

REPORT
OF THE
Deck Passenger Committee
1921

VOLUME I



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CALCUTTA

SUPERINTENDENT GOVERNMENT PRINTING, INDIA

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REPORT

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Deck Passenger Committee

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VOLUME I.

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Report of the Deck Passenger Committee 1921.

CHAPTER I.

INTRODUCTORY.

1. The question of improving the scale of accommodation provided for deck passengers on vessels to which the Native Passenger Ships Act, 1887 (X of 1887), applies was investigated in 1890 by a special Commission, which made a number of recommendations. These are reproduced in Appendix A below. The recommendations were generally accepted by the Government of India, and such of them as were considered to involve changes in the law were incorporated in the Merchant Shipping Bill, then under preparation, while those which necessitated changes in the rules were embodied in a revised draft of rules. The question of giving effect to these recommendations had, however, eventually to be dropped, as Government were advised that the Merchant Shipping Bill, and the revised draft of rules, were beyond the power of the Indian Legislature.

The question remained in abeyance until 1913, but has since on several occasions been before the Government of India in one or other of its aspects. In 1919 Government reconsidered the recommendations made by the Commission of 1890, and came to the conclusion that the principal recommendations with reference to the following points :

- (a) the amount of space to be prescribed for each passenger ;
- (b) the method to be adopted for the measurement of such space ;
- (c) the standard of ventilation to be provided ;
- (d) the standard of latrine accommodation to be provided ;
- (e) the standard of water supply to be provided ;
- (f) the conditions on which the carriage of passengers' luggage should be permitted ;
- (g) the conditions on which the carriage of cattle, sheep and goats should be permitted ;

could, in one form or another, be given effect to under the legislative powers of the Government of India. Maritime Local Governments were consulted, but their replies disclosed a considerable diversity of opinion, and it was decided that the most satisfactory way of reconciling these opinions would be to place the whole matter before a small Committee of experts, representative of official and non-official interests. The Resolution appointing the Committee was as follows :—

Resolution by the Government of India in the Department of Commerce, dated the 5th February 1921, No. 1088.

The Government of India have had under consideration the question of improving the standards of accommodation and sanitary conveniences at present provided for deck passengers under the Native Passenger Ships Act, 1887, and the rules made thereunder, in order to prevent the overcrowding of such passengers and to ensure their better health and comfort. They have consulted the Local Governments concerned in the matter, but in view of the considerable diversity of opinion disclosed by their replies and of the fact that the subject involves a number of technical and other questions which need careful scrutiny, the Government of India have decided to appoint a small Com-

mittee of experts, representative of official and unofficial interests, to investigate the whole question. The Committee will consist of the following gentlemen :

President.

Mr. J. P. Hardiman, C.B.E., I.C.S., Commissioner, Tenasserim Division, Burma.

Members.

Mr. James M. Ritchie, Representative, Bombay Chamber of Commerce.

Captain P. de. St. Croix, Representative, Bengal Chamber of Commerce.

Mr. B. S. Kamat, M.L.A.

Dr. G. L. Batra, D.P.H., Special Officer, Calcutta and Chittagong Ports.

Secretary.

Mr. E. Rogers, Superintendent, Department of Commerce, Government of India.

The Committee will assemble at Calcutta on the 15th February 1921, and will subsequently visit the ports of Bombay, Rangoon and possibly also Cocosnada. It will submit its report to the Government of India as soon thereafter as possible. The terms of reference to the Committee are attached. The Government of India trust that the Local Governments concerned will afford the Committee all the assistance which it may require, and (that) they will comply with any request for information and advice which it may address to them.

Terms of Reference.

To advise the Government of India what amendments, if any, it is desirable, in modern conditions, to make in the Native Passenger Ships Act, 1887, and the rules made thereunder, in order to prevent the overcrowding of deck passengers and to ensure their better health and comfort.

The Committee will be required in particular to consider and to make definite recommendations as to

- (1) the amount of space to be prescribed for each passenger and the method to be adopted for the measurement of such space ;
- (2) the standards of ventilation, latrine accommodation and water supply to be prescribed ;
- (3) the conditions on which the carriage of passengers' luggage and of cattle, sheep and goats should be permitted ; and
- (4) the structural alterations to ships involved in their recommendations.

The Committee should bear in mind the recommendations of the Native Passenger Ships Commission of 1890, and should carefully consider the expense to which shipping companies will be put and the decrease in the earning power of ships which may be involved in the acceptance of their recommendations, in order that the amendments they propose to the Act or rules may not result in making fares prohibitive to the classes who usually travel as deck passengers.

2. The Committee assembled at Calcutta on the 15th February. A questionnaire (Appendix B) was drawn up, and copies sent to the maritime Local Governments, who were requested to instruct expert witnesses (*e. g.*, Port Officers, Port Health Officers, Ship Surveyors, Protectors of Emigrants) to prepare replies. They were also requested to send copies of the questionnaire to any other officials, Associations, or individuals known to be interested in the matter. A Press Communiqué was issued in the chief English and Vernacular newspapers at each of the ports visited, inviting replies to the questionnaire. Persons replying to it were asked to present themselves for oral examination, and a narrative of the evidence given was recorded, and was thereafter verified by the person examined.

With the sanction of the Government of India, Karachi, Madras and Chittagong were subsequently included in the ports visited by the Committee. Their itinerary was :—

Calcutta	dep.	25th February 1921.
Karachi	arr.	1st March "
	dep.	9th " "
Bombay	arr.	11th " "
	dep.	21st " "
Madras	arr.	26th " "
	dep.	29th " "

(The Secretary was present in Madras from the 24th March.)

Coconada	arr.	30th March 1921.
"	dep.	1st April "
Rangoon	arr.	6th " "
	dep.	12th " "
Calcutta	arr.	14th " "
	dep.	19th " "
Chittagong	arr.	20th " "
	dep.	20th " "
Calcutta	arr.	21st "

Mr. Kamat's engagements with the Imperial Legislative Assembly made it impossible for him to join the Committee until the 19th February, and he had to leave it again on the 22nd *idem* and could not rejoin until the 14th March. Mr. Ritchie was unable to accompany the Committee from Bombay to Madras or Coconada, but rejoined them at Rangoon.

During our tour, in the course of which we travelled 6169 miles (3444 by steamer and 2725 by rail) we held 53 meetings, interrogated 62 witnesses, inspected 37 different steamers, and travelled ourselves on 5 steamers.

3. Except for purposes of comparison of the amenities required respectively by the Pilgrim Ships Act, 1895 (XIV of 1895), and by the Indian Emigration Act, 1908 (XVII of 1908), with those required under the Native Passenger Ships Act, 1887, the Committee are not concerned with the conditions of the pilgrim or emigrant traffic.

4. In this report, subject to the context, we speak of the various passenger Nomenclature of decks adopted in Report. decks as follows, beginning with the lowest :—

- Orlop, or lower between, deck.
- Between-deck.
- Main (or Shelter, or 1st Upper) deck.
- Shade (or 2nd Upper) deck.
- Bridge (or Saloon) deck.
- Boat Bridge deck.

Extent of the traffic.

5. The total number of passengers carried in India at the time when the Commission of 1890 reported was :—

	Short Voyages.	Long Voyages.	Total.
1888—89	9,68,022	33,870	10,01,892
1889—90	10,43,555	37,848	10,81,403

The details were as follows :—

SHORT VOYAGES.

To Ports within the Province.

From ports of	Number of passengers.		REMARKS.
	1888-89	1889-90	
Bengal	1,22,348	1,44,600*	*About 1,35,000 Calcutta to Alpa and Chandbally and <i>vice versa</i> ; said to be mostly pilgrims.
Madras	3,461	10,501	
Bombay	6,08,471	6,39,695	CHIEF RUNS :— (a) Bombay, Goa and Coast, and <i>vice versa</i> . (b) Bombay-Jaigad and Coast and <i>vice versa</i> . (c) Bombay-Cutch and Coast and <i>vice versa</i> . (d) Bombay-Karachi and Kathiawar and <i>vice versa</i> .
Burma	35,716	35,298	(i) Homeward runs apparently not included in figures. (ii) Chief outward run—Rangoon-Moulmein.
<i>To ports outside the Province.</i>			
Bengal	45,907	60,060	CHIEF RUNS :— (a) Calcutta to Burma ports, (38,982 in 1889-90), mainly Calcutta-Rangoon (27,138 in 1888-89). (b) Chittagong to Burma ports, mainly Chittagong to Akyab (11,093 in 1889-90) and Chittagong to Rangoon (8,762 in 1889-90).
Madras	71,860	70,656	CHIEF RUNS :— (i) To BURMA (a) Negapatam-Rangoon (15,240 in 1889-90). (b) Coconada to Rangoon (8,361) (c) Calingapatam to Rangoon. (d) Vizagapatam to Rangoon. (e) Madras to Rangoon. (ii) To CEYLON (a) Tuticorin to Colombo (17,901 in 1889-90). (iii) To BOMBAY (a) Mangalore to Bombay, (7,496 in 1889-90).
Bombay	10,257	11,444	CHIEF RUNS :— (a) Bombay to Basra and Persian Gulf (5,255 in 1889-90). (b) Bombay to Mangalore (4,316 in 1889-90).
Burma	70,002	71,301	CHIEF RUNS :— (a) Rangoon to Calcutta and Coast ports (32,979 in 1889-90). (b) Rangoon to Madras and Coast ports (22,985 in 1889-90). (c) Akyab to Chittagong (13,554 in 1889-90).
TOTAL	9,68,022	10,43,555	

LONG VOYAGES.

The passengers returned as carried on "Long" voyages in 1888-89 and 1889-90 numbered 33,870 and 37,848 respectively, *i.e.*, their numbers were very small in comparison with those going on what were, (and are, at present) in the legal sense "Short" voyages. Passengers to and from Aden were not apparently in all cases counted, but their inclusion would not have disturbed the proportion much. The chief runs were:—

- (a) Negapatam to Singapore (16,881 in 1889-90).
- (b) Rangoon to Negapatam and Madras Coast ports (15,427 in 1889-90).
This was practically the only "Long" voyage to an Indian port, and the figures represent a portion of the return flow of the passengers from Madras to Burma, the voyage to Burma counting as a "Short" voyage.
- (c) Karachi to Basra (1,494 in 1889-90).
- (d) Bombay to Mauritius (1,028 in 1889-90).
- (e) Bombay to Zanzibar (729 in 1889-90).
- (f) Bombay to Zanzibar and Aden (350 in 1889-90).
- (g) Bombay to Natal (438 in 1889-90).
- (h) Karachi to Aden (255 in 1889-90).

Owing to faster steamers having been placed on run (a), this has now become a "Short" voyage.

6. The figures for 1919-20 were as follows:—

<i>Short voyages.</i>	<i>Long voyages.</i>	<i>Total.</i>
2,070,921	36,646	2,107,567.

The details were as follows:—

SHORT VOYAGES.

<i>From ports of.</i>	<i>To Ports within the Province.</i>	<i>Number of passengers.</i>
Bengal	.	31,633
Burma	.	1,150
Bombay	.	1,411,488
Burma	.	34,723
	Total	1,478,994
	<i>To Ports outside the Province.</i>	
Bengal	.	153,840
Burma	.	169,779
Bihar & Orissa	.	27,742
Bombay & Sind	.	25,295
Madras	.	215,771
	Total	591,927
	GRAND TOTAL	2,070,921

LONG VOYAGE.

Only 36,646 passengers were carried from India on "Long" voyages during 1919-20. The chief runs were from:

- (a) Rangoon to Madras, 12,844.
- (b) Rangoon to Coconada, 3,424.
- (c) Calcutta to Penang, 1,764.
- (d) Calcutta to Singapore, 2,333.
- (e) Bombay to Delagoa Bay, 1,536.
- (f) Bombay to Mombassa, 4,011.
- (g) Bombay to Zanzibar, 1,807.

Important inferences from the foregoing figures are :—

- (i) that the conditions on "Short" voyages are the ones calling for study, since the "Long" voyage is now a rarity,
- (ii) that three-fourths of the "Short" voyages are from one port to another in the same province,
- (iii) that more than half the passengers carried in India are carried from one port to another of the Bombay Presidency,
- (iv) that the total volume of the trade has doubled within the past 30 years, in spite of the extension of railway facilities, and

the trade has not yet got back to pre-war figures. See Appendix C.

7. The Committee were impressed with the local variations in the conditions of the passenger traffic, the chief features of which, at the present time, are as follows :—

Note on the nature of the various trades.

A. Western India.

The chief lines are :—

- (a) Bombay to Karachi (direct and coasting services),
- (b) Bombay *via* Karachi to Persian Gulf ports,
- (c) Services within the Gulf of Cutch,
- (d) Bombay to Bhavnagar in the Gulf of Cambay,
- (e) Bombay to Mangalore, coasting,
- (f) Bombay to Panjim (Goa), coasting,
- (g) Bombay to Jaigad, coasting,
- (h) Bombay to Viziadrug, coasting.

The Bombay Steam Navigation Company, Ltd., serves all the above runs except (a) direct to Karachi and (b) the Persian Gulf run. The British India Steam Navigation Company, Ltd., serves runs (a) and (b) and also has a regular service between Bombay and East and South Africa. The Indian Co-operative Navigation and Trading Company, Ltd., runs a coasting service of purely passenger steamers south of Bombay to Panjim. The Mogul Line (an arrangement between the Bombay and Persia Steam Navigation Company, Limited, and the Arab Steamers, Ltd.) has regular services mostly between Bombay (or Karachi) and the Persian Gulf, Arabia and the Red Sea. There are other services carried on by owners with small fleets of one or two vessels.

