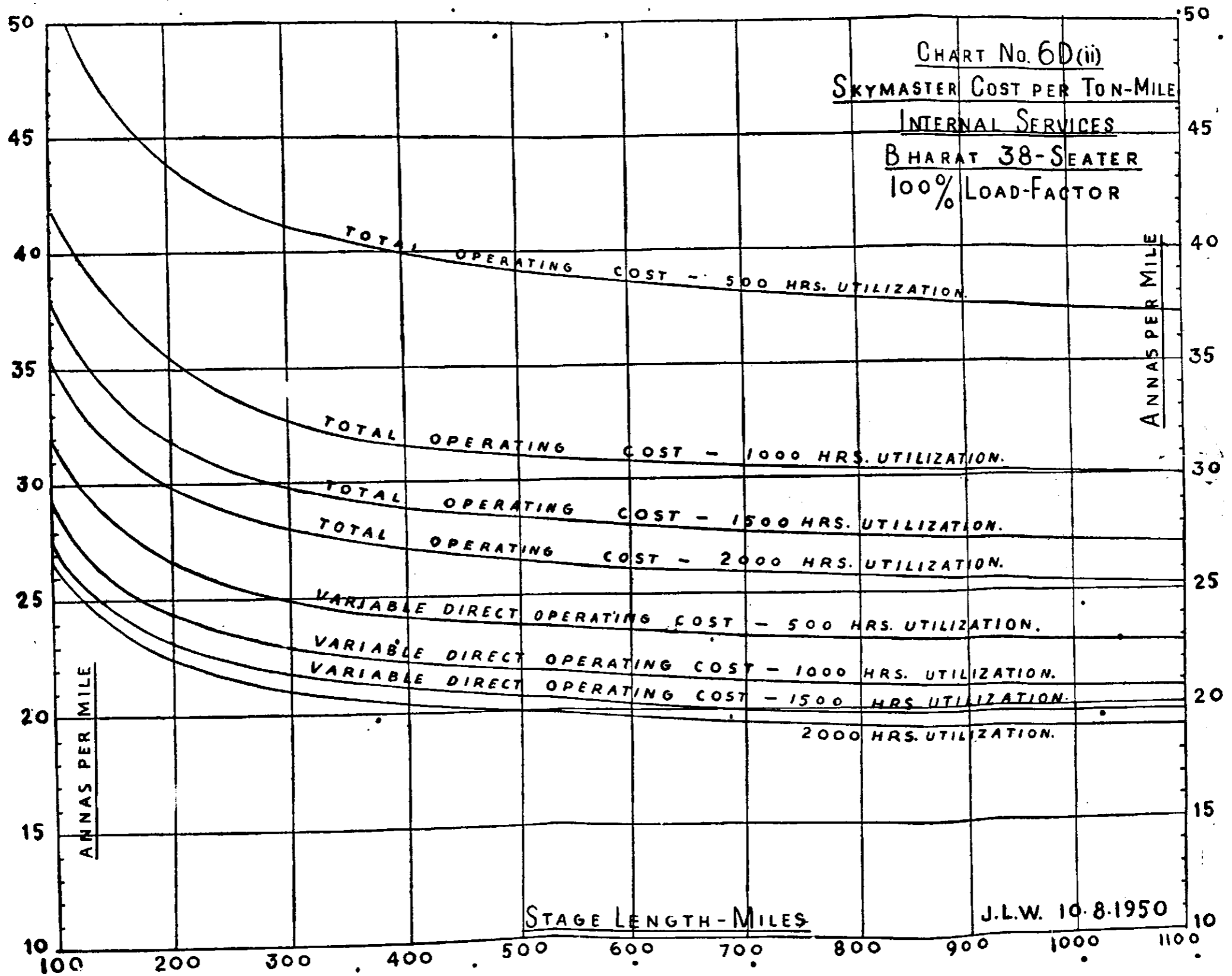
J.L.W. 4-8-1950

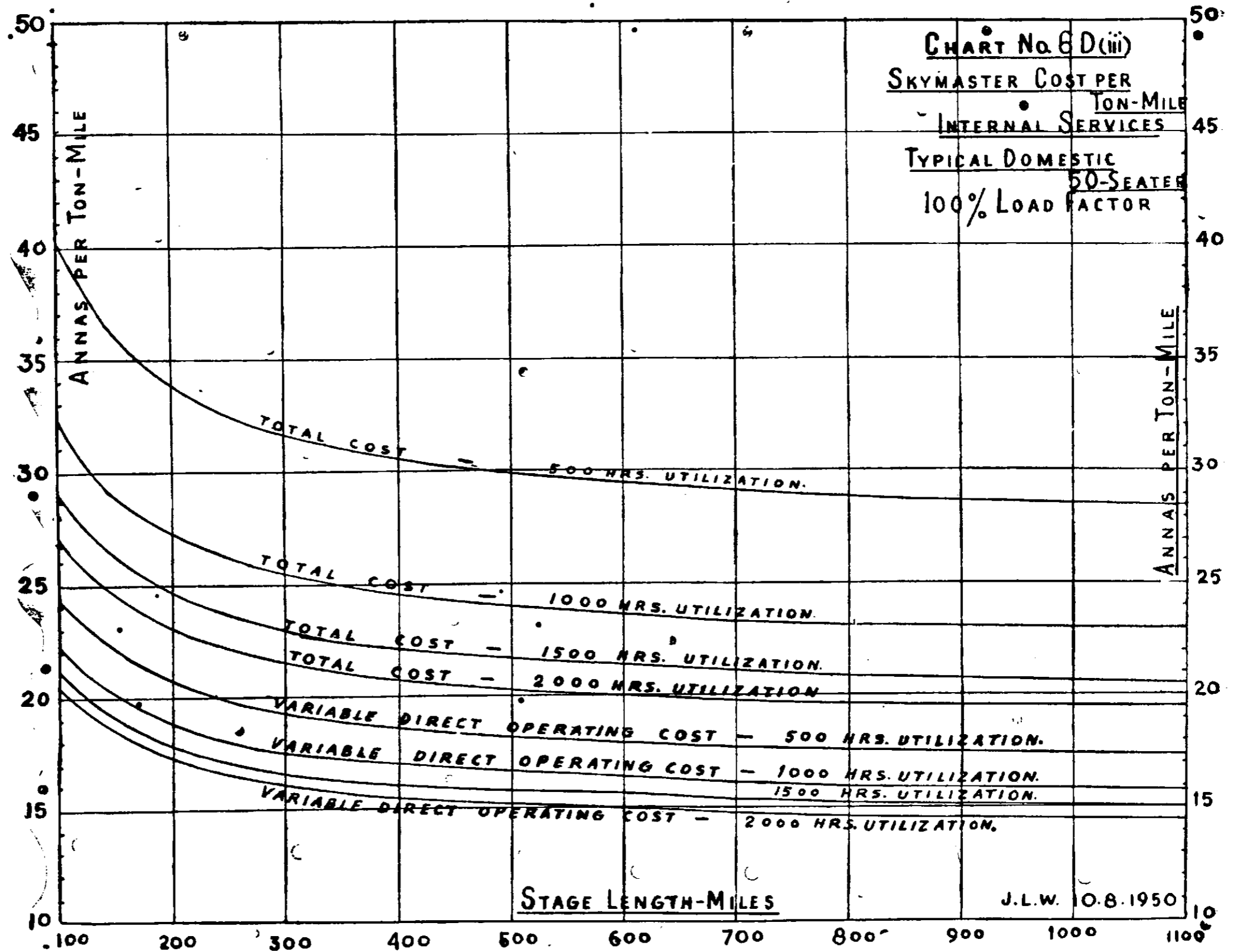


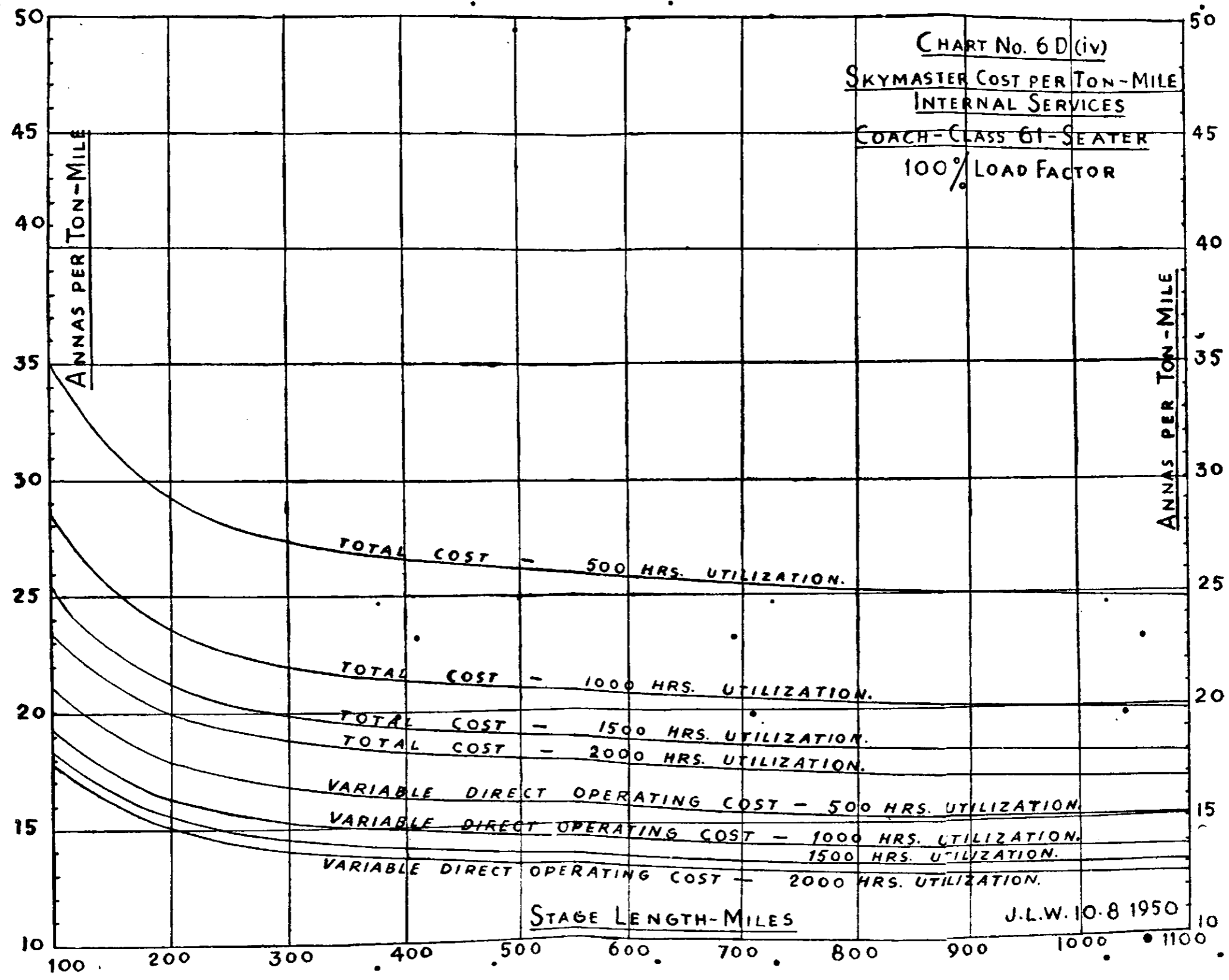














## APPENDIX XVI

### Extracts from Australian Air Navigation Regulations.

"The following flight time limitations are prescribed in respect of all pilots engaged in flying in regular public transport service:—

An Airline Transport Pilot who is acting as a pilot of an aeroplane which carries one or two pilots, but which does not carry a Flight Radio Operator shall be subject to the following limitations:—

He shall not normally fly as a member of the operating crew of a public transport aeroplane in excess of eight hours in any 24 consecutive hours, unless he has a rest period at or before the termination of such 8 hours of flying. Such rest period shall be not less than 8 hours and during such rest period he shall be free from all duties associated with his employment.

When he has flown as a member of the operating crew of a public transport aeroplane in excess of eight hours but not exceeding 10 hours in any 24 consecutive hours, he shall have a rest period of at least 24 hours, and during such rest period he shall be free from all duties associated with his employment.

In calculating flight hours for the purpose of these limitations, the time of flight shall be counted from the time the pilot starts the engines prior to taxiing out for take-off, until he stops the engines at his destination, or intermediate stopping place, after landing. In addition, all waiting time in excess of three hours in any one tour of duty shall be reckoned as flight time. Waiting time is defined as time spent on duty of any nature associated with his employment prior to departure, after arrival and on the ground at intermediate stopping places.

He shall not fly as a member of the operating crew of a public transport aeroplane in excess of 30 hours in any seven consecutive days. Relief from all duties for not less than 24 consecutive hours shall be taken by such pilot once during any seven consecutive days.

He shall not fly as a member of the operating crew of a public transport aeroplane in excess of 100 hours in any 30 consecutive days.

He shall not fly as a member of the operating crew of a public transport aeroplane in excess of 1,000 hours in any 12 consecutive months.

Whilst employed in regular public transport service he shall not engage in any other form of flying when such flying, in addition to that in regular public transport service, will exceed any flight time limitation specified herein.

An Airline Transport Pilot who is acting as a pilot of an aeroplane which carries two pilots and a Flight Radio Operator shall be subject to the following limitations:—

He shall not normally fly as a member of the operating crew of a public transport aeroplane in excess of 12 hours in any 24 consecutive hours, unless he has a rest period at or before the termination of such 12 hours of flying. Such rest period shall be not less than eight hours, and during such rest period he shall be free from all duties associated with his employment.

When he has flown as a member of the operating crew of a public transport aeroplane for 20 hours or more in any 48 consecutive hours, or 24 hours, or more in any 72 consecutive hours, he shall have a rest period of not less than 24 hours before being available for further duty. In any case a rest period of not less than 24 consecutive hours shall be taken by such pilot once during any seven consecutive days. During such rest periods he shall be free from all duties associated with his employment.

In calculating flight hours for the purpose of these limitations, the time of flight shall be counted from the time the pilot starts the engines prior to taxiing out for take-off until he stops the engines at his destination, or intermediate stopping place, after landing. In addition, all waiting time in excess of three hours in any one tour of duty shall be reckoned as flight time. Waiting time is defined as time spent on duty of any nature associated with his employment prior to departure, after arrival and on the ground at intermediate stopping places.

He shall not fly as a member of the operating crew of a public transport aeroplane in excess of 120 hours in any 30 consecutive days or in excess of 300 hours in any 90 consecutive days.

He shall not fly as a member of the operating crew of a public transport aeroplane in excess of 1,000 hours during any 12 consecutive months.

Whilst employed in regular public transport service, he shall not engage in any other form of flying when such flying, in addition to that in regular public transport service, will exceed any flight time limitation specified herein.

An Airline Transport Pilot who is acting as a pilot of an aeroplane which carries three or more pilots shall be subject to the following limitations:—

He may fly, as a member of the operating crew of a public transport aeroplane tours of duty not exceeding 30 hours without an intervening rest period on the ground but rest facilities shall be provided in the aeroplane.

Periods of active duty shall not exceed four hours and the intervening rest periods shall not be less than two hours.

When he has completed a tour of duty as outlined above he shall have a rest period on the ground of not less than 24 hours. During such rest period he shall be free from all duties associated with his employment.

He may fly a series of flights, as a member of the operating crew of a public transport aeroplane, of more than 12 hours but less than 24 hours, with an intervening rest period on the ground of not less than 12 hours after each such flight, but rest facilities shall be provided in the aeroplane. Periods of active duty shall not exceed four hours and the intervening rest periods shall be not less than two hours. The total hours flown in any such series of flights shall not exceed 60 hours without the pilot having a rest period on the ground of not less than 24 hours. During such rest period he shall be free from all duties associated with his employment.

Upon return to his base, after a series of such flights he shall have a rest period of not less than twice the total number of hours flown during such series. During such rest period he shall be free from all duties associated with his employment.

In calculating flight hours for the purpose of these limitations, the time of flight shall be counted from the time the pilot starts the engines prior to taxiing out for take-off until he stops the engines at his destination, or intermediate stopping place, after landing.

In addition, all waiting time in excess of three hours in any one tour of duty, shall be reckoned as flight time. Waiting time is defined as time spent on duty of any nature associated with the employment prior to departure, after arrival and on the ground at intermediate stopping places.

He shall not fly as a member of the operating crew of a public transport aeroplane in excess of 350 hours in any 90 consecutive days.

He shall not fly as a member of the operating crew of a public transport aeroplane in excess of 1,000 hours in any 12 consecutive months.

Whilst employed in regular public transport service, he shall not engage in any other form of flying when such flying, in addition to that in regular public transport service, will exceed any flight time limitation specified herein."





APPENDIX XVII

Statements showing the financial results of the actual operations of the companies during the 1st Quarter of 1950, based on

- (i) the level of cost attained by each company in the latest financial year for which figures have been furnished;
- (ii) the reasonable cost of operation estimated by the Committee; and
- (iii) actual earnings during the period.

STATEMENT I—AIR-INDIA

1st Quarter, 1950

Route	Equip- ment	Num- ber of trips opera- ted	Hours flown	Capacity ton- miles opera- ted	Revenue ton- miles carried	Load fac- tor	Cost at 1949 level	Cost at reason- able level	Revenue earned	Reve- nue rate per ton- mile	Result on 1949		Result on reasonable	
											Profit	Loss	Profit	Loss
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Bombay-Calcutta	Viking	208	1150	427,759	368,878	86.2	12,02,000	8,73,000	8,40,105	2.28	..	-3,62,000	..	-33,000
Bombay-Delhi (Day)	Viking	180	697	319,152	282,041	88.6	7,29,000	5,28,000						
Bombay-Delhi (Night)	Viking	62	253	114,507	110,649	96.5	2,64,500	1,92,000	13,42,869	2.64	..	-2,06,000	+2,03,000	..
Bombay-Delhi (Stopping)	Dakota	145	749	263,262	135,750	51.5	5,55,000	4,20,000						
Bombay-Karachi (Direct)	Viking	178	549	285,881	169,843	59.4	5,74,000	4,16,000						
Bombay-Karachi (Stopping)	Dakota	178	779	275,623	130,547	47.3	5,78,000	4,97,500	17,60,554	2.62	..	-8,09,000	..	-1,68,000
Bombay-Colombo	Dakota	180	1327	466,438	272,978	58.5	9,85,000	7,45,000						
Bombay-Madras	Dakota	143	584	179,570	100,011	55.7	4,33,000	3,28,000						

STATEMENT I—AIR-INDIA—contd.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Madras-Trivand. Dakota.	179	656	154,584	217,936	154,584	70.9	%	4,86,000	3,68,500	3,62,917	2.35	Rs.	Rs.	Rs.	Rs.
rum															
	..	6744	2,550,128	1,725,281	67.6	58,06,500	43,08,000	43,06,445	2.50	..	-15,00,000	..	-1,600		

	Viking	Dakota
Cost per hour (1949 level)	Rs. 1045	Rs. 742
Hours flown	2649	4095
Present fleet	7	14
Required fleet	7	9
Annual flying hours at current frequencies	12137	14492
Utilization	1734	1610
Reasonable cost per hour	Rs. 758	Rs. 592

**STATEMENT II—INDIAN NATIONAL AIRWAYS**  
1st Quarter 1950

Route	Equip- ment	Num- ber of trips opera- ted	4	5	6	7	8	9	10	11	12		13		14		15
											Profit	Loss	Profit	Loss	Profit	Loss	
			Hours flown	Capacity ton- miles operated	Revenue ton- miles carried	Load fac- tor	Cost at 1948-49 level	Cost at reason- able level	Revenue earned*	Reve- nue per ton- mile	Reve- nue cost	Result on reasonable cost	Result on reasonable cost	Result on reasonable cost	Result on reasonable cost	Result on reasonable cost	Result on reasonable cost
Delhi-Calcutta	Viking	170	783	336,439	228,808	68.0	8,35,000	6,43,500	6,02,000	2.63	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Delhi-Karachi	Dakota	78	361	117,647	62,188	52.9	2,66,000	2,16,500	1,55,800	2.50	..	..	..	..	..	..	..
Delhi-Srinagar	Dakota	115	364	122,944	87,658	71.3	3,04,000	2,48,000	3,43,500	3.52	..	..	..	..	..	..	..
Srinagar- Jammu	Dakota	46	38	11,085	9,537	86.0	3,04,000	2,48,000	3,43,500	3.52	..	..	..	..	..	..	..
Delhi-Lahore	Viking	175	306	111,444	64,422	57.8	3,26,000	2,61,500	1,76,000	2.74	..	..	..	..	..	..	..
Calcutta-Ran- goon	Viking	180	615	224,697	138,313	61.5	6,55,000	5,05,000	5,26,000	3.80	..	..	..	..	..	..	..
		2467		924,256	590,926	64.0	23,86,000	18,64,500	18,03,300	3.05	..	..	..	..	..	..	..