Within the Persian Gulf the chief class of deck passengers are Arab traders, and the Arab deck passenger is little amenable to control. Between Karachi and Bombay there are two main classes of deck passengers, *viz.* :—

- (a) traders (often men of substance), and
- (b) artisans and manual labourers. Karachi depends to a large extent for its artisan and unskilled labour on deck passengers from Cutch and Kathiawar.

The great bulk of the deck passenger traffic in the Bombay Presidency is carried by the Bombay Steam Navigation Company. Their fleet consists of 24 small steamships, 12 of which carry passengers and cargo, 12 passengers only (exclusive of 5 creek steamers and 12 launches). The former serve all the runs north of Bombay, and one of the runs south—that to Mangalore *via* Goa and the coast ports. The latter serve all the runs South of Bombay except Mangalore. The steamers are specially designed for the trade. The features of the passenger and cargo steamers are short length (to allow for the conditions of sea room and anchorage met with) and two passenger decks (Between and Upper), the Between decks being used for cargo or passengers; of the passenger steamers proper, light draught, short length, a low freeboard, and two large Upper decks (with, in addition, a very small Between deck). The object of having two spacious Upper decks is to accommodate as many deck passengers as possible at 6' per passenger. On the lower of the two decks 4' has to be reserved for the Between deck passengers. Most of the traffic is through, from the terminus to the various intermediate or terminal

points, and *vice versa*, interportal traffic (the figures of which are given below) being relatively small, though still considerable. The trade has grown. Excluding such interportal trade, in 1919-20 the Company carried on all its sea runs, both south and north of Bombay, a total of 1,104,515 passengers in four classes, the deck passenger class numbering approximately 90 per cent. of the whole. These figures are exclusive of about half a million passengers, carried yearly under Inland Steam Vessels certificates, within the Bombay Harbour, at a space allowance which the Committee understand is 4' per passenger. The present day figure of passengers carried by this one Company exceeds the whole number of deck passengers carried in India in 1889-90, (10,81,403).

The Company's services south of Bombay, where all but one of the runs are for passengers only, are of particular importance, present some features which are not met with elsewhere, and present them on a large scale. These features are the numerous ports visited, the short distance between the ports, the large number of deck passengers carried, the frequent very heavy rushes, and the high average number of passengers per voyage. Some of the anchorages are difficult, but most of the intermediate ports afford excellent shelter and anchorage. Embarkation and disembarkation are troublesome, a feature which this trade shares with the Madras coast. The purely passenger services are shut off and the passenger and cargo services are curtailed in the monsoon season (officially lasting for 3½ months only, from the 26th May to the 31st August). On the lines that continue running several of the fair weather ports are omitted. There is no service to Mangalore in the foul season, and no service south of Mangalore at any time of the year.

In the fair weather, there is a daily service to Jaigad, another to Viziadrug, and a third to Panjim (Goa). The Jaigad run lasts 15 hours and 8 intermediate ports are called at; Viziadrug 20 hours, 7 ports; Panjim 21 hours, 7 ports. Bi-weekly services are from Bombay to Mangalore (65 hours, 9 ports), Karachi (70 hours, 5 ports), and Bhavnagar (39 hours, 3 ports). There is a weekly service to Gulf of Cutch ports (68 hours, 10 ports).

The greatest length of time the steamers are at sea on the various lines is as follows:—

<i>Bombay to</i>	<i>Longest section at sea</i>
(a) Karachi	Bombay and Verawal—19½ hours
(b) Gulf of Cutch	" " " 19½ "
(c) Bhavnagar	" and Diu 16 "
(d) Mangalore	" " Vengurla 20 "
(e) Goa	" " Ratnagiri 11 "
(f) Jaigad	" " Alibag 2 "
(g) Viziadrug	" " Harnai 8 "

On the down voyage, after the first port on the voyage has been called at, steamers touch at other ports every few hours, until the terminal port is reached, the only exception being on the Karachi line, where the run between the penultimate point, Cutch Mandvi, and Karachi takes about 19 hours. Similarly on the up voyage, after reaching the first port of the line concerned steamers call at other ports every few hours until the final port before Bombay is reached.

On the Mangalore line steamers call at 10 ports (between the first port of call and the terminal port) in about 38 hours, on the Karachi line, at 6 ports in 50 hours, on the Bhavnagar line, at 4 ports in about 20 hours, on the Jaigad line, at 9 ports in 12 hours, on the Viziadrug line, 8 at ports in 9½ hours, and on the Panjim line, at 8 ports in 11 hours. Appendix D, illustrates the Company's services.

The chief population carried on the important passenger lines, *viz.*, those South of Bombay, consists of labourers, who come up to Bombay for work in the mills, docks, etc. The effect of a radical enhancement of the average space allowance calls, therefore, for particular examination as to its effect on the industrial development of Bombay. An expert witness, controlling the labour of a large group of mills, expressed the fear that an increase in the fares might conceivably lead to a strike in the cotton mills. The steamers on these lines carry their maximum frequently, and a high average very frequently, as may

be seen from the figures given by the Company in their letter No. 1495/644, dated the 28th July 1916, to the Sanitary Commissioner to the Government of India :—

Goa Line.

"Satyavati" carried its full complement in 6 voyages out of 86.

Vizadrag Line.

"Omnavati" carried its full complement in 12 voyages out of 54.

"Shastri" " " " " " 8 " " 58.

"Rajapuri" " " " " " 5 " " 28.

Jaigad Line.

"Zuari" carried its full complement in 17 voyages out of 76.

"Kalinadi" " " " " " 15 " " 58.

"Fairy Queen" " " " " " 16 " " 48.

"Shastri" " " " " " 12 " " 46.

"Padmavati" " " " " " 11 " " 52.

"Omnavati" " " " " " 7 " " 32.

On the last 2 out of these 3 lines, the normal condition of affairs is one in which something approaching the maximum complement is carried. The figures for the 3 lines are given in the attached statement, which omits middling and low averages :—

Steamer.	Complement.	Average number of passengers.		Remarks.
		Outward voyage.	Inward voyage.	
		<i>Goa Line.</i>		
"Padmavati"	684	461		7 vessels on the run. The remaining 6 did not carry a high number of passengers.
		<i>Vizadrag Line.</i>		
"Fairy Queen"	684		515	All 8 vessels on the run show a high average number, principally on the inward run to Bombay.
"Padmavati"	684		498	
"Omnavati"	684	470	519	
"Zuari"	750		585	
"Shastri"	732		586	
"Kalinadi"	792		533	
"Rajapuri"	727		560	
"Rukmavati"	694	555	552	
		<i>Jaigad Line.</i>		
"Zuari"	750	618		All 8 vessels on the run show a high average number of passengers both outwards and inwards, but mostly outwards from Bombay.
"Kalinadi"	792	581		
"Fairy Queen"	684	563		
"Shastri"	732	592	475	
"Rajapuri"	727	594	555	
"Padmavati"	684	587	487	
"Omnavati"	684		490	
"Rukmavati"	694	524	514	

These steamers have two large passenger-carrying decks. The upper of these measure at 6', and the bulk of the lower at 6' also (since the between deck is small, and consequently the airing space to be reserved on this deck is small also). The condition of crowding is therefore great.

The Indian Co-operative Navigation and Trading Company, Limited, with a small fleet of two steamers, designed on the same lines as the Bombay Steam Navigation Company's passenger ships, runs daily to Panjim and 6 intermediate ports, and also carries a high average number of passengers per voyage. Both Companies have recently started an intermediate class of deck passenger accommodation, in which 7½' instead of 6' is provided for each passenger.

In 1889-90 the number of passengers carried in, or from, the Bombay Presidency was :—

" Short " voyages (a) To ports in the Province	6,39,695
(b) To ports outside the Province	11,444
	6,51,139
" Long " voyages (c) Approximately	4,500
	6,55,639

The figures of recent years, pre and post-war, have been :—

	Pre-war.		Post-war.	
	1912.	1913.	1919.	1920.
A. Between Bombay, Karachi and intermediate ports and <i>vice versa</i> , and Bombay, Bhavnagar and intermediate ports and <i>vice versa</i> .	1,39,626 (744 voy- ages.)	1,42,594	98,161	1,23,294
B. Interportal traffic between Northern ports.	71,361½ (654 voy- ages.)	73,214	34,932½	42,348½
C. Between Bombay-Jaigad and intermediate ports, and Bombay-Goa and Presidency ports North and South and <i>vice versa</i> .	10,48,709 (2,260 voyages.)	10,62,423	9,27,032½	9,90,524
D. Interportal traffic between Southern ports.	2,29,987 (2,260 voyages.)	2,45,900	2,16,908	2,34,578½
	14,89,683½	15,24,131	12,77,034	13,90,745

The Bombay traffic has more than doubled in the last thirty years.

B. Bay of Bengal, West.

South of Mangalore there is no regular service of passenger steamers. In the Gulf of Manaar, the British India Steam Navigation Company, Ltd., run a regular service between Tuticorin and Colombo. This service—approximately 12 hours—used to be a daily one, but on the opening of the Danushkodi-Taliamaner route—1½ hours—it became bi-weekly, and the bulk of the passenger traffic has now gone north to Danushkodi-Taliamaner. Some 20,000 passengers annually are carried from Tuticorin to Colombo and *vice versa*, and about 110,000 each way between Taliamaner and Danushkodi. The latter route carries the bulk of the plantation labour from Southern India to Ceylon, on steamers belonging to the South Indian Railway Company. The Ceylon Steamship Company, which maintains a regular service round Ceylon in either direction, touches at Paumban after, or before, Jaffna, but the passengers carried to or from India are few.

From Madras two regular services are in existence, one to the Straits Settlements, a round trip, as follows:—Madras, Pondicherry, Cuddalore, Karikal, Negapatam, Penang, Port Swettenham, Singapore and back to Madras,

the bulk of the passengers embarking at Negapatam; the other direct from Madras to Rangoon. There is a weekly steamer each way on both of these runs. The former service carries labourers, say about 90,000 per annum outwards, to the Straits Settlements and the Federated Malay States plantations, the number carried being pretty well divided between the 12 months. Features of this trade are the relatively high percentage of women and children carried, the fact that the Straits Settlements authorities regulate the trade, and that meals are included in the cost of the ticket. The Madras direct service carries about 30,000 each way in a year.

North of Madras there is a weekly service each way between the Coromandel ports and Rangoon, as follows:—Cocanada, Vizagapatam, Bimlipatam, Calingapatam, Baruva, Gopalpur, Rangoon and *vice versa*, say 50,000 each way in a year. There is an outward rush for the Burma harvest in November and December, and a backward rush after the harvest in March, April and May. The Burma runs carry also many industrial labourers. The British India Steam Navigation Company, Ltd., has a monopoly of the passenger traffic between Madras and Burma and Madras and the Straits Settlements.

There is no regular service north of Gopalpur until the Calcutta-Chandbally run is reached. From Calcutta to Chandbally (in the Province of Bihar and Orissa) there is a bi-weekly service maintained by a steamer of the India General Navigation and Railway Company, Ltd. The run lasts 20 hours, of which $4\frac{1}{2}$ hours are at sea, and the remainder in the Hooghly, the sea portion of the voyage being usually traversed after dark. The ship is in principle of the same design as the purely passenger steamers of the Bombay Steam Navigation Company, and has two passenger carrying decks, *viz.*, a Shelter deck with opening shutters, and, above that, a Shade deck. Both count as Upper decks and carry passengers at 6' superficial space, without provision of airing space.

The chief regular passenger runs from Calcutta are:—

- (a) To Rangoon direct.
- (b) To Singapore *via* Penang.

Both of the above services are maintained by the British India Steam Navigation Co. Messrs. the Indo-China Steam Navigation Co. also run a service to Singapore.

- (c) To Chandbally (see above).

Although the Madras-Straits Settlements and Coromandel-Rangoon runs include several coasting ports in Madras, there is very little interport traffic, this no doubt being mainly due to the existence of a railway along the coast. The passenger traffic is, therefore, in Madras, almost entirely extra-provincial, offering in this respect a contrast to Bombay. As in Bombay, the difficulties of embarkation and disembarkation are considerable, the only ports where steamers can come alongside being Danushkodi and Madras. Everywhere else steamers anchor in an open roadstead, sometimes as much as 5 miles off shore, and the passengers are embarked or disembarked in boats: at Coconada and Cuddalore in large cargo boats, at the other parts in *masula*, or surf boats, specially designed to withstand heavy bumping in the surf. In the open roadsteads passengers are embarked or disembarked by means of stages, let down by ropes from the ship's deck, so as to lie above the cargo or *masula* boat. The ship's lascars, standing on the stages, haul the passengers up from the boat as it rises on a wave.

A feature of the trade on the runs from Madras is the use of sleeping platforms in the Between decks. These were, almost without exception, stated by witnesses to be popular with the passengers and to add materially to their comfort. The 5' rule, under which deck passengers can be carried in the Between decks at a space allowance of 5 superficial feet each, subject to the condition that the whole of the Upper deck, or Upper decks if there are more than one, is to be left vacant for them, as airing space, is peculiar to the runs between Madras and Burma. It is discussed separately below. A special type of passenger steamer has been devised for the traffic in the Bay of Bengal. This has three passenger-carrying decks, a large Between deck, a large, but

smaller, Shelter deck, ventilation in which is mainly afforded by means of large opening shutters, and a large, but smaller, Shade or 2nd Upper deck. We have taken this as one of the main types of steamers, for the purpose of calculating the effect of the new space allowances suggested.