**Non-transportation revenue  
(other than fuel rebate)**

Net result	
Dakota	Viking
Rs. 756	Rs. 1,065
763	1704
11	5
6	5
6315	6602
1052	1320
Rs. 617	Rs. 822

Cost per hour (1948-49 level)	
Hours flown	Rs. 756
Present fleet	763
Required fleet	11
Annual flying hours on basis of current frequencies.	6
Corresponding utilization	6315
Reasonable cost per hour	1052
	Rs. 617
	Rs. 822

\*Computed at the average revenue per ton-mile for the period July 1949—March 1950.







STATEMENT VI—BHARAT AIRWAYS

1st Quarter 1950

Route	Equip- ment	Num- ber of trips operat- ed	Hours flown	Capacity ton- miles operated	Revenue ton- miles carried	Load fac- tor	Cost at		Revenue earned	Reve- nue rate per ton mile		Result on 1948-49		Result on reasonable cost		
							1948-49 level	1948-49 reason- able level		Rs.	%	Rs.	Rs.	Rs.	Rs.	Profit +
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15		
Calcutta— Patna—Delhi	Dakota	180	1050	359,177	188,717	52.8	6,05,000	5,78,000	5,02,000*	2.66	..	-1,03,000	..	-76,000		
Calcutta— Allahabad— Delhi	Dakota	51	300	98,024	30,806	33.2	1,72,300	1,65,000	71,700*	2.32	..	-1,00,600	..	-93,300		
Calcutta— Chittagong	Dakota	272	431	156,716	106,280	68.0	2,48,000	2,37,500	..,02,000†	2.85	..	..	+64,500	..		
Calcutta— Agartala	Dakota	1484	1979	Not known	826,260	..	11,38,000	10,89,000	14,41,000†	1.745	..	..	+3,03,000	..		
Agartala— Gauhati	Dakota	178	223	64,437	51,813	80.5	1,28,300	1,22,800	1,22,600†	2.36	..	-5,700	..	-200		
		3983	..	..	1,203,882	..	22,91,600	21,92,300	24,39,300	2.02	..	+1,47,700	..	+2,47,000	..	

Non-transportation revenue negligible.

\*Computed on the basis of average revenue per ton-mile for the period July 1949 to March 1950.

†On the basis of average revenue for January to June 1950.



STATEMENT VI—BHALAIAT AIRWAYS—*contd.*

Cost per hour (1948-49 level)	Rs. 575
Hours flown	3983
Present fleet	12
Required fleet	10
Annual flying hours on basis of current frequencies	17,365
Corresponding utilization	1737
Reasonable cost per hour	550



STATEMENT VIII—HIMALAYAN AVIATION  
1st Quarter 1950

Route	Equip- ment	Num- ber of trips oper- ated	Hours oper- ated	Capacity ton miles operated	Revenue ton miles carried	Load factor	Cost at 1949-50 level	Cost at recom- mend- able level	Revenue earned	Reve- nue per ton mile	Result on 1949-50 cost	Result on reasonable cost		
							Rs.	Rs.	Rs.	Rs.	Profit	Profit		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Delhi-Nagpur Madras	Dakota	180	1283	484,100	317,966	66.7	13,32,000	14,00,000	13,26,000	1.96	..	-6,000	..	-74,000
Bombay- Nagpur- Calcutta	Dakota	180	1230	458,200	358,434	78.2								
			2513	942,300	676,400	71.9								
									Dakota					
									Rs. 530					
									2513					
									7					
									6					
									10,098					
									1683					
									Rs. 557					

\*Computed at the average revenue per ton mile for the period  
15-10-49 to 31-3-50.



## APPENDIX XVIII

Statements showing reasonable levels of revenue per ton-mile (with corresponding passenger fares), to be earned by the companies to get a gross profit of 10 per cent on their fixed capital assets.

STATEMENT I—AIR-INDIA.

Required fleet 9 Dakotas and 7 Vikings  
 Required Capital Rs. 27,00,000 + Rs. 70,00,000 = Rs. 97,00,000  
 Profit at 10 per cent of capital Rs. 9,70,000  
 Total traffic for year 6,873,200 ton-miles.  
 Profit per ton-mile Rs. 0.14L.

Route	1	2	3	4.	5	6	7	8	9	10	11	12	13	14	15
Frequency			Equip- ment	Flying hours per year.	Capacity ton-miles for year	Actual load factor during 1st Qr. 1950	Reason- able load factor	Probable traffic for year ton miles	Reason- able cost per hour	Reason- able route cost per year.	Reason- able profit	Required revenue	Required revenue per ton mile	Required revenue per ton mile	Equip- valent passen- ger rate
						%	%	Ra.	Ra.	Ra.	Ra.	Ra.	Ra.	As. Rs.	As. Rs.
Bombay—Cal- cutta.	Daily	Viking	4076	1,518,000	86.2	75	1,138,000	708	30,92,000	1,60,500	32,52,500	45.7	2.86	4.09	
Bombay— -Delhi.	Daily	Viking	2905	1,350,000	88.6	75	1,012,000	758	22,03,000	1,43,000	23,46,000	37.1	2.32	3.32	
Bombay-Delhi	Nightly	Viking	2905	1,350,000	96.5	75	1,012,000	758	22,03,000	1,43,000	23,46,000	37.1	2.32	3.32	
Bombay-Ah- medabad— Jaspur-Delhi	4 Weekly	Dakota	2149	754,000	51.5	60	452,400	562	12,07,000	63,900	12,70,900	45.0	2.81	4.02	
Bombay-Ka- rachi	Daily	Viking	2251	1,142,000	59.4	65	742,300	758	17,05,000	1,04,700	18,09,700	39.0	2.44	3.48	
Bombay-Ah- medabad— Karachi	Daily	Dakota	3194	1,102,200	47.3	60	551,000	562	17,93,000	77,800	18,70,800	54.3	3.39	4.86	

STATEMENT I—AIR-INDIA—contd.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
					%	%		Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Bombay-Co- lombo	Daily	Dakota	5200	1,866,000	58.5	60	1,120,000	562	29,20,000	1,58,100	30,78,100	44.0	2.75	3.93
Bombay-Mad- ras	3 Weekly	Dakota	1274	392,000	55.7	60	235,000	562	7,16,000	33,200	7,49,200	51.0	3.18	4.55
Madras-Tri- vandrum	Daily	Dakota	2675	872,000	70.9	70	610,000	562	15,02,000	86,100	15,88,100	41.6	2.60	3.72
			26,620	10,346,200	67.6	61.6	6,873,200	..	1,73,41,000	9,70,300	1,83,11,300	42.6	2.66	3.80

	Viking	Dakota
Hours flown per year	. . . . .	14,492
Utilization	. . . . .	1,610
Reasonable cost of operation per hour	. . . . .	Rs. 562

STATEMENT II—INDIAN NATIONAL AIRWAYS.