According to an existing rule, the voyage from Burma to Madras ports during the Foul season counts as a "Long" voyage, and passengers must be provided with additional space allowance accordingly, whatever the scheduled duration of the voyage may be. On the other hand, all other voyages between Madras and Burma count as "Short" voyages, whatever the scheduled duration of the run. When the Act of 1887 was passed, the duration of voyages from Burma to Madras was generally, in the monsoon, over 120 hours. The introduction of faster steamers has altered this, and all the runs are now less than 120 hours. The distances and durations are approximately; Gopalpur-Rangoon, 755 miles, 3-days; Rangoon-Madras, 1,020 miles, 3½ days; Negapatam-Penang, 1,270 miles, 4½ days. Long voyages from Madras ports are practically non-existent.

The Act has been applied in Madras to steamers carrying more than 30, and to sailing ships carrying more than 15, passengers from Madras to the Straits Settlements or Ceylon. (*Vide* Notifications by the Government of Madras, Nos. 308 and 275, dated respectively, the 7th August 1888 and 4th July 1904.)

The chief figures in the traffic from Madras ports in 1920 were:—

From Tuticorin to Colombo	18,982	
„ Colombo to Tuticorin	21,666	
„ Danushkhodi to Taliamaner	1,29,591	
„ Taliamaner to Danushkhodi	1,10,173	
„ Negapatam to Straits Settlements	62,617	
„ Straits Settlements to Negapatam	8,220	
„ Madras to Straits Settlements	47,690*	*about 32 per cent. females and children.
„ Straits Settlements to Madras	37,160†	†about 25 per cent. females and children.
„ Madras to Burma	36,219‡	‡about 28 per cent. females and children.

Coromandel traffic—

From Gopalpur to Rangoon	15,456
„ Baruva to „	9,245
„ Calingapatam to „	5,155
„ Bimlipatam to „	1,767
„ Vizagapatam to „	11,154
„ Coconada to „	17,168
Total	59,945

The traffic between Madras (west coast) ports and Bombay numbered about 14,000, the majority of passengers going through to Bombay.

In 1891 the passengers carried on the Chandbally run were:—

Calcutta-Chandbally	66,952
Chandbally-Calcutta	68,259

The figures in 1919-20 were:—

Calcutta-Chandbally	31,150
Chandbally-Calcutta	30,669

The decline is no doubt due to improvements in railway communication inside the coast line.

The chief figures in the traffic from Calcutta in 1919-20 were:—

Calcutta to Rangoon	85,199	} No inward figures are available.
„ „ Port Blair	2,316	
„ „ Penang	1,764	
„ „ Singapore	2,333	

C. Bay of Bengal, East.

There is no regular service by sea at present between Calcutta and Chittagong. From Chittagong the British India Company runs a regular weekly service each way—Chittagong—Akyab—Sandoway—Rangoon, with additional steamers, as inducement offers; and also an occasional service between Chittagong and Akyab (16 hours). The passengers to and from Akyab by all lines number about 11,000 yearly. To and from Rangoon about 12,000 are carried. The Retriever Flotilla of 3 ships runs three times a week each way between Chittagong, Cox's Bazar and Maungdaw, the journey taking 7 hours and being completed during daylight—Passengers by this line number about 10,000 to Cox's Bazar, and 10,000 to Maungdaw. Figures for the reverse journeys are not available. The India General Railways and Navigation Company, Limited, run a regular service from Chittagong to Barisal, on steamers which carry both a (Bengal) Inland Steam Vessels certificate and a Native Passenger Ships certificate. The latter is needed owing to the fact that a portion of the journey is carried out at sea. The number carried to Sanua on this run is about 10,000 per annum. The Asiatic Steam Navigation Company ran a bi-weekly service between Rangoon and Chittagong before the War, but the regular service has now been discontinued. Not much luggage is taken to Burma on the outward runs from Chittagong: more, but still not much, is brought back. The services from Rangoon to Madras ports, and Rangoon to Calcutta have been described under the heading *Bay of Bengal, West* above. Other regular services to places south of Rangoon are:—

- (a) A weekly service, maintained by the British India Company between Rangoon, Tavoy and Mergui.
- (b) A coasting service, maintained by the same Company, in the Mergui Archipelago to small ports north and south of Mergui.
- (c) There is a service in the waters of the Archipelago maintained by a small fleet of steamers, the owners of which are an Indian firm.
- (d) The Eastern Shipping Company, registered in the Straits Settlements, maintain a fortnightly service between Penang, Mergui, Tavoy and Moulmein.

In some of the minor ports in Burma the anchorage is in an open roadstead, but the coasting passenger traffic is small, and difficulties of disembarkation have not attained the dimensions of Madras or Bombay. Better policing arrangements for the *sampans*, or harbour boats, are said to be wanted in Chittagong.

The chief figures from Chittagong were as follows:—

Chittagong to Sundip	6,403	} No inwards figures are available.
" " Hatiya	1,309	
" " Cox's Bazar	10,364	
" " Sanua	10,752	
" " Akyab	11,649	
" " Maungdaw	10,231	} No inwards figures are available.
" " Rangoon	11,789	

The main figures in the passenger traffic from Burma ports in 1920 were:—

<i>Short Voyages.</i>	
Rangoon to Tavoy	Not stated.
Tavoy " Rangoon	11,656
Rangoon " Mergui	11,264
Mergui " Rangoon	6,681
Tavoy " Mergui	3,404
Rangoon " Madras	14,044
" " Coconada	21,828
" " Barua	2,540
" " Calcutta	101,227
" " Chittagong	15,316
Akyab " "	10,480
" " Rangoon	2,169
<i>Long Voyages.</i>	
Rangoon to Coconada	3,424
" " Madras	12,844
" " Calcutta	1,183
" " Amoy	1,662

CHAPTER II.

8. The evidence on nearly all the technical points was very conflicting, but Evidence adduced before the Committee. there was general agreement that conditions require to be improved. The bulk of the passengers come from classes who appear to be content with things as they are. There is no doubt that what the labouring classes, who form 90 per cent. of the deck passengers, want is quick transit and a cheap fare. The need for amelioration of conditions was pressed strongly by Government officers, actuated by humanitarian motives, and by witnesses coming from the better educated of the deck passenger class, similarly actuated.

9. The Commission of 1890 had certain experiments made, the results of Experiments in accommodation of passengers within a given space. of which are given at pages lxii, lxiii and lxix of their Proceedings, as follows:—

I

A letter received from Mr. H. Graham Taylor, Assistant Commissioner at the Andamans, who was in charge of a batch of convicts lately despatched to Port Blair in the S. S. "Kohinur" giving information respecting certain experiments carried out on board that vessel during the voyage in regard to space required for convicts on boardship.

"In a division measuring $27' 9'' \times 18' = 499\frac{1}{2}$ sq. ft., we first packed 83 men, *i.e.*, allowing $6' \times 1'$ or $3' \times 2'$ per man, and the result showed very much too much overcrowding; the men in some places overlapping each other, and all lying down on their sides.

"In the same spaces ($499\frac{1}{2}$ sq. ft.) we then arranged 55 men, *i.e.*, allowing $6' \times 1\frac{1}{2}'$ or $3' \times 3'$ per man.

"They lay in three rows, close up to each other on their backs; 18 men in two rows and 19 in the other without overlapping. I consider this allowance ($6' \times 1\frac{1}{2}'$) sufficient. When it is absolutely necessary to send a larger number of convicts than usual in fair weather, with open ports, the allowance should certainly never be less than $6' \times 1\frac{1}{2}'$ per man.

With the allowance of $6' \times 2'$ per man, they are, of course, as comfortable as can be expected under the circumstances."

"In considering this opinion it should be remembered that the convicts experimented with were fettered and had handcuffs attached to their wrists."

II

"The Commission first proceeded to No. 3 compartment on the 'tween decks and there measured off a space of 772 superficial feet, representing 19 feet in length from the fore end of the compartment with the full width of the deck (40 feet, 8 inches). The accommodation was for 128 passengers, at 6 superficial feet per adult, but as the projections, etc., came to 3.8 feet, one adult was removed, thus making a total of 127 adults. These passengers were asked to lie down with the ordinary baggage they were travelling with, which baggage in the opinion of the Commission, they could not be expected to part with for stowage in the hold. In the opinion of the Commission, this space did not admit of each passenger lying down although they were arranged so as to occupy the least possible space.

"From 127 were removed 43 adults, as representing the one-third, and the remaining 84 were then made to lie down in the 772 superficial feet, thus giving each passenger 9.2 superficial feet. In this space, the Commission found that the passengers, with their personal baggage as before, could lie down comfortably without being huddled. In this instance the Commission came to the conclusion that the number of passengers could not be materially increased within the above space, without interfering with the comfort and convenience of the passengers."

10. We have not considered it necessary to conduct further experiments, and the President is prepared to accept the Commission's conclusion that the

least average space in which a deck passenger can lie down, with the minimum necessary personal effects, is 9·2 sq. ft. Mr. Kamat and Dr. Batra consider that the standard of personal comfort having risen since the 1890 Commission reported, as also the quantity of luggage usually carried by the average deck passenger, the least average space required by a deck passenger, with the minimum of personal effects, should be more than 9·2 sq. ft.; and they think 11' ought to be the datum line, on the ground that a man's average height is 5' 6" and the minimum breadth necessary for him to lie down in is 2', including some space for luggage. On the other hand, Mr. Ritchie and Captain Ste. Croix observe that there are certain items of deck space, *e.g.*, hatches, passages, etc., which although not measured for deck passengers are in practice available for them, and in their opinion, the least average space with, as before, the minimum of personal effects, is less than 9·2 sq. ft., and they cannot accept 9·2 sq. ft. as a basis of calculation.

The President, Mr. Kamat and Dr. Batra consider that a stage of congestion is approaching when a typical (between deck-upper deck) steamer is carrying its full complement at the $\frac{6' \text{ occupation space} + 4' \text{ airing space}}{6' \text{ occupation space}} : \frac{\text{between deck}}{\text{upper deck}}$ rate, the all-round average of which works out to 9·8 feet and that great overcrowding exists when a steamer of the Bombay passenger type is carrying its full complement (all round average, 6·6). Mr. Ritchie points out that the complement is carried, at the outside, for 12 hours, either by day or night. The President accepts it as a general principle that on voyages lasting through the whole or a material portion of a night, 9·2 sq. ft. at least, and, if possible, more should be provided for each deck passenger. The views of the members representing the Chambers of Commerce are contained in dissenting minutes.

Further, our inspections of vessels have convinced us that 9·8 sq. ft., as at present provided on a ship of the Between deck-Upper deck type referred to, with the ordinary proportions of clear space in the Between and Upper decks, does in actual practice, in many services, mean overcrowding, owing to the amount of luggage carried. Although we recommend that owners should take all steps possible to segregate heavy luggage, we think it necessary to accept the carriage of luggage in passenger space as inevitable, and to take this fact into account when fixing the average space allowance. The factor, however, does not arise for consideration in the case of the heavy, purely passenger, runs mostly on the Bombay coast, on which the passengers carry relatively little luggage, *vide* paragraphs 19 and 20 below.

11. Expert witnesses often recommended a definite increased figure of average space allowance, but in few cases realized what the actual effect on the carrying capacity of a typical steamer would be, and suggestions intended to reduce the maximum number of passengers carriable would in practice often have had exactly the opposite effect. It is, indeed, essential, before recommending a particular figure, to work out its effect on a typical ship or typical ships.

The necessity of applying such a test presupposes the discovery of what a typical ship is, *i.e.*, what the approximate proportions of clear space on the various passenger-carrying decks are. Probably no two ships agree exactly in the proportion of clear space provided on the Upper deck or decks to that provided on the Between deck or decks, but the Committee consider that steamers plying in India can be divided broadly into four main types:—

- (A) a type with a large Between deck and a large, but smaller Upper deck. The Upper has to carry the latrines, washing places, galleys and sometimes saloons or other structures, and its clear space is curtailed in consequence. This type is common in all Indian waters, and is designed to carry passengers or cargo indifferently in the Between deck.

Expert witnesses agreed generally that the Committee's figure of relative open space

- (1) 1,000' in the Between deck, and

(2) 700' in the Upper deck
was correct for this type.

(B) A type with small Between decks, and two large Upper decks. This is the usual type on the heavy, purely passenger trade south of Bombay, known as the "Ferry" Steamers. Neither of the Upper decks is suitable for cargo. No cargo is carried on these steamers. These steamers, many of which the Committee visited, and on one of which they travelled from Bombay to Goa, carry passengers on the uppermost deck at 6' [Fair season], on the bulk of the middle of the three decks at 6' also, not seldom carry the full complement, normally carry a number approaching the complement, and are undoubtedly much overcrowded. These steamers feed the Bombay mills, and how to deal with them was the most difficult question that presented itself to the Committee. For this type we assume a relative proportion of clear space in the various decks as follows:—

- (a) 300' in the Between deck;
- (b) 1,000' in the Main (or 1st Upper) deck;
- (c) 1,000' in the Shade (or 2nd Upper) deck.

(C) A type, chiefly occurring in the Bay of Bengal services of the British India Steam Navigation Company, which has three large carrying decks, the two uppermost of which count as Upper decks, for the purpose of carrying passengers at the rate of 6' (Fair season) or 9' (Foul season) on a "Short" voyage. In principle the type is the same as the last, but the relative proportions of clear space are different. A fair division of the clear space on this type would be:—

- (a) 1,000' in the Between deck;
- (b) 400' in the Main (or Shelter or 1st Upper) deck;
- (c) 400' in the Shade (or 2nd Upper) deck.

The first Upper deck is encumbered with the crew's quarters, the deck above that with miscellaneous structures.

The advent of this type of steamer led to discussion whether the middle of the 3 decks, in effect a Main deck covered by a roof and closed at the sides, should count as an Upper between deck, or as an Upper deck proper. If the latter, the owners could carry passengers on it at 6' each (Fair season, "Short" voyage) and need provide no airing space for them on the deck above, the uppermost of the three: if the former, for every passenger carried on it, 4' airing space would have to be reserved on the uppermost deck. It was decided that the middle deck was an Upper, not a Between deck, and could carry at 6'. The Committee agree that this decision was correct, having regard to the fact that at the side there are large ports or shutters that can be opened for purposes of ventilation.

(D) A fourth class of steamer is the type employed by the Bombay Steam Navigation Company on other than its daily runs, *viz.*, on the passenger and cargo runs to Karachi, within the Gulf of Cutch, to Bhavnagar and to Mangalore. In this type there are two main passenger-carrying decks, and in addition a poop deck. The length is limited to about 275 feet, owing to restrictions of anchorage and turning space.

The proportionate space may be expressed as:—

(a) In the Between deck	1,000'
(b) in the Upper deck	900'
(c) in the Poop deck	300'

12. As an instance of the advisability of testing any new figure recommended, by applying it to a typical case, it may be noted that several of the space allowances. Recommendations of space averages recommended by the 1890 the 1890 Commission. Commission, with the express object of

reducing the number of passengers carriageable, would in practice have resulted in enabling more, not fewer, passengers to be carried :—

Example 1.

Recommendations 2 (c) and 11 (c). "Short" voyage, Fair season.

Typical steamer ; passenger and cargo type—universal.		Carries at present passengers at $\frac{6' + 4'}{6'}$.	Would carry according to Commission's recommendation passengers at 9'.
(a) Between deck	1,000'	166	
(b) Upper "	700'	6	
Total	1,700'	172	$\frac{1,700}{9} = 188$
	Increase	16 in every 1,700'	

Example 2.

Recommendations 2 (c), 13 and 8. "Short" voyage, Foul season.

Typical steamer ; passenger and cargo type—universal.		Carries at present passengers at $\frac{9' + 4'}{9'}$.	Would carry according to Commission's recommendation passengers at 7'.
(a) Between deck	1,000'	111	142
(b) Upper "	700'	28	..
Total	1,700'	139	142
	Increase	3 in every 1,700'	

The above are important classes of voyage, including runs by which considerable numbers travel, and in each case the Commission's recommendation—if effect had been given to it—would have failed to carry out their intention.

13. The object of the present enquiry being to ascertain what reasonable comforts should be provided for deck passengers, not how to secure their safety below is materially different from that proposed by the Life Saving Appliances Committee, and we do not consider that their classification (which is shown in the margin so far as it concerns Native Passenger Ships), is suitable for the purpose of fixing average space allowances or other amenities. The Committee observe that the Board of Trade recognises twelve classes of voyage for the purpose of Life Saving Appliances, but 5 only for the fixation of space allowances, *i.e.*, it treats the two questions independently.

- Unsuitability, for the present enquiry, of classification of voyages adopted by Life Saving Appliances Committee.
- at sea, our classification of voyages
- (1) Indian Foreign Trade voyages to countries parties to the International Convention for the Safety of Life at sea.
 - (2) Indian Foreign Trade.
 - (a) Emigrant voyages ;
 - (b) Native Passenger Ship voyages, other than to the Red Sea or Persian Gulf.
 - (3) Indian Foreign Trade ;
 - (a) Pilgrim Ships ;
 - (b) Native Passenger Ship voyages to Red Sea or Persian Gulf.
 - (4) Indian Home Trade (General).
 - (5) Indian Home Trade (Coasting).
 - (6) Indian Home Trade, Local.
 - (a) at sea.
 - (b) in partially smooth waters.
 - (7) Sailing vessels.

Classification of voyages.

- (a) prescribed under the Native Passenger Ships Act ;
- (b) prescribed under the (British) Merchant Shipping Act, 1894 ; and
- (c) recommended by the Native Passenger Ships Commission of 1890.

Here again no exact parallel can be drawn between the classes of voyage within the three different categories, but the Table is arranged so as to show the broadly corresponding classes in juxtaposition, and the classes within each category are arranged in ascending order of space allowance, *i.e.*, the shortest voyage, with the smallest space allowance, appears at the head of the Table, and the longest at the foot.

14. The attached Table compares the classes of voyage and space allowances :—

(a) Space allowances. Deck passengers. Native Passenger Ships Act, 1887.				(b) Space allowances for 3rd class (steerage, deck) non-emigrant passengers under the (British) Merchant Shipping Act, (Board of Trade Instructions as to the Survey of Passenger Accommodation, 1912).				(c) Space allowances for deck passengers recommended by the Native Passenger Ships Commission, 1891 (Recommendations 2, 11, 13).			
Classification of voyage.		Square feet.	Remarks.	Classification of voyage.		Square feet.	Remarks.	Classification of voyage.		Square feet.	Remarks.
§ 18 Fair season, short voyage.	(a) Each Upper deck passenger.	6	.....	Partially smooth water (Instruction 33).	(a) On main deck . . .	6	Reduction in the number of passengers allowed is made in winter months.				
	(b) Each Between decks passenger.	10	6 in the Between decks and 4 in the Upper deck.	.....	(b) On top of saloons on main deck.	9					
					(c) Beneath main deck . .	3					
§ 18 Foul season, short voyage.	(a) Each Upper deck passenger.	9	.....	Coasting excursions (day light and summer season) (Instruction 31).	Same as Home Trade (b) below but maximum number of passengers may be increased, see Remarks column (Instruction 33).	9	(a) Total number of passengers not limited to gross tonnage (Instruction 32). (b) Some saloon top space may be measured for deck passengers (Instruction 33).	Excursions (day light and fair season only).	For every passenger.	6	On any deck exposed or not.
	(b) Each Between decks passenger.	18	6 in the Between decks and 4 in the Upper deck.	Home Trade (Instruction 16).	(a) If in compartments, 73 cubic feet per berth, e.g., if height of deck 6 feet (Instruction 20). (b) If on deck (Instruction 23).	12 9	(a) Decks measured (Instructions 31, 22)— (i) Main; (ii) the deck beneath the Main; (iii) quarter deck. (iv) in certain cases a portion or the whole of promenade, poop, or bridge decks. (b) Total number of passengers in no case to exceed gross tonnage; and in certain cases to be a specified figure less than the gross tonnage (Instruction 25). (c) Total number of 2nd class and steerage (deck) passengers not to exceed 6 times the number for whom sheltered space provided, viz., 6 × shelter space in square feet + 9. (Instruction 24).	Shelter port (12 or 16 hours). Fair season. Shelter port, Foul season. Short voyage (limit 120 hours between ports). Fair season. Short voyage. Foul season.	Do. Do. Do. Do.	7 7 9 7	Do. Of permanent shelter. On any deck exposed or not. Of permanent shelter.
§ 21 and Notification by the Government of India in the Department of Finance and Commerce, No. 1358, dated the 14th March 1889. Fair and Foul seasons, Long voyage.	For every passenger .	15	9 in the Between decks and 6 in the Upper deck.	Foreign Trade (Instruction 13).	For every passenger 73 cubic feet, e.g., if decks 8' apart.	12	(a) Exposed surfaces not measured for passengers (Instruction 14). (b) Total number of passengers not limited to gross tonnage (Instruction 25).	Fair and Foul season, Long voyage (over 120 hours).	Do.	15	9' in the Between deck and 6' in the Upper deck.

N.B.—(i) Orlop deck rule not reproduced, ships with orlop decks being comparatively few.
(ii) The Board of Trade Instructions also contain regulations as to space allowances for voyages in Rivers or Smooth waters. As voyages under the Native Passenger Ships Act are wholly or partly made at sea, these regulations have no analogy with Indian conditions and are not reproduced.

The evidence of expert witnesses as to the suitability to Indian conditions of any of the 3 schemes of classification is conflicting. As regards the Board of Trade classification, the Committee agree that no analogy can be drawn between voyages in European and voyages in Indian waters. We are however agreed that the Board of Trade list is superior to the existing Indian classification in one important respect, *viz.*, elasticity. The existing Indian classes are nominally 3 in number (Fair season, Short; Foul season, Short; Fair and Foul seasons, Long), but are practically two, since the Long Voyage is a rarity. The Board of Trade has four sea-going classes (Partially smooth waters, Excursion, Home Trade, Foreign Trade). We think it important that the classification adopted for India should suit the main existing trades, and consider that these call for the separation of more than 2 classes of voyage. A closer sub-division is particularly needed, since we recommend raising the space allowances generally, and this may compel owners to add to their fleets in order to carry the existing traffic, and the effect of this may be an increase in fares. If, in some special cases, we can allow owners to carry passengers at space allowances not much greater than at present, there will be less inducement to them to raise fares.

15. There was pretty general agreement among witnesses that more space was needed on a "Long" than on a "Short" voyage, and in the Foul than in the Fair season. With the latter opinion we agree. As regards the former, the fact that there are hardly any "Long" voyages at present suggests either that the "Long" and "Short" voyages are at present differentiated wrongly, or that the "Long" voyage class is not wanted at all. A majority of the Committee think that the limit should be reduced to 72 hours from 120 hours (for the longest section of a voyage). Mr. Ritchie and Captain Ste. Croix have expressed their views in a minute of dissent.

16. The existing law contemplates that each passenger in the Between deck, in addition to the same amount of actual occupation space as is prescribed for the passenger on an Upper deck, shall have reserved for him certain airing space on the Upper deck:—

Fair Season, Short voyage; 6' occupation space and 4' airing space.

Foul Season, Short voyage; 9' occupation space and 4' airing space.

For a "Long" voyage, whether in the Foul or Fair Season, every passenger carried has to be provided with 6' airing space in addition to 9' occupation space.

Most of the expert witnesses recommended the abolition of airing space, and the substitution of a flat rate of space allowance for the Between deck passenger, pointing out that Between decks are now never less than 6' in height, and are often 8' *i.e.*, that they are much better ventilated than was the case in 1887, when the present Act was passed: and that the rule is practically inoperative, since owners do not assign particular passengers to the Between decks and the remainder to the Upper decks, or mark off on the Upper deck a special airing space for the Between deck passengers. What they do is to open as many compartments of the ship as will accommodate the total number of passengers expected, and allow them to settle down in the Between or the Upper decks as they please, or as they find room. And we were informed that the Between deck passengers actually spend very little of the voyage on the Upper deck. On the other hand our observations have satisfied us that the airing space is used by the Between deck passengers, if only for short spells at a time, and is appreciated by them. We agree that it would make greatly for simplicity to have a flat rate of space allowance for each deck, without the provision of additional airing space allowance for the Between deck passengers. In particular, the present method of calculation is not understood by the public (nor indeed, always, by the experts), and consequently does not lend itself to easy comprehension. A method of calculation which the public can understand ought, if possible, to be adopted. At the same time a real advantage of the prescription of airing space for the Between deck passengers is that it precludes owners from shutting out Between deck passengers altogether from the exposed deck. But the risk of owners doing this in practice, remote, since they

will continue to carry passengers on the Upper decks, and are not likely to enquire whether any passenger found thereon is an Upper or a Between deck passenger, any more than they do at present. Captain Ste. Croix and Mr. Ritchie dissenting, we think, therefore, that a flat rate for all decks may be accepted. There should however, be a provision in the Act that, subject to the requirements of navigation, all exposed decks not reserved for higher classes, or occupied by passengers, shall be made available to Between deck passengers, as airing space. And if the Inspecting staff recommended in a later paragraph should find the Between deck passengers kept out of the exposed deck, the position will need to be reconsidered.

17. We consider that the 1890 Commission were right in recommending an increase in the number of classes of voyage. They recommended six classes as follows :—

Classes of voyage now recommended.

- (1) Excursions.
- (2) Shelter port, Fair season.
- (3) Shelter port, Foul „
- (4) Short voyage, Fair season.
- (5) Short voyage, Foul „
- (6) Long voyage, Fair and Foul seasons.

The majority of the present Committee suggest 6 classes as follows :—

- (1) Short voyage, specified runs.
Festival seasons. Fair season only, limit between terminal points, 24 hours.
- (2) Short voyage, specified runs.
Non-festival seasons. Fair season only, limit between terminal points, 24 hours.
- (3) Short voyage, non-specified runs, Bombay coast only : steamers of 275' or under in length ; limit between terminal points, 72 hours. Fair season.
- (4) Short voyage, non-specified runs, longest section 72 hours, other steamers ; Fair season.
- (5) Short voyage, non-specified runs, longest section 72 hours ; Foul season.
- (6) Long voyage, Fair and Foul seasons, longest section over 72 hours.

The first 3 classes are meant to meet the special conditions of the traffic on the Bombay coast.

18. Nearly all the expert witnesses varied as to what space allowances should be recommended, whilst almost all agreed that the allowances should be greater than at present. Whilst there is no difference of opinion as to the need of increasing the space allowances, the members of the Committee differ as to the degree of increase that should be recommended, and paragraphs 19-24 and 33 represent the views of the President, Mr. Kamat, and Dr. Batra. The allowances proposed in these paragraphs are materially higher than those deemed suitable by Mr. Ritchie and Captain Ste. Croix, *vide* their separate Notes. These the majority of the Committee consider might be raised, without much risk of a great increase in fares.