Required fleet 6 Dakotas & 5 Vikings.  
 Required capital Rs. 18,00,000 + Rs. 50,00,000 + Rs. 58, 00,000.  
 Profit at 10% of capital Rs. 6,80,000.  
 Total traffic for year 3,758,000 ton-miles.  
 Profit per ton-mile Rs. 0.181.

Route	Fre- quency	Equip- ment.	3	4	5	6	7	8	9	10	11	12	13	14	15	
					Flying hours per year.	Capacity ton-miles for year.	Actual load factor during 1st Qr. 1950.	Reason- able load factor assumed	Probable traffic for year	Reason- able cost per hour.	Reasonable route cost per year.	Reason- able profit.	Required revenue. per ton- mile.	Equivalent passenger rate.	As. per mile	
Dalhi-Calcutta.	Daily	Viking.			3192	1,346,000	68.0	65	875,000	60	24,25,000	1,58,300	25,83,300	47.2	2.95	4.21
Dalhi-Jodhpur- Karachi.	Weekly	Dakota		1404	470,000	52.9	50	235,000	592	8,32,000	42,500	8,74,500	59.5	3.72	5.31	
Dalhi-Amritsar. Jammu-Sri- nagar.	Weekly	Dakota	1080		790,000	71.3	65	507,000	592	13,70,000	91,800	14,61,800	46.1	2.88	4.10	
Dalhi-Amritsar. Srinagar.	4 Weekly	Dakota	1248													
Srinagar-Jam- mu.	Weekly	Dakota	347		100,000	80.7	70	70,000	592	2,06,000	12,680	2,18,680	49.9	3.12	4.45	
Dalhi-Lahore.	Daily.	Dakota	1300		464,000	57.8	60	278,000	592	7,70,000	50,300	8,20,300	47.2	2.95	4.23	





STATEMENT III—AIR SERVICES OF INDIA-DECCAN.

Required fleet 9 Dakotas.  
 Required Capital Rs. 27,00,000.  
 Profit at 10% of capital Rs. 2,70,000.  
 Total traffic for year 3,472,000 ton-miles.  
 Profit per ton-mile Rs. 0.0778.

Route.	Freq- quency.	Equip- ment.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
								%	%	Ton- miles.	Reason- able load factor during 1st Qr. 1950.	Reason- able cost route cost per hour per year	Reason- able profit	Required revenue	Required revenue per ton- mile.	Equiva- lent pass- enger rate, As. per mile	
Delhi-Gwalior- Indore-Nag- pur-Hydr- abad-Madras.	3 times a week	Dakota	2630	900,000	64.0*	70	630,000	562	14,78,000	49,000	15,27,000	38.7	2.42	3.44			
Bangalore-Hy- drabad-Bom- bay-Indore.	4 times a week	Dakota	2735	933,000	..	65	606,000	562	15,38,000	47,100	15,85,100	41.9	2.62	3.73			
Bombay-Kathi- war-Kara- chi.	3 weekly & 4 weekly	Dakota	2380	835,000	61.0	60	501,000	562	13,40,000	39,000	13,79,000	44.0	2.75	3.92			
Bombay-Raj- kot.	Daily	Dakota	1520	543,000	66.2	70	380,000	562	8,55,000	29,900	8,84,600	37.2	2.33	3.33			
Delhi-Nagpur- Madras.	Daily Night	Dakota	5110	1,936,000	65.7	70	1,355,000	562	28,75,000	1,05,400	29,80,400	35.2	2.20	3.14			
			14,375	5,147,000	..	67.5	3,472,000	562	80,86,000	2,70,100	83,56,100	38.6	2.41	3.44			

\* Actual load factor for the Delhi-Nagpur-Hydrabad-Madras route for this period.

Flying hours per year . . . . . 14,375  
 Utilization . . . . . 1,597  
 Reasonable cost per hour . . . . . Rs. 562

STATEMENT IV—AIRWAYS (INDIA)

Required fleet.....12 Dakotas.  
 Required capital.....Rs. 36,00,000.  
 Profit at 10% of capital.....Rs. 3,60,000  
 Total traffic for year.....5,096,000 ton-miles.  
 Profit per ton-mile.....Rs. 0.0706.

Route	Fre- quency	Equip- ment	Flying hours per year	Capacity ton-miles for year	Actual load factor during 1st Qr. 1950	Reason- able factor assumed	Probable traffic for year	Reason- able cost per-hour	Reasonable route cost per year	Reasonable profit	Required revenue	Required revenue per ton- mile	Equiva- lent passen- ger rate	As. per mile
					%	%	Ton-miles.	Rs.	Rs.	Rs.	Rs.	As.	Rs.	As. Rs.
Calcutta-Dacca.	3													
	Daily													
Calcutta-Vizag Madras-Ban- galore.	5	Dakota	2190	887,000	53.5	60	532,000	546	11,98,000	37,600	12,33,600	37.1	2.32	3.32
Calcutta-Bhu- baneswar- Madras-Ban- galore.	5	Weekly Dakota	3570	1,232,000	45.6	60	740,000	546	19,50,000	52,300	20,02,300	43.2	2.70	3.87
Calcutta-Bag- dogra.	2	Dakota	2680	997,000	75.0	70	697,000	546	14,62,000	49,300	15,11,300	34.7	2.17	3.10
Calcutta-Gau- hati.	1	Dakota	1583	1,520,000	75.5	70	1,064,000	546	23,90,000	75,200	24,65,200	37.1	2.32	3.32
Calcutta-Gau- hati-Mohan- bari.	1	Dakota	2788	1,520,000	75.5	70	1,064,000	546	23,90,000	75,200	24,65,200	37.1	2.32	3.32
Calcutta-Bom- bay.	1	Dakota	4990	1,650,000	38.7	50	825,000	546	27,20,000	58,300	27,78,300	53.8	3.36	4.81
Calcutta-Bom- bay.	1	Dakota	4990	1,650,000	78.2	75	1,239,000	546	27,20,000	87,500	28,07,500	36.3	2.27	3.24
			22801	7,936,000		64.2	6,096,000	546	1,24,38,000	3,60,200	1,27,98,200	40.2	2.51	3.58

Flying hours per year . . . . . 22,801  
 Utilization . . . . . 1,900  
 Reasonable cost per hour . . . . . Rs. 546

STATEMENT V—BHARAT AIRWAYS

Required fleet . . . . . 12 Dakotas.  
 Required capital . . . . . Rs. 38,00,000.  
 Profit at 10% of capital . . . . . Rs. 3,80,000.  
 Total traffic for year . . . . . 6,855,000 ton-miles.  
 Profit per ton-mile . . . . . Rs. 0-0525.