19. *Specified runs & Festival seasons.*—This is recommended in order to meet the case particularly of the purely passenger traffic (mostly of millworkers) between Bombay and the coast ports South, during festival seasons. It is at present carried in steamers with 2 large Upper decks, paragraph 11 (B) above. We recommend that the Local Government should be given power to allow steamers to carry passengers at the rate of 9' (instead of at $\frac{6'+4'}{6'}$ as at present)

Description of the classes and space allowances recommended.
Specified runs.
Excursion runs.

during holiday seasons, a special certificate being obtained on each occasion, and the concession being limited to voyages in the Fair season, of 24 hours duration or less. We understand that the traffic at the time of the *Holi* and *Dewali* festivals is considerable, and the passengers concerned would willingly put up with crowding.

Other Local Governments may be given power to deal with similar cases, if any, in their jurisdictions. The reduction would amount to 27 per cent. for a steamer of the typical Bombay kind, having clear space on the various decks in the following proportions:—

- (a) Between decks 300' ; carries at present 50 ; would carry 33.
 - (b) Main (or 1st Upper) deck, 1,000' ; carries at present 133 ; would carry 111.
 - (c) Shade (or 2nd Upper) deck, 1,000 ; carries at present 166 ; would carry 111.
- Total 2,300' : carries at present 349 : would carry 255.

A reduction, for every 2,300' of deck space, of 94 passengers, or 27 per cent. The average space would become 9 feet against 6.6 feet at present.

20. *Specified runs: Non-festival seasons: 24 hours.*—We recommend a special category of runs, to be scheduled (as in the *Excursion* voyages in the Board of Trade *Instructions as to Survey, etc.*), in order to meet the case of the heavy fine weather passenger traffic on daily services from Bombay to ports Southwards in non-festival seasons. We think that the voyage should be limited to 24 hours between terminal points, that the concession should be for the Fair season only, and the President considers that the owners should be allowed to carry at the rate of 9.5' on any deck, as against the existing rate of $\frac{6'+4'}{6'}$. In a typical steamer of the purely passenger type (as above) in every 2,300 feet of clear deck space, 241 passengers would be carried against 349 at present:—

	Carries at present.	Would carry.
(a) Between deck 300'	50	31
(b) Main (or 1st Upper) deck 1,000'	133	105
(c) Shade (or 2nd Upper) deck 1,000'	166	105
Total 2,300'	349	241

a reduction of 108 out of 349 passengers in every 2,300 square feet, or 31 per cent. The average space all round would become 9.5' against 6.6'. In an ideal condition of affairs the average space allowance ought to be greater. A figure as low as 9.5' is recommended only on a careful consideration of the magnitude of the traffic, the benefit it brings to the deck passengers themselves in the form of the high wages earned in Bombay, the need of a large labour force for the industrial development of Bombay, and the likelihood that passengers might be shut out altogether should a much enhanced space average be enforced. Taking into consideration the special circumstances of the Bombay traffic, Mr. Kamat and Dr. Batra would not go below 10' for this class of voyage, *vide* paragraph 10, and separate Note attached.

Among the chief runs that will fall to be specified under the 9.5' classification are the following:—

Bombay Steam Navigation Company, Limited.

Bombay daily to Jaigad, 8 intermediate ports, 15 hours.

"	"	"	Viziadrug	7	"	"	20	"
"	"	"	Panjim	6	"	"	24	"

Indian Co-operative Navigation and Trading Company, Limited.

Bombay daily to Panjim and 6 intermediate ports, 19 hours.

There was a general consensus of expert opinion that the seasons are more clearly marked on the western coast of India than in the Bay of Bengal, and that it is not necessary on that coast to provide sufficient space in permanent shelter for every passenger on an exposed deck in the Fair season, to meet the event of a cyclone. We see, therefore, no objection, so far as Fair season voyages are concerned, to the Bombay type of purely passenger steamer (paragraph 10 (B) above), though it can accommodate very few passengers in the small Between decks. For steamers of the other main types (large Between, large Upper deck or decks) the allowances we suggest are large enough to provide for accommodating all passengers below, in case of need.

21. *Short voyage : non-specified runs, Bombay coast only, steamers of 275' or under, in length : limit between terminal points 72 hours : Fair season.*

This type, paragraph 10 (D) above, carries as a maximum at present at $\frac{6' + 4'}{8'}$, for a Fair season "Short" voyage, which is the voyage on which the steamers carry most of the trade, 255 passengers in every 2,200 square feet as follows :—

(a) Between deck,	1,000'; 166
(b) Upper deck,	900'; 39
(c) Poop deck,	300'; 50

allround average 8'6". An average space allowance of 11 square feet is recommended. The carrying capacity would then become 200 passengers, in 2,200 square feet, a reduction of 55 in 255, or 21 per cent. We do not consider that a greater reduction than this can at present be recommended, without serious dislocation to traffic in Bombay. The average space will be raised from 8'6" to 11'.

22. *Short voyage, non-specified runs, other steamers.—Longest section 72 hours ; Fair season.*

Existing allowances :—

- 6 square feet in the Between deck, plus 4 square feet airing space in the Upper deck, for each Between deck passenger ;
- 6 square feet for each Upper deck passenger ;
- allround averages, see below, 9'8' (two-decked ship) : 9'5' (three-decked ship).

The classification would cover the fair weather runs between Burma and Calcutta, and between Burma and Gopalpur on the Coromandel coast ; and some of the passenger and cargo traffic on the Western coast. It is recommended that the allowance should be raised from $\frac{6' + 4'}{8'}$ to a flat rate of 12'. Applying this figure to typical ships, the numbers carriable will be :—

(i) Passenger and cargo type—two decks, paragraph 11 (A) above :—

(a) Between deck 1,000' would carry	83	} 141 passengers, against 172 at present, (Questionnaire, No. 7), a reduction of 31 passengers or 18 per cent. in every 1,700', and an increase of the average space from 9'8' to 12'.
(b) Upper deck 700 " "	58	

(ii) Passenger and cargo type—three decks, paragraph 11 (C) above :

(a) Between deck 1,000' carries at present, 166, would carry	84
(b) Main (or Shelter or 400', " " " 1st Upper) deck.	Nil. " " 33
(c) Shade (or 2nd Upper) 400', " " " deck.	22, " " 33

Total	1,800'	188	150
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A reduction of 33 passengers, or 20 per cent. approximately, in every 1,800' and an increase in average space from 9'5' to 12'.

23. *Short voyage, non-specified runs.—Longest section 72 hours, Foul season.*

The existing allowance is 9' in the Between decks, plus 4' in the Upper deck for each Between deck passenger: and 9' in the Upper deck for every Upper deck passenger. The average space works out to 12.2' (two-decked ship): 12' (three-decked ship).

The classification would cover the case of many voyages from Rangoon to Calcutta or Gopalpur and many in the Western passenger trade. It is recommended that the space allowance should be raised from $\frac{9+4}{2}$ to a flat rate of 14'.

Applying the suggested figure to typical steamers the result becomes:—

(i) Passenger and cargo type (two decks) paragraph 11 (A) above.
Would carry.

(a) Between deck: 1,000' carries at present	111	(a) 71	} 121 passengers, against 139, a reduction of 18 passengers, or 13 per cent. in every 1,700', and an increase of the average space from 12.2 to 14 feet.
(b) Upper deck: 700' carries at present	28	(b) 50	
Total	139		

(ii) Passenger and cargo type, three decks (paragraph 11 (C) above):—

(a) Between decks	1,000'	carries at present	111	:	would carry	71
(b) Main (or Shelter or 1st Upper) deck.	400'	"	"	"	Nil:	"
(c) Shade (or 2nd Upper) deck.	400'	"	"	"	39:	"
Total	1,800'				150	127

A reduction of 23 passengers, or 15 per cent., in every 1,800' and an increase in average space from 12' to 14'.

24. Long Voyage, Fair and Foul Seasons. Over 72 hours for the longest section of the voyage.

The existing allowance is 9' in the Between deck for every passenger, plus 6' in the Upper deck for every passenger. The average (Questionnaire 8) works out to 15'.

The "Long" voyage (more than 120 hours on the longest section of a voyage) is at present a rarity. A majority of the Committee recommend a revision of the classification of voyages so that a voyage of over 72 hours between ports will count as a "Long" voyage. This will have the effect of converting many voyages which are at present "Short" into "Long". In particular, the voyages from Madras to Rangoon and Negapatam to Penang will (if the recommendation is accepted) become "Long" voyages, and passengers will enjoy the larger space allowance. All the evidence is to the effect that the existing "Long" voyage space allowance (15') is sufficient. We recommend a flat rate of 15', which should be applied to the new classification. Applying it to a Foul Season voyage from Madras to Rangoon, a typical two-decked steamer; *vide* preceding paragraph, at present carrying at "Short" voyage rates 139 passengers in every 1,700', would carry at "Long" voyage rates;

(a) in Between deck—1,000'	} 1,700	113
(b) in Upper deck —700'			15

Total, 113 passengers against 139, a reduction of 26 passengers in every 1,700', or 19 per cent.; the average space allowance would become 15' against 12.2' at present.

25. Existing fleets will not be able to dispose expeditiously of the existing traffic when the allowances are enhanced, and we therefore recommend that a reasonable time should be given, before the new allowances are brought into force.

26. There are some Indian waters in which very short services, wholly or partly at sea, are maintained in small fleets of steamers, *e. g.* :—

Danushkodi-Taliamaner	1½ hours.
Chittagong-Maungdaw	7 hours.
Tuticorin-Colombo	12 hours.

On short runs of this kind, we do not think it necessary that cooking galleys or washing places need be provided, and we further think that a specially small space allowance might be permitted. We recommend that it be left to the discretion of Local Governments to allow a rate (not falling below 6') in the case of steamers running on services which do not extend to more than 12 hours between terminal points, and to authorise such steamers to ply without providing cooking galleys or washing places.

27. The number of vessels applying for certificates to carry passengers in Orlop (or lower Between) decks is now few. The existing rules may continue (Notification by the Government of India in the Department of Finance and Commerce, No. 1356, dated the 14th March 1889, [Clause (4) of paragraph (1)] and Section 18 (i) of the Native Passenger Ships Act, 1887). These are that every passenger in an Orlop deck must be provided with 12' *plus* 4' in the Upper deck (Fair season, Short voyage), 15' *plus* 4' (Foul season, Short voyage) and 15' *plus* 6' (Fair and Foul seasons, Long voyage).

28.(*) The Committee do not count as an exposed deck, a deck with close, that is solid, bulwarks and permanent Carriage of passengers on exposed decks. roofing, since such a deck can be effectually closed with canvas weather cloths. Owners may be permitted to measure such a deck for passengers in both Fair and Foul seasons.

(ii) A deck with close bulwarks, but no permanent roofing, should be classified as an exposed deck, since the Committee consider that awnings in certain parts of the ship do not constitute sufficient protection against the weather. Owners should not be permitted to measure such a deck for passengers in the Foul season.

(iii) A deck with rails and stanchions and without permanent roofing should count as an exposed deck, and owners should not be permitted to measure it for passengers in the Foul season.

If the above classification is accepted, it will still further reduce the maximum number of passengers carriable in the Foul season in vessels with Upper decks coming within headings (ii) and (iii). On the western coast, (iii), wholly exposed, is the type of the uppermost deck in the passenger and cargo steamers of the Bombay Steam Navigation Company, and (ii) is a common type in the British India Steam Navigation Company's fleet. The number of passengers travelling in the monsoon on the Bombay coast is however small, and not much cargo is carried. Although the maximum carriable will be reduced, in practice we do not consider that the actual numbers carried will be much reduced. In the Bay of Bengal the maximum carriable will be reduced, but the available surplus space is considerable, and we do not consider that the actual numbers carried will be much reduced.

The Committee observe that in Burma a local rule exists forbidding the measurement of an exposed deck altogether in the Foul season. This goes beyond the existing law, and we think that the adoption of the foregoing recommendations will sufficiently meet requirements.

Captain Ste. Croix and Mr. Ritchie dissent from the above opinion, and have expressed their views in a separate minute.

29. The 5' rule is contained in paragraph (7) of the Notification by the Government of India in the Finance and Commerce Department, No. 1356, dated the 14th March 1889. The rule, which is

The 5' rule. applicable only to voyages between Madras coast ports and Burma ports, is ambiguously worded, and its meaning was discussed magisterially in a case in which the master of a Japanese steamer was prosecuted and convicted at Gopalpur in 1914, for carrying more than the

maximum number of passengers. The rule benefits owners in the case of monsoon voyages in ships of the two-deck, passenger-and-cargo type, if having a large amount of clear space in the Between deck. In such a ship with the usual proportions of clear space in the Between and Upper decks, the application of the rule would enable about 50 per cent. more than the ordinary number of passengers to be carried:—

Carriable under the ordinary rule (Foul season, Short voyage).

(a) Between deck	1,000'	. . . . .	111 passengers.
(b) Upper deck	700'	. . . . .	28 passengers.
Total in 1,700'			139 passengers.

Carriable under the 5' rule:—

(a) Between deck	1,000'	. . . . .	$\frac{1,000'}{5}$	200 passengers.
(b) Upper deck	700'	. . . . .	.	<i>Nil.</i>
Total in 1,700'				200 passengers.

This type of ship is disappearing in the Bay of Bengal services, the new type being one with three passenger-carrying decks, the two uppermost of which count as Upper decks. In such a ship, working under the 5' rule, both of the Upper decks ought to be kept free for the Between deck passengers, and the total number carriable would be 33 per cent. above the number carriable under the ordinary $\frac{9'+4'}{9}$ rule, as follows:—

(a) Between deck	. . . . .	1,000'	carries 111 passengers
(b) 1st Upper deck	. . . . .	400'	„ <i>Nil</i> „
(c) 2nd „	„	400'	„ 39 „
Total		1,800'	150

Carriable under the 5' rule, 200 passengers. Increase under the 5' rule 50 passengers in every 1,800', or 33 per cent.

The Committee are, however, doubtful whether officers working the Act. always apply the rule so as to make available for the Between deck passengers the whole of both Upper decks.

The rule is generally objected to by expert witnesses as leading to overcrowding. We recommend that it be abolished.

30. The existing rule (Sections 18 and 21 of the Native Passenger Ships Act, 1887), is that every Between deck passenger must be provided with 36 cubic feet in that deck for a Fair weather, “Short” voyage, and with 54 feet for a Foul weather, “Short” voyage. On a “Long” voyage, whether in the Fair or Foul season, every passenger has to be provided with 54 cubic feet in the Between deck.

It follows that, if the deck height is low, the superficial space allowance per passenger must be correspondingly increased. As an example, if the height in the Between decks were 4'-6", the superficial space (Fair weather, “Short” voyage) would need to be increased from 6' to 8'. In practice, deck heights are steadily rising, and we doubt whether any Between deck as low as 6' now remains on regular passenger steamers. The Committee see no reason to recommend a change in the law in this respect, or in the corresponding provisions regarding cubic spaces to be provided in Orlop decks (70 and 90 cubic feet, Section 18 of the Native Passenger Ships Act, 1887).

31. The Committee do not think that there need be a limitation of the number of passengers carriable to the gross tonnage, as in the case of certain classes of voyage under the Board of Trade rules. The introduction of such a rule would radically reduce passenger facilities and seriously dislocate transport on

the Western coast, where the design of the passenger steamer is such that the gross tonnage is very small.

32. At present there is nothing to penalize an owner for overcrowding a particular compartment so long as the ship is carrying fewer passengers altogether than the maximum for the ship (Section 38 of the Native Passenger Ships Act, 1887). We consider that the maximum number carriable in each compartment of any covered deck should be marked in large letters, in English and the chief Vernacular language, on the floor or wall of the compartment or companion way, and the carriage on any voyage of more than the aggregate of the maxima for all compartments made available on that voyage should be made punishable. We notice that on some steamers notification by compartments has already been introduced.

33. The maximum carrying capacity of typical steamers will be reduced as follows under our recommendations:—
Effect of increased space allowances on carrying capacity of steamers.

Class of voyage.	Trades mainly affected.	Percentage of reduction.	Increase in average space allowance.
1. Specified runs: Festival seasons.	Bombay purely passenger daily Services.	27 During festival seasons.	From 6'6" to 9'.
2. Specified runs: Non-festival seasons.	Bombay purely passenger daily Services.	31 In non-festival seasons.	From 6'6" to 9'5".
3. Short voyage: Bombay coast Steamers of 275', or under in length.	Bombay Steam Navigation Company's passenger and cargo services.	21	From 8'6" to 11'.
4. Short voyages other steamers Fair Season.	Passenger and cargo Services in steamers over 275' long.	18 (Two-decked Steamers), 20, (B. I. S. N. Coy.'s three-decked Steamers.)	From $\frac{9'8"}{9'5"}$ to 12'.
5. Short voyages: Foul Season.	Arabian Sea and Bay of Bengal Monsoon Services.	13 (Two-decked Steamers.) 15 (B. I. S. N. Coy.'s three-decked steamers.)	From $\frac{12'2"}{12'}$ to 14'.
6. Long voyages: Fair and Foul Seasons.	B. I. S. N. Coy.'s Bay of Bengal Services of over 72 hours, which will be changed from Short to Long voyages.	19 (Two-decked steamers Foul Season.)	From 12'2" to 15'.

34. It may be estimated that Bombay owners would need to add one-fourth to one-third to their fleets to carry the existing traffic at the proposed rates of space allowance, and that the British India Steam Navigation Company, which is the chief owner in the Bay of Bengal, would need to add one-seventh or less to their fleet in Indian waters, which is not worked to anything like the same capacity as the fleets on the Bombay coast. Further, we recommend below some structural alterations, not however in the aggregate implying a considerable increase to capital costs.

It was suggested by some Indian witnesses that owners' profits are high enough to pay for additions to the fleet without raising fares and that, if they attempted to raise fares, Indian capital would step in and offer to carry at existing fares. The bulk of opinion was, however, to the effect that increased space allowances would be followed in the natural course by an increase in fares. As to whether the deck passenger can afford to pay higher fares, the opinion of expert witnesses in Burma is unanimous that he can. Witnesses are divided on the question whether the deck passenger on the West Coast can afford an enhancement. Mr. Kamat is not prepared to express an opinion on this point. The remaining members are inclined to think that he can on the runs north, and that he probably can on the runs south, of Bombay. Undoubtedly the important point to him is to be carried rapidly to Bombay, in order not to lose wages. Further, there is no coastal railway between Bombay and Mangalore, and no railway connection between India and Ceylon or the Straits Settlements, or between India and Burma, and ship-owners have a virtual monopoly of the traffic along these routes. These facts suggest that if the owners were to raise fares, the public would be practically compelled to pay them.

Deck fares have been rising on certain typical runs as follows:—

	Rs.	A.	P.		Rs.	A.	P.	
Western India, Coasting, Bombay-Vengurla.	1878	3	0	0	1916-17	2	0	0
	1910	1	9	0	1917-18	2	15	0
	1913-14	0	10	0	1918-19	3	5	0
	1914-15	1	10	0	1919-20	3	6	0
	1915-16	1	8	0	1920-21	4	2	0
Rangoon-Madras	1891	10	0	0				
	1921	13	0	0				
Rangoon-Calcutta	1891	10	0	0				
	1921	13	0	0				

Deck passengers have been able hitherto to pay the higher fares, and the increase has not yet attracted into the shipping field—not at any rate with success—new capitalist enterprise. On the other hand the fare on the Coromandel=Rangoon run has dropped from Rs. 15 in 1910 to Rs. 13 in 1921.

Some typical actual fares are as follows in terms of mileage:—Bombay Goa; 245 miles: Rs. 3-10 or about 1 pice a mile: Rangoon-Calcutta (about 780 miles) Fare Rs. 13, or 1 pice a mile: Akyab to Chittagong: about 4 pies a mile.

In the smaller of the passenger-carrying lines south of Bombay—the India Co-operative Steam Navigation Company—the dividend to ordinary shareholders (10 per cent.) has steadily risen, though still remaining moderate. The Bombay Steam Navigation Company paid an average dividend of $6\frac{1}{2}$ per cent. from 1906 to 1914. In 1919 and 1920 the dividend was 17 per cent. We are informed that this Company has made no bonus distribution in the period referred to. The maximum ordinary dividend paid by the British India Steam Navigation Company, during the past 20 years, has been 13 per cent. but there has been an amalgamation, the financial effect of which is not known to us.

35. It was urged by some witnesses that Government ought to intervene by fixing a minimum deck=passenger fare.

Rate-wars.

Some unofficial and some official witnesses stated that new capital is debarred from entering the shipping trade through fear of a rate-war, and it is common knowledge that in the past attempts have been made to enter the trade and have failed, generally partly owing to a rate-war. For instance, the rate of annas ten from Bombay to Vengurla quoted above reflects a rate-war then in progress. These witnesses expressed the opinion that, if the certainty of a rate-war could be removed by means of the prescription of a minimum fare, plenty of new capital would be forthcoming for new shipping ventures, and the ensuing competition would of itself lead, without an increase in the fare, to improvement in the amenities provided for deck passengers. The Committee are averse from recommending more than the minimum intervention by Government in the shipping trade,

but realise that Government is closely concerned to see that fares remain low in areas that depend on deck passengers for their development, for instance, Karachi, Bombay City and the Province of Burma, and further that the sale of facilities for carrying human beings stands on a different footing from the sale of commodities for consumption. The carriage of passengers by sea is, indeed, essentially a service in which the public control may justifiably exceed that imposed on an ordinary business. The principle of such control has been accepted in the case of the carriage of passengers by rail. It is a fact that one or two shipping concerns at present hold the monopoly of the passenger trade in Indian waters, and the Committee consider that if a rate-war could be avoided, a stimulus would be afforded to fresh enterprise, and that this would lead to amelioration of passage conditions generally, a result which competition has brought about in the case of the emigration trade from European countries.

The issues involved are of a difficult nature, and the complete data needed for an examination of the question are not before the Committee. A majority of the members think, however, that if a moderate increase in space allowances is found to be followed by a material increase in fares, Government might consider the question whether a minimum fare ought not to be prescribed. Capt. Ste. Croix and Mr. Ritchie dissent from the foregoing remarks.

35 A. Our recommendations in this chapter may be summarised as follows :—

Summary.

- (i) The limit for a "Long voyage" should be reduced from 120 to 72 hours (for the longest section of a voyage).
- (ii) A flat rate of space allowance should be substituted for the occupation space *plus* airing space at present provided for the Between-deck passenger.
- (iii) There should be a provision in the Act that, subject to the requirements of navigation, all exposed decks not reserved for higher classes, or occupied by passengers, shall be made available to Between-deck passengers, as airing space.
- (iv) There should be six classes of voyage, *viz.* (i) Short voyage, Specified runs, Festival seasons, Fair seasons ; (ii) Short voyage, Specified runs, non-festival seasons, Fair seasons ; (iii) Short voyage, non-Specified runs, Bombay coast only, Fair season ; (iv) Short voyage, non-Specified runs, other steamers, Fair season ; (v) Short voyage, non-Specified runs, Foul season ; and (vi) Long voyage, Fair and Foul seasons.
- (v) The space allowances for the different classes should be as follows :—

(a) *Short voyage, specified runs, Festival seasons.*

The Bombay Government should be given power to allow steamers to carry at the rate of 9' during holiday seasons, such as the *Holi* and *Dewali*, a special certificate being obtained on each occasion, and the concession being limited to voyages in the Fair season, of 24 hours duration or less.

Other Local Governments may also be given power to deal with similar cases, if any, in their jurisdictions.

(b) *Short voyage, specified runs, non-festival seasons.*

A special category of runs, to be scheduled, should be drawn up in order to meet the case of the heavy fine weather passenger traffic on daily services from Bombay to ports southward in non-festival seasons. The voyage should be limited to 24 hours between terminal points and to the Fair season. The President considers that owners should be allowed to carry passengers at the rate of 9.5' on any deck. Dr. Batra and Mr. Kamat would not go below 10'.

- (c) *Short voyages, non-specified runs, Bombay coast, steamers of 275' or under in length, Fair Season.*

Owners may be allowed to carry at the rate of 11'.

- (d) *Short voyage, non-specified runs, Fair season.*

Owners should be permitted to carry passengers at the rate of 12'.

- (e) *Short voyage, non-specified runs, Foul season.*

Owners should be allowed to carry passengers at the rate of 14'.

- (f) *Long voyage, Fair and Foul seasons.*

Voyages over 72 hours between ports should count as "Long voyages." Owners should be allowed to carry passengers at the rate of 15'.

- (vi) Owners should be given a reasonable time before new allowances are brought into force.
- (vii) It should be left to the discretion of Local Governments to allow a rate (not falling below 6') in the case of steamers running on services which do not extend to more than 12 hours between terminal points, and to authorise such steamers to ply without providing cooking galleys or washing places.
- (viii) The existing rule that every passenger in an Orlop deck must be provided with 12' *plus* 4' in the Upper deck (Fair season, Short voyage), and 15' *plus* 4' (Foul season, Short voyage), and 15' *plus* 6' (Fair and Foul seasons, Long voyage) may be allowed to continue.
- (ix) Owners may be permitted to measure a deck with close, that is solid, bulwarks and permanent roofing, for passengers in both Fair and Foul seasons.
- (x) Owners may be permitted to measure a deck with close bulwarks, but no permanent roofing, for passengers in the Fair season only.
- (xi) Owners may be permitted to measure a deck with rails and stanchions and without permanent roofing, for passengers in the Fair season only.
- (xii) The 5' rule should be abolished.
- (xiii) There is no reason to change the existing rule regarding the provision of cubic space for Between deck passengers, or the corresponding provisions regarding cubic spaces to be provided in an Orlop deck.
- (xiv) There need not be a limitation of the number of passengers carriable to the gross tonnage.
- (xv) The maximum number carriable in each compartment of any covered deck should be marked in large letters in English and the chief Vernacular language, on the floor or wall of the compartment or companion way.
- (xvi) The carriage on any voyage of more than the aggregate of the maxima for all compartments made available on a particular voyage should be made punishable.
- (xvii) If the Committee's recommendations (should they be sanctioned) eventually lead to a material increase in fares, Government might consider the question whether a minimum fare ought to be prescribed.

CHAPTER III.

36. There is a practical consensus of evidence that more uniformity is needed in the method of measuring the space available for deck passengers. The Committee noticed many cases of lack of uniformity. In some cases (of boats asking for a certificate for the maximum number of passengers) both the Bridge Boat deck and the Bridge deck are measured: in others, neither: in some cases, only one. In some cases the Between deck bunkers are measured and shown separately, in others measured, but not shown separately, their area being included in that of one of the Between deck compartments. The Poop deck is sometimes measured, sometimes not. In several instances space was found measured, which under no circumstances was made available for deck passengers, e.g., the Bridge Boat deck on certain steamers, the first class cabins on others.