Route	Fre- quency	Equip- ment	Hours	Capacity ton-miles for year	Actual		Reason- able load factor during 1st Qr. 1960 %	Reason- able load factor assumed %	Probable traffic for year	Reason- able cost per hr.	Reason- able cost per year	Reason- able Profit	Required revenue	Required revenue, per ton-mile.	EQUIVA- LENT PASSEN- GER RATE, AS per mile
					%	Ton-miles									
Calcutta-Patna- Banaras-Lucknow-Delhi.	Daily	Dakota	4258	1,436,000	52.8	50	718,000	540	23,00,000	37,700	23,37,700	52.1	3.25	4.65	
Calcutta-Allahabad-Kanpur-Delhi.	2 Weekly	Dakota	1170	372,000	33.2	40	149,000	540	6,33,000	7,820	6,40,820	68.9	4.30	6.10	
Calcutta-Chit- tagong.	2 Daily	Dakota	2312	840,000	68.0	70	588,000	540	12,48,000	30,800	12,78,800	34.8	2.17	3.10	
Calcutta-Agar- tala.	9 Daily (6 freighter)	Dakota	8775	3,800,000	..	75	3,040,000	540	52,00,000	1,69,600	53,59,600	28.2	1.76	2.52	
Agartala-Gau- hati.	Daily	Dakota	850	258,000	80.5	85	2,360,000	540	31,60,000	1,24,000	32,84,000	22.3	1.39	(largely freight)	
Calcutta-Agar- tala.	6 Daily (freighter service).	Dakota	5850	2,775,000	95	85	2,360,000	540	31,60,000	1,24,000	32,84,000	22.3	1.39	(largely freight)	
			23215	9,481,000	..	72.4	6,855,000	540	1,25,41,000	3,59,920	1,29,00,920	30.2	1.88	2.89	

Flying hours per year . . . . . 23,216  
 Utilization . . . . . 1,985  
 Reasonable cost per hour . . . . . Rs. 549

STATEMENT VI--AIR SERVICES OF INDIA

Required fleet..... 3 Dakotas 2 S.O. 95's  
 Required capital..... Rs. 9,00,000 + Rs. 16,00,000 = Rs. 25,00,00  
 Profit at 10% of capital . . . . . s. 2,50,000  
 Total traffic ton-miles.... 1,212,000  
 Profit per ton-mile.... Rs. 0.206

Routes	Frequency	Equip- ment	Flying hours per year	Capacity ton-miles for year	Actual load factor	Lead factor	Probable traffic for year	Rea- son- able cost per hour	Rea- son- able route cost per year	Reason- able profit	Required revenue	Required revenue per ton-mile	Equivalent passenger rate	
					dur. as- sumed	%	%	Rs.	Rs.	Rs.	Rs.	Rs.	As. per mile	
Bombay-Kathia- war Karach.	3 weekly 4 weekly.	Dakota	2480	885,000	61.0	60	501,000	585	14,51,000	1,03,300	15,54,300	40.6	3.10	4.45
Bombay-Rajkot.	Daily	Dakota	1520	543,000	68.2	70	380,000	585	8,90,000	78,300	9,68,300	40.8	2.55	3.64
Bombay-Indore- Gwalior-Delhi	3 Weekly	S.O. 95	1274	283,000	48.5	55	166,000	460	5,57,000	32,100	6,19,100	63.4	3.06	5.67
Bombay-Poona- Bangalore	4 weekly	S.O. 95	1200	438,000	34.6	40	175,000	460	5,52,000	36,100	6,88,100	53.8	3.36	4.1
			6,474	2,099,000	...	57.7	1,212,000	..	34,80,000	2,49,800	37,29,800	49.2	3.08	4.40

S.O. 95 Dakota  
 Hours flown per year . . . . . 2,474 4,000  
 Utilisation . . . . . 1,237 1,333  
 Reasonable cost per hour . Rs. 460 Rs. 585

STATEMENT VII—DECCAN AIRWAYS.

Required fleet . . . . . 7 Dakotas.  
 Required capital . . . . . Rs. 21,00,000  
 Profit at 10% of capital . . . . . Rs. 2,10,000  
 Total traffic ton-miles . . . . . 3,282,000  
 Profit per ton-mile . . . . . Rs. 0-0639

Route	Frequency	Equip- ment	Flying hours per year	Capacity ton-miles for year	Actual load factor	Probable traffic for year	Reason- able cost per hour	Reason- able route cost per year	Reason- able profit	Required revenue	Required revenue per ton-mile	Equivalent Passenger rate
					%	Ton-miles.	Rs.	Rs.	Rs.	Rs.	As. Rs.	As. per mile
Dolhi-Nagpur- Hyderabad- Madras.	Daily	Dakota	5110	1,936,000	64.0	1,257,000	545	27,85,000	80,300	28,65,300	36.5	3.27
Hyderabad-Bom- bay.	Daily	Dakota	1825	603,000	64.3	392,000	545	9,95,000	25,100	10,20,100	41.7	3.78
Hyderabad-Ban- alore.	Daily	Dakota	1400	504,000	54.3	278,000	545	7,63,000	17,600	7,80,600	45.0	4.01
Delhi-Nagpur- Madras.	Daily (Night)	Dakota	5110	1,936,000	64.7	1,355,000	545	27,85,000	86,600	28,71,600	33.9	3.02
			13,445	4,979,000	65.9	3,282,000	545	73,28,000	2,09,600	75,37,600	36.7	3.28

## APPENDIX XIX

Statements showing the financial results of the operations of the Companies under the plan of re-organization proposed by the Committee, on the basis of—

- (i) reasonable load factors based on the load factors actually achieved during a most recent period; and
- (ii) reasonable costs of operation estimated by the Committee; and
- (iii) rates of revenue likely to be earned on each route on the basis of the passenger fares and freight rates recommended by the Committee.

STATEMENT I—AIR-INDIA

Route	2	3	4	5	6	7	8	9	10	11	12	13	14
Frequency	Equipment	Flying hours per year	Capacity ton-miles for year	Actual load factor during 1st Qr. 1950	Reasonable load factor assumed	Ton-miles	Reasonable cost per hour	Reasonable route cost per ton-mile	Revenue	Route revenue for year	Profit	Loss	Result
				%	%		Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Bombay-Calcutta	Daily	Viking	4076	86.2	75	1,138,500	758	30,92,000	2.56	29,15,000	..	-1,77,000	..
Bombay-Delhi	Daily	Viking	2905	88.6	75	1,012,000	758	22,03,000	2.56	25,91,000	+3,88,000	..	..
Bombay-Delhi	Nightly	Viking	2905	96.5	75	1,012,000	758	22,03,000	2.56	25,91,000	+3,88,000	..	..
Bombay-Ahmedabad-Jaipur-Delhi	4 weekly	Dakota	2149	51.5	60	452,400	562	12,07,000	2.30	10,41,000	..	-1,66,000	..
Bombay-Karachi	Daily	Viking	2251	59.4	65	742,300	758	17,05,000	3.03	22,50,000	+5,45,000	..	..
Bombay-Ahmedabad-Karachi	Daily	Dakota	3104	47.3	50	551,000	562	17,93,200	2.41	13,28,000	..	-4,65,000	..
Bombay-Colombo	Daily	Dakota	5200	58.5	60	1,120,000	562	29,20,000	2.70	30,24,000	+1,04,000	..	..
Bombay-Madras	3 weekly	Dakota	1274	55.7	60	235,000	562	7,16,000	2.56	6,02,000	..	-1,14,000	..
Madras-Trivandrum	Daily	Dakota	2675	70.9	70	610,000	562	15,02,000	2.35	14,34,000	..	-68,000	..
			26629	67.6	61.6	6,873,200	..	1,78,41,200	2.58	1,77,76,000	+4,35,000	..	..