The Committee consider that uniformity ought to be secured, and recommend the adoption of the following general principles:—

- (i) Space which is not under any circumstances made available for deck passengers should not be measured as available. This would exclude saloons and first and second class cabins.
- (ii) Space needed for the working of the ship should not be measured. This will exclude in most cases, (see (h) below), the Bridge Boat deck (which in practice is rarely if ever made available, and which as a measure of safety ought not to be made available) and the space covered by boats on an Upper deck (when so carried), together with working space.
- (iii) Space needed for the provision of reasonable facilities for the movement of passengers, for example to and from the latrines and washing places, should not be measured.

We recommend that spaces of the following particular kinds should be dealt with as stated against each:—

- (a) Between deck *alley-ways* less than 6' wide should not be measured. If 6' wide or over, 4' should be excluded from measurement and the balance may be measured. As regards *passages in Upper decks*, between the deck erections and the bulwark, no passage less than 2'-6" should be measured. If 2'-6" or over, 1'-6" should be deducted, and the balance may be measured.
- (b) No portion of a *hatch* used as a gang-way should be measured. The rule issued as an executive order by the Government of India (Resolution by the Government of India in the Department of Finance and Commerce, No. 2758, dated the 11th August 1884) is, on "Short" voyages, to exclude the whole area of the hatch, presumably on the ground that it may have to be opened at intermediate ports; on a "Long" voyage, if the hatch is over 120' in area, to measure one half of it. The hatches, although not measured during "Short" voyages (which are the majority of the voyages performed at present) are in practice always used by deck passengers, except when they are opened, which may take place at intermediate ports, for purposes of handling cargo. In the important passenger trade on the western coast the hatches are frequently left open, not in order to facilitate the handling of cargo, but to afford ventilation to the passengers on the deck below. We recommend in another paragraph that the limit of the "Short" voyage should be reduced from 120 to 72 hours between ports. If this is accepted, a number of the voyages performed in India will become "Long" instead of "Short." For hatches not used as gang-ways, we recommend the retention of the present rule, *viz.* that on "Short" voyages none of the hatch space should be measured for passengers, whilst on "Long" voyages, if the hatch exceeds in area 120 square feet, one half of it may be measured.
- (c) *Forecastle heads*.— No portion of a short fore-castle head on which a windlass is carried should be measured. Nearly the whole is in

practice occupied by encumbrances, and the fore-castle is needed for purposes of navigation at certain times. The case of a specially long fore-castle head should be referred to the central inspecting authority recommended in a later paragraph, if sanctioned.

- (d) In the case of a steamer coming under survey for the first time, no *Between deck* not 6'-6" in height should be measured.
- (e) The 1890 Commission recommended the exclusion, in the Foul season, of all *uncovered deck* space, and proposed that the whole, or a portion of the same should be kept for the use of the deck passengers under permanent shelter. Our recommendations regarding exposed decks in the Foul season are stated in detail in another paragraph.
- (f) The lower *hold* should not be measured.
- (g) Temporary *accommodation on cargo* should not be measured.
- (h) *Boats (or rafts)*:—We consider that a special Bridge Boat deck (if any) should be wholly excluded and that, if boats are carried on another deck, the space covered by the boats, and space for a convenient approach thereto, should not be measured.

The rule may be stated as follows:—

Purely Boat Decks, the whole length of which, fore and aft, is occupied by boats, should not be measured for passengers, even if the boats are carried swung out on davits.

Where Boat decks are of very long design, and only *partially occupied* by boats, the space occupied by boats should be railed off, leaving a clear space for the crew to work boats. The remainder of the deck fore and aft of the boats can be measured, provided (i) the length of deck at forward and after end of the boats is not less than 10 feet, and (ii) the deck is a suitable deck for passengers in all respects.

- (i) Space needed for navigation should not be measured.
- (j) The area of Permanent and Temporary *hospitals* should not be measured.
- (k) *First and second class saloons and cabins* should not be measured.
- (l) *First and second class airing space*: Fifteen superficial feet per head should be reserved for 1st and 2nd class passengers, and the balance may be measured for deck passengers. The areas to be assigned as airing space for first and second class passengers should, where possible, be marked off.
- (m) Fore and aft raised *gangways* should not be measured. We recommend that lines 21 inches wide should be marked on the *Between decks*, amid-ship, forward and aft, and that the space included should not be measured. The object of our recommendation is to facilitate the movements of passengers to the washing places, etc.
- (n) *Baggage rooms, the space occupied by masts, ventilators, and stanchions, pipes, projections, ladders, latrines, washing places, water tanks, cooking galleys* and other encumbrances should not be measured.
- (o) *Waterways* when not covered by a grating should not be measured.
- (p) *Sleeping platforms*.—These are provided on some ships of the British India Steam Navigation Company, on the "Short" voyage services between Burma and Madras, Burma and Calcutta, and Madras and the Straits Settlements ports, and on "Long" voyage services between Bombay and East Africa. They are approximately 5' by 5', and are installed in the *Between decks*, suspended about midway between the floor and the deck overhead. There is a general consensus of opinion that they have decided advantages and are

popular. They were found to be popular on the Madras-Rangoon run in 1890, *vide* 1891 Report, pages cxxxviii and cxxxix. Whilst our recommendations regarding enhancement of the average space allowances will materially reduce crowding, the installation of sleeping platforms in the Between decks would not be an expensive addition to the equipment, and the platforms would add much to the comfort of passengers, who could use them either to lie on themselves, or for their luggage. In particular, we think that in the Bombay trade, especially on the runs north of Bombay, the provision of platforms in the Between decks would materially relieve the present luggage difficulty. We recommend, therefore, that no Between or lower-Between deck should be measured for passengers unless it is fitted with these platforms. An exception may be made in the case of a steamer diverted to a particular run temporarily, for the express purpose of dealing with a heavy rush of passengers. We do not consider it sufficient to retain the existing space allowances and as a set-off merely to prescribe the provision of sleeping platforms. Such platforms, not being deck space, should not be measured as passenger accommodation.

(g) Deck space, or *airing space*, for the crew should not be measured.

37. We recommend the issue of a set of Instructions, to be applied in all maritime Provinces, on the lines of the Board of Trade *Instructions as to the Survey of Passenger Accommodation*, and going into detail. If our suggestion that scrutiny of the working of the Act should be secured by the creation of a small centralized inspecting authority, the preparation of the Instructions, and the settlement of doubtful cases, should devolve upon the Inspector.

37A. Our recommendations in this Chapter may be briefly summarised as follows :—

Summary.

- (i) Uniformity in the method of measuring the space available for deck passengers shall be secured by the adoption of the suggestions made. Among these, is a suggestion that no between deck should be measured, unless it is fitted with sleeping platforms.
- (ii) A set of Instructions, on the lines of the Board of Trade Instructions as to *the Survey of Passenger Accommodation* and going into details, should be prepared by a Central Inspecting Authority and applied in all maritime Provinces.

CHAPTER IV.

38. This is a difficult question, especially in the Western India Services, from Bombay Northwards to Karachi and the Persian Gulf. On these runs the deck passenger often surrounds himself with a mass of personal effects, from which he strongly objects to be parted, and by so doing occupies more than his fair share of the space available. The case is hardly less difficult in the voyages from Rangoon to the Madras ports, where we have personally observed deck passengers carrying large teakwood boxes, bedsteads, planks, etc., as personal luggage, and thus creating a bad condition of overcrowding. Much of the overcrowding that exists is, indeed, solely due to the luggage carried by the deck passengers. Owners can, and do, charge passengers excess rates for personal effects over a certain weight, but they do not assess strictly and, as passengers are only allowed on to the ship about an hour before sailing, weighment of each passenger's goods presents difficulties. In Madras there is a local rule that only two-hand packages may be carried with a passenger, but the rule is said to be a dead letter. We think that owners should endeavour to lessen the amount of luggage carried by means of a stricter imposition of excess charges, proper storage and delivery arrangements being made for all excess baggage.

38A. Our recommendation in this Chapter is that owners should endeavour to lessen the amount of luggage carried by levying excess charges, proper storage and delivery arrangements being made for all excess luggage.

Summary.

CHAPTER V.

39. The present rule is contained in Section 10 of the Native Passenger Ships Act, 1887, which says that Certificate "A" shall state that the ship is properly ventilated, *i.e.*, it is left to the discretion of the Surveyor when making the periodical survey (usually once a year) to look into the question of ventilation, and apply what criterion he thinks reasonable. In certain cases, *e.g.*, in Bengal, his discretion is guided by Instructions prescribed by the Local Government. The Bengal rule is contained in Instruction 20 of the *Instructions as to the Survey of Passenger Accommodation in Native Passenger and other sea-going ships*:—

20. * * * * *

"Care should be taken that the means provided for ventilation are sufficient to allow of a good supply of air in the event of the hatches being closed in bad weather. Places ventilated by hatches only, or in which provision is not made for a sufficient supply of air and light under *all* circumstances, should not be measured for passengers.

Ventilation.

Floors.

"All floors of passenger accommodation must be properly laid and caulked.

"The lower hold must not be considered as proper accommodation for passengers, neither are spaces which consist of temporary accommodation upon the cargo, nor spaces lighted and ventilated by hatches only.

Lower hold not measured for passengers.

"Exclusive of hatchways, natural ventilation in the ratio of 5 square inches to every statute adult should be fitted to each between-deck compartment in which passengers are carried.

"The ventilation should be efficiently distributed so that it may ventilate all parts of each separate compartment."

Only Bengal has prescribed a local rule. In Bombay the Ship Surveyor endeavours to apply a 5-inch standard, or something like it, but is very often compelled to accept $2\frac{1}{2}$ inches, or something between that and 5 inches. Our inspection of vessels led to the conclusion that ventilation was generally better in steamers sailing from Calcutta (and Madras) than in steamers plying on the Bombay Coast. The scale on emigrant ships is 10 square inches, and this is what the 1890 Commission recommended for Native Passenger Ships. As such ships proceed on shorter voyages than emigrant ships, we think that 5 square inches will suffice, provided the ventilation is efficiently distributed. We do not consider that it is, in all cases, so distributed at present. Five inches should be prescribed as the minimum by rule.

In the case of vessels with an Orlop (or Lower-Between) deck, we consider that there should be artificial ventilation or, in the alternative, 10 square inches of ventilation by means of cowls or air shafts opening on to the weather deck. This is the scale prescribed for pilgrim ships.

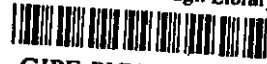
40. The location of latrines and the designs vary. The usual arrangement is one battery of latrines on the Upper deck aft, and another forward. On some steamers, however, all are collected at one end of the ship, and on others an additional battery or batteries is placed amid-ships. On the passenger steamers on the Bombay side, the feature of which is two Upper decks, all the latrines are carried on the lower of the two decks. In most of the three-passenger-deck British India Steam Navigation Company's steamers the latrines are on the lower of the two Upper decks, but in some cases there are latrines on the upper of these decks.

Latrine accommodation.

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REPORT

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OF THE

Deck Passenger Committee

1921

VOLUME I



CALCUTTA
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VOLUME I.

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Report of the Deck Passenger Committee 1921.

CHAPTER I.

INTRODUCTORY.

1. The question of improving the scale of accommodation provided for deck passengers on vessels to which the Native Passenger Ships Act, 1887 (X of 1887), applies was investigated in 1890 by a special Commission, which made a number of recommendations. These are reproduced in Appendix A below. The recommendations were generally accepted by the Government of India, and such of them as were considered to involve changes in the law were incorporated in the Merchant Shipping Bill, then under preparation, while those which necessitated changes in the rules were embodied in a revised draft of rules. The question of giving effect to these recommendations had, however, eventually to be dropped, as Government were advised that the Merchant Shipping Bill, and the revised draft of rules, were beyond the power of the Indian Legislature.

The question remained in abeyance until 1913, but has since on several occasions been before the Government of India in one or other of its aspects. In 1919 Government reconsidered the recommendations made by the Commission of 1890, and came to the conclusion that the principal recommendations with reference to the following points :

- (a) the amount of space to be prescribed for each passenger ;
- (b) the method to be adopted for the measurement of such space ;
- (c) the standard of ventilation to be provided ;
- (d) the standard of latrine accommodation to be provided ;
- (e) the standard of water supply to be provided ;
- (f) the conditions on which the carriage of passengers' luggage should be permitted ;
- (g) the conditions on which the carriage of cattle, sheep and goats should be permitted ;

could, in one form or another, be given effect to under the legislative powers of the Government of India. Maritime Local Governments were consulted, but their replies disclosed a considerable diversity of opinion, and it was decided that the most satisfactory way of reconciling these opinions would be to place the whole matter before a small Committee of experts, representative of official and non-official interests. The Resolution appointing the Committee was as follows :—

Resolution by the Government of India in the Department of Commerce, dated the 5th February 1921, No. 1088.

The Government of India have had under consideration the question of improving the standards of accommodation and sanitary conveniences at present provided for deck passengers under the Native Passenger Ships Act, 1887, and the rules made thereunder, in order to prevent the overcrowding of such passengers and to ensure their better health and comfort. They have consulted the Local Governments concerned in the matter, but in view of the considerable diversity of opinion disclosed by their replies and of the fact that the subject involves a number of technical and other questions which need careful scrutiny, the Government of India have decided to appoint a small Com-

mittee of experts, representative of official and unofficial interests, to investigate the whole question. The Committee will consist of the following gentlemen :

President.

Mr. J. P. Hardiman, C.B.E., I.C.S., Commissioner, Tenasserim Division, Burma.

Members.