Non-transportation revenue (other than fuel tax rebate).  
 18,90,000  
 Net profit. . . . . +23,25,000  
 Fixed assets . . . . . Rs. 97 lakhs  
 Profit at 8% . . . . . 7.76 lakhs



STATEMENT II—INDIAN NATIONAL AIRWAYS

Route	Frequency	Equip- ment	Fly- ing hours per year	Capacity ton-miles for year	Actual load factor during 1st Qr. 1950	Reason- able load factor assumed	Probable traffic for year	Reason- able cost per hour	Reason- able cost per year	Reve- nue per ton- mile	Route revenue for year		Result		
											Ton-miles	Rs.	Rs.	Rs.	Profit
1	2	3	4	5	6	7	8	9	10	11	12	13	14		
Delhi-Calcutta	Daily	Viking	3192	1,346,000	68.0	65	875,000	760	24,25,000	2.73	23,88,750	..	-36,000		
Delhi-Jodhpur- Karschi.	3 Weekly	Dakota	1404	470,000	52.9	50	235,000	592	8,32,000	2.50	5,88,000	..	-2,44,000		
Delhi-Amritsar-Sri- nagar.	4 weekly	Dakota	1248												
Delhi-Amritsar-Jam- mu-Srinagar.	3 Weekly	Dakota	1066	780,000	71.3	65	507,000	592	13,70,000	3.52	17,85,000	+4,15,000	..		
Srinagar-Jammu	4 weekly	Dakota	347	100,000	80.7	70	70,000	592	2,06,000	3.52	2,46,000	+40,000	..		
Delhi-Lahore	Daily	Dakota	1300	464,000	57.8	60	278,000	592	7,70,000	2.74	7,62,000	..	-8,000		
Calcutta-Rangoon	6 weekly	Viking	2132	779,000	61.5	60	467,000	760	16,20,000	3.80	17,75,000	+1,55,000	..		
Delhi-Srinagar	Daily	Dakota	2250	762,000	..	50	381,000	592	13,32,000	3.52	13,40,000	+8,000	..		
Delhi-Calcutta	Night Daily.	Viking	3192	1,346,000	..	70	943,000	760	24,25,000	2.73	25,74,390	+1,49,390	..		
			16131	6,047,000	..	62.1	3,756,000	..	1,09,80,000	3.04	1,14,59,140	+4,79,000	..		
												Non-transportation revenue (other than fuel rebate)		3,00,000	
												Net profit	..	7,79,000	
												Fixed assets	..	68 lakhs	
												Profit at 8%	..	5.44 lakhs	

STATEMENT III—AIR SERVICES OF INDIAN—DECCAN.

Route	1	2	3	4	5	6	7	8	9	10	11	12	13	14
		Fre- quency	Equip- ment	Flying hours per year	Capacity ton-miles for year	Actual load dur- ing 1st Qr. 1950	Reason- able factor	Probable traffic for year	Reason- able cost per hour	Reason- able cost per year	Reve- nue per ton- mile	Route revenue per year	Profit +	Loss -
						%	%	Ton-miles	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Delhi-Gwalior-Indore-Nag- pur-Hyderabad-Madras.		3 times a week	Dakota	2630	900,000	64.0*	70	630,000	562	14,78,000	2.15	13,56,000		-1,22,000
Bongalore-Hyderabad- Bombay-Indore.		4 times a week.	Dakota	2735	933,000	..	65	606,000	562	15,38,000	2.15	13,02,000		-2,36,000
Bombay-Kathiswar- Karachi.		3 weekly and 4 weekly.	Dakota	2380	835,000	61.0	60	501,000	562	13,40,000	2.06	14,83,000	+1,43,000	
Bombay-Rajkot . . .		Daily	Dakota	1520	543,000	66.2	70	380,000	562	8,55,000	2.86	10,89,000	+2,34,000	
Delhi-Nagpur-Madras .		Daily Night.	Dakota	5110	1,936,000	65.7	70	1,355,000	562	28,75,000	2.25	30,50,000	+1,75,000	
				14,375	5,147,000	..	67.5	3,472,000	562	80,86,000	2.38	82,80,000	+1,94,000	

Non-transportation revenue (other than fuel rebate)

Net profit	3,44,000	
Fixed assets	Rs. 27 lakhs	
Profit at 8%	Rs. 2.16 lakhs	

\*For present Bombay-Nagpur-Delhi route.



**STATEMENT V—BHARAT AIRWAYS**

Route	Fre- quency	Equip- ment	Flying hours per year	Capacity ton-miles per year	Actual load dur- ing 1st Qr. 1950	Reason- able factor	Probable traffic for year	Reason- able per hour	Reason- able cost year	Revo- lution per ton- mile	Route revenue per year	Result	
												Profit +	Loss —
1	2	3	4	5	6	7	8	9	10	11	12	13	14
Calcutta-Patna-Banaras- Lucknow-Delhi.	Daily	Dakota	4258	1,436,000	52.8	50	718,000	540	23,00,000	2.66	19,10,000	Rs.	Rs.
Calcutta-Allahabad-Kan- pur-Delhi.	2 weekly	Dakota	1170	372,000	33.2	40	149,000	540	6,33,000	2.32	3,45,000	Rs.	Rs.
Calcutta-Chittagong	2 daily	Dakota	2312	840,000	68.0	70	588,000	540	12,48,000	2.85	16,80,000	Rs.	Rs.
Calcutta-Agartala	9 daily (6 freight)	Dakota	8775	3,800,000	..	75	3,040,000	540	52,00,000	1.79	54,40,000	Rs.	Rs.
Agartala-Gauhati	Daily	Dakota	850	258,000	80.5	85	2,360,000	540	31,60,000	1.5	35,40,000	Rs.	Rs.
Calcutta-Agartala	6 daily (freighter service)	Dakota	5850	2,775,000	95	85	2,360,000	540	31,60,000	1.5	35,40,000	Rs.	Rs.
			23215	9,481,000	..	72.4	6,855,000	540	1,25,41,000	1.89	1,29,15,000	Rs.	Rs.

Non-transportation revenue  
(other than fuel rebate)  
Net profit

12,000  
+3,86,000

Fixed assets  
Profit at 8%

36 lakhs  
2.88 lakhs

STATEMENT VI—AIR SERVICES OF INDIA

Route	Fre- quency	Equip- ment	Flying hours per year	Capacity ton-miles for year	Actual load factor dur- ing 1st Qr. 1950	Probable traffic for year	Reason- able cost per hour	Reason- able cost per ton- miles	Revenue per ton- miles for year	Result			
										Profit	Loss		
1	2	3	4	5	6	7	8	9	10	11	12	13	14
Bombay-Kathiewar- Karachi.	3 weekly & 4 weekly	Dakota	2480	835,000	61.0	60	501,000	585	14,51,000	2.96	14,83,000	+32,000	
Bombay-Rajkot . .	Daily	Dakota	1520	543,000	66.2	70	380,000	585	8,90,000	2.86	10,87,000	+1,97,000	
Bombay-Indore-Gwalior- Delhi.	3 week- ly.	S.O-95	1274	283,000	48.5	55	156,000	460	5,87,000	2.69	4,20,000		-1,67,000
Bombay-Poona-Bangalore	4 weekly	S.O-95	1200	438,000	34.6	40	175,000	460	5,52,000	2.75	4,81,000		-71,000
			6474	2,099,000	..	57.7	1,212,000	..	34,80,000	2.86	34,71,000		-9,000

Non-transportation revenue  
(other than fuel rebate)

Net result

1,10,000  
+1,01,000

Fixed assets

25 lakhs

Profit at 8%

2 lakhs

**STATEMENT VII—DECCAN AIRWAYS**

Route	Fre- quency	Equip- ment	Flying hours	Capacity ton-miles for year	Actual load factor during med 1st Qr. 1950	Load factor	Probable traffic for year	Reason- able cost per hour	Reason- able route cost per year	Reve- nue per ton. mile	Route revenue for year	Result	
												Profit +	Loss —
1	2	3	4	5	6	7	8	9	10	11	12	13	14
Dolhi-Nagpur-Hyderabad- Madras.	Daily	Dakota	5110	1,936,000	84.0	65	1,257,000	545	27,85,000	2.15	27,05,000		—80,000
Hyderabad-Bombay	Daily	Dakota	1825	603,000	64.3	65	392,000	545	9,95,000	2.09	8,20,000		—1,75,000
Hyderabad-Bengalore	Daily	Dakota	1400	504,000	54.3	55	278,000	545	7,63,000	2.13	5,92,000		—1,71,000
Dolhi-Nagpur-Madras	Daily (night)	Dakota	5110	1,936,000	64.7	70	1,355,000	545	27,85,000	2.25	30,50,000		+2,65,000
			18,445	4,979,000	..	65.9	3,282,000	545	73,28,000	2.19	71,67,000		—1,61,000

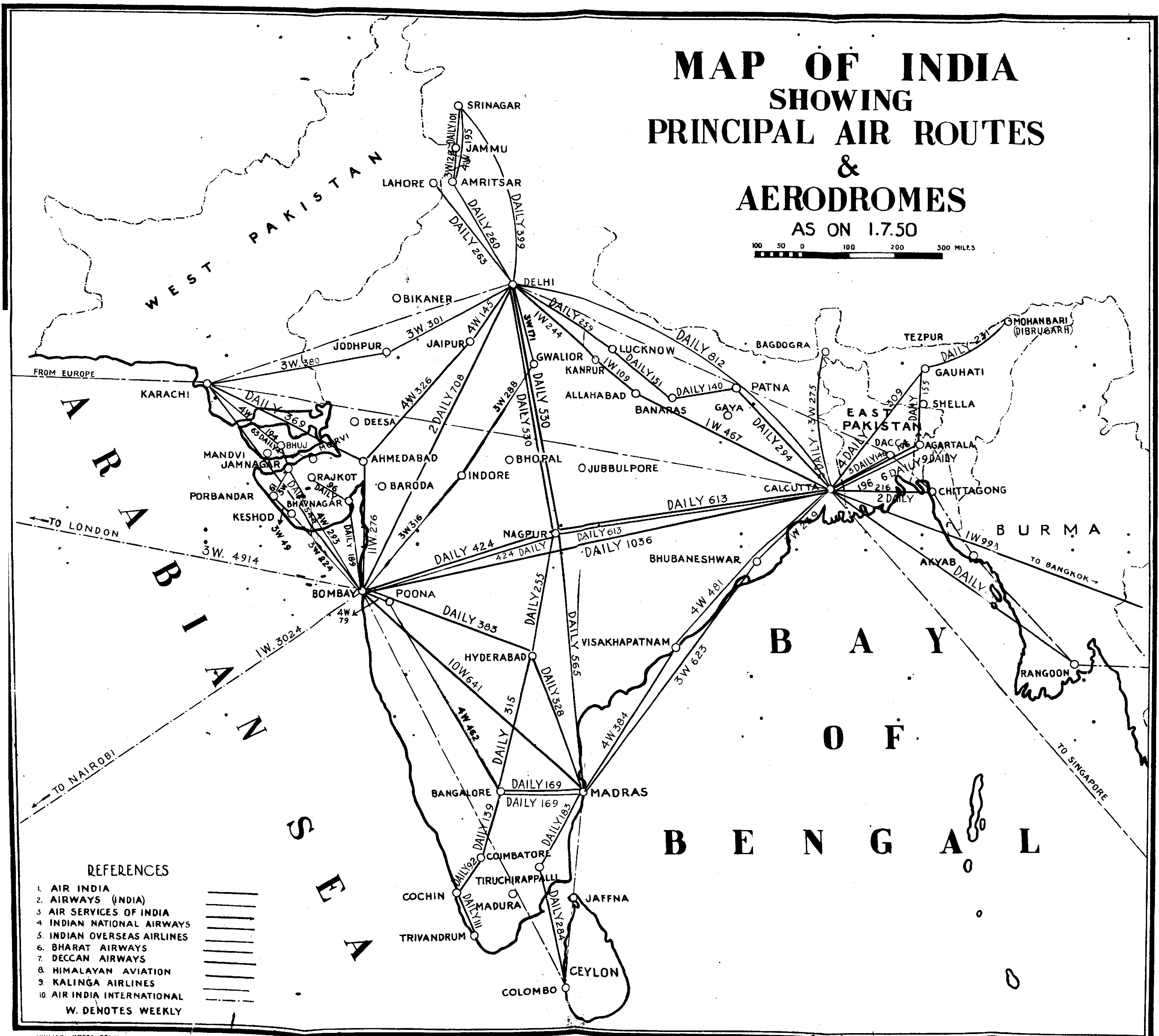
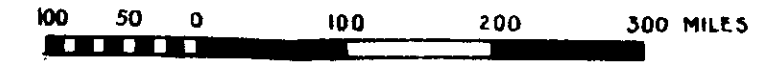
Non-transportation revenue  
(other than fuel rebate)

Net result	—1,21,000.
Fixed assets	21 lakhs
Profit at 8%	1.68 lakhs.
	40,000



# MAP OF INDIA SHOWING PRINCIPAL AIR ROUTES & AERODROMES

AS ON 1.7.50



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