Mr. James M. Ritchie, Representative, Bombay Chamber of Commerce.
 Captain P. de. St. Croix, Representative, Bengal Chamber of Commerce.
 Mr. B. S. Kamat, M.L.A.
 Dr. G. L. Batra, D.P.H., Special Officer, Calcutta and Chittagong Ports.

Secretary.

Mr. E. Rogers, Superintendent, Department of Commerce, Government of India.

The Committee will assemble at Calcutta on the 15th February 1921, and will subsequently visit the ports of Bombay, Rangoon and possibly also Cocosnada. It will submit its report to the Government of India as soon thereafter as possible. The terms of reference to the Committee are attached. The Government of India trust that the Local Governments concerned will afford the Committee all the assistance which it may require, and (that) they will comply with any request for information and advice which it may address to them.

Terms of Reference.

To advise the Government of India what amendments, if any, it is desirable, in modern conditions, to make in the Native Passenger Ships Act, 1887, and the rules made thereunder, in order to prevent the overcrowding of deck passengers and to ensure their better health and comfort.

The Committee will be required in particular to consider and to make definite recommendations as to

- (1) the amount of space to be prescribed for each passenger and the method to be adopted for the measurement of such space ;
- (2) the standards of ventilation, latrine accommodation and water supply to be prescribed ;
- (3) the conditions on which the carriage of passengers' luggage and of cattle, sheep and goats should be permitted ; and
- (4) the structural alterations to ships involved in their recommendations.

The Committee should bear in mind the recommendations of the Native Passenger Ships Commission of 1890, and should carefully consider the expense to which shipping companies will be put and the decrease in the earning power of ships which may be involved in the acceptance of their recommendations, in order that the amendments they propose to the Act or rules may not result in making fares prohibitive to the classes who usually travel as deck passengers.

2. The Committee assembled at Calcutta on the 15th February. A questionnaire (Appendix B) was drawn up, and copies sent to the maritime Local Governments, who were requested to instruct expert witnesses (*e. g.*, Port Officers, Port Health Officers, Ship Surveyors, Protectors of Emigrants) to prepare replies. They were also requested to send copies of the questionnaire to any other officials, Associations, or individuals known to be interested in the matter. A Press Communiqué was issued in the chief English and Vernacular newspapers at each of the ports visited, inviting replies to the questionnaire. Persons replying to it were asked to present themselves for oral examination, and a narrative of the evidence given was recorded, and was thereafter verified by the person examined.

With the sanction of the Government of India, Karachi, Madras and Chittagong were subsequently included in the ports visited by the Committee. Their itinerary was :—

Calcutta	dep.	25th February 1921.
Karachi	arr.	1st March "
	dep.	9th " "
Bombay	arr.	11th " "
	dep.	21st " "
Madras	arr.	26th " "
	dep.	29th " "

(The Secretary was present in Madras from the 24th March.)

Coconada	arr.	30th March 1921.
	dep.	1st April "
Rangoon	arr.	6th " "
	dep.	12th " "
Calcutta	arr.	14th " "
	dep.	19th " "
Chittagong	arr.	20th " "
	dep.	20th " "
Calcutta	arr.	21st " "

Mr. Kamat's engagements with the Imperial Legislative Assembly made it impossible for him to join the Committee until the 19th February, and he had to leave it again on the 22nd *idem* and could not rejoin until the 14th March. Mr. Ritchie was unable to accompany the Committee from Bombay to Madras or Coconada, but rejoined them at Rangoon.

During our tour, in the course of which we travelled 6169 miles (3444 by steamer and 2725 by rail) we held 53 meetings, interrogated 62 witnesses, inspected 37 different steamers, and travelled ourselves on 5 steamers.

3. Except for purposes of comparison of the amenities required respectively by the Pilgrim Ships Act, 1895 (XIV of 1895), and by the Indian Emigration Act, 1908 (XVII of 1908), with those required under the Native Passenger Ships Act, 1887, the Committee are not concerned with the conditions of the pilgrim or emigrant traffic.

4. In this report, subject to the context, we speak of the various passenger decks as follows, beginning with the lowest :—

Orlop, or lower between, deck.

Between-deck.

Main (or Shelter, or 1st Upper) deck.

Shade (or 2nd Upper) deck.

Bridge (or Saloon) deck.

Boat Bridge deck.

Extent of the traffic.

5. The total number of passengers carried in India at the time when the Commission of 1890 reported was :—

	Short Voyages.	Long Voyages.	Total.
1888—89	9,68,022	33,870	10,01,892
1889—90	10,43,555	37,848	10,81,403

The details were as follows :—

SHORT VOYAGES.

To Ports within the Province.

From ports of	Number of passengers.		REMARKS.
	1888-89	1889-90	
Bengal	1,22,348	1,44,600*	*About 1,35,000 Calcutta to Aliba and Chandbally and <i>vice versa</i> ; said to be mostly pilgrims.
Madras	3,461	10,501	
Bombay	6,08,471	6,39,695	CHIEF RUNS :— (a) Bombay, Goa and Coast, and <i>vice versa</i> . (b) Bombay-Jaigad and Coast and <i>vice versa</i> . (c) Bombay-Cutch and Coast and <i>vice versa</i> . (d) Bombay-Karachi and Kathiawar and <i>vice versa</i> .
Burma	35,716	35,298	(i) Homeward runs apparently not included in figures. (ii) Chief outward run—Rangoon-Moulmein.
<i>To ports outside the Province.</i>			
Bengal	45,907	60,060	CHIEF RUNS :— (a) Calcutta to Burma ports, (38,982 in 1889-90), mainly Calcutta-Rangoon (27,138 in 1888-89). (b) Chittagong to Burma ports, mainly Chittagong to Akyab (11,093 in 1889-90) and Chittagong to Rangoon (8,762 in 1889-90).
Madras	71,860	70,656	CHIEF RUNS :— (i) To BURMA (a) Negapatam-Rangoon (15,240 in 1889-90). (b) Coconada to Rangoon (8,361) (c) Calingapatam to Rangoon. (d) Vizagapatam to Rangoon. (e) Madras to Rangoon. (ii) To CEYLON (a) Tuticorin to Colombo (17,901 in 1889-90). (iii) To BOMBAY (a) Mangalore to Bombay, (7,496 in 1889-90).
Bombay	10,257	11,444	CHIEF RUNS :— (a) Bombay to Basra and Persian Gulf (5,255 in 1889-90). (b) Bombay to Mangalore (4,316 in 1889-90).
Burma	70,002	71,301	CHIEF RUNS :— (a) Rangoon to Calcutta and Coast ports (32,979 in 1889-90). (b) Rangoon to Madras and Coast ports (22,985 in 1889-90). (c) Akyab to Chittagong (18,554 in 1889-90).
TOTAL	9,68,022	10,43,555	

LONG VOYAGES.

The passengers returned as carried on "Long" voyages in 1888-89 and 1889-90 numbered 33,870 and 37,848 respectively, *i.e.*, their numbers were very small in comparison with those going on what were, (and are, at present) in the legal sense "Short" voyages. Passengers to and from Aden were not apparently in all cases counted, but their inclusion would not have disturbed the proportion much. The chief runs were:—

- (a) Negapatam to Singapore (16,881 in 1889-90).
- (b) Rangoon to Negapatam and Madras Coast ports (15,427 in 1889-90).
This was practically the only "Long" voyage to an Indian port, and the figures represent a portion of the return flow of the passengers from Madras to Burma, the voyage to Burma counting as a "Short" voyage.
- (c) Karachi to Basra (1,494 in 1889-90).
- (d) Bombay to Mauritius (1,028 in 1889-90).
- (e) Bombay to Zanzibar (729 in 1889-90).
- (f) Bombay to Zanzibar and Aden (350 in 1889-90).
- (g) Bombay to Natal (438 in 1889-90).
- (h) Karachi to Aden (255 in 1889-90).

Owing to faster steamers having been placed on run (a), this has now become a "Short" voyage.

6. The figures for 1919-20 were as follows:—

<i>Short voyages.</i>	<i>Long voyages.</i>	<i>Total.</i>
2,070,921	36,646	2,107,567.

The details were as follows:—

SHORT VOYAGES.		
From ports of.	To Ports within the Province.	Number of passengers.
Bengal	31,633
Burma	1,150
Bombay	1,411,488
Burma	34,723
Total		1,478,994
To Ports outside the Province.		
Bengal	153,840
Burma	169,779
Bihar & Orissa	27,742
Bombay & Sind	25,295
Madras	215,771
Total		591,927
GRAND TOTAL		2,070,921

LONG VOYAGE.

Only 36,646 passengers were carried from India on "Long" voyages during 1919-20. The chief runs were from:

- (a) Rangoon to Madras, 12,844.
- (b) Rangoon to Coconada, 3,424.
- (c) Calcutta to Penang, 1,764.
- (d) Calcutta to Singapore, 2,333.
- (e) Bombay to Delagoa Bay, 1,536.
- (f) Bombay to Mombassa, 4,011.
- (g) Bombay to Zanzibar, 1,807.

Important inferences from the foregoing figures are :—

- (i) that the conditions on "Short" voyages are the ones calling for study, since the "Long" voyage is now a rarity,
- (ii) that three-fourths of the "Short" voyages are from one port to another in the same province,
- (iii) that more than half the passengers carried in India are carried from one port to another of the Bombay Presidency,
- (iv) that the total volume of the trade has doubled within the past 30 years, in spite of the extension of railway facilities, and

the trade has not yet got back to pre-war figures. See Appendix C.

7. The Committee were impressed with the local variations in the conditions of the passenger traffic, the chief features of which, at the present time, are as follows :—

Note on the nature of the various trades.

A. Western India.

The chief lines are :—

- (a) Bombay to Karachi (direct and coasting services),
- (b) Bombay *via* Karachi to Persian Gulf ports,
- (c) Services within the Gulf of Cutch,
- (d) Bombay to Bhavnagar in the Gulf of Cambay,
- (e) Bombay to Mangalore, coasting,
- (f) Bombay to Panjim (Goa), coasting,
- (g) Bombay to Jaigad, coasting,
- (h) Bombay to Viziadrug, coasting.

The Bombay Steam Navigation Company, Ltd., serves all the above runs except (a) direct to Karachi and (b) the Persian Gulf run. The British India Steam Navigation Company, Ltd., serves runs (a) and (b) and also has a regular service between Bombay and East and South Africa. The Indian Co-operative Navigation and Trading Company, Ltd., runs a coasting service of purely passenger steamers south of Bombay to Panjim. The Mogul Line (an arrangement between the Bombay and Persia Steam Navigation Company, Limited, and the Arab Steamers, Ltd.) has regular services mostly between Bombay (or Karachi) and the Persian Gulf, Arabia and the Red Sea. There are other services carried on by owners with small fleets of one or two vessels.

Within the Persian Gulf the chief class of deck passengers are Arab traders, and the Arab deck passenger is little amenable to control. Between Karachi and Bombay there are two main classes of deck passengers, *viz.* :—

- (a) traders (often men of substance), and
- (b) artisans and manual labourers. Karachi depends to a large extent for its artisan and unskilled labour on deck passengers from Cutch and Kathiawar.

The great bulk of the deck passenger traffic in the Bombay Presidency is carried by the Bombay Steam Navigation Company. Their fleet consists of 24 small steamships, 12 of which carry passengers and cargo, 12 passengers only (exclusive of 5 creek steamers and 12 launches). The former serve all the runs north of Bombay, and one of the runs south—that to Mangalore *via* Goa and the coast ports. The latter serve all the runs South of Bombay except Mangalore. The steamers are specially designed for the trade. The features of the passenger and cargo steamers are short length (to allow for the conditions of sea room and anchorage met with) and two passenger decks (Between and Upper), the Between decks being used for cargo or passengers; of the passenger steamers proper, light draught, short length, a low freeboard, and two large Upper decks (with, in addition, a very small Between deck). The object of having two spacious Upper decks is to accommodate as many deck passengers as possible at 6' per passenger. On the lower of the two decks 4' has to be reserved for the Between deck passengers. Most of the traffic is through, from the terminus to the various intermediate or terminal

points, and *vice versa*, interportal traffic (the figures of which are given below) being relatively small, though still considerable. The trade has grown. Excluding such interportal trade, in 1919-20 the Company carried on all its sea runs, both south and north of Bombay, a total of 1,104,515 passengers in four classes, the deck passenger class numbering approximately 90 per cent. of the whole. These figures are exclusive of about half a million passengers, carried yearly under Inland Steam Vessels certificates, within the Bombay Harbour, at a space allowance which the Committee understand is 4' per passenger. The present day figure of passengers carried by this one Company exceeds the whole number of deck passengers carried in India in 1889-90, (10,81,403).

The Company's services south of Bombay, where all but one of the runs are for passengers only, are of particular importance, present some features which are not met with elsewhere, and present them on a large scale. These features are the numerous ports visited, the short distance between the ports, the large number of deck passengers carried, the frequent very heavy rushes, and the high average number of passengers per voyage. Some of the anchorages are difficult, but most of the intermediate ports afford excellent shelter and anchorage. Embarkation and disembarkation are troublesome, a feature which this trade shares with the Madras coast. The purely passenger services are shut off and the passenger and cargo services are curtailed in the monsoon season (officially lasting for 3½ months only, from the 26th May to the 31st August). On the lines that continue running several of the fair weather ports are omitted. There is no service to Mangalore in the foul season, and no service south of Mangalore at any time of the year.

In the fair weather, there is a daily service to Jaigad, another to Viziadrug, and a third to Panjim (Goa). The Jaigad run lasts 15 hours and 8 intermediate ports are called at; Viziadrug 20 hours, 7 ports; Panjim 21 hours, 7 ports. Bi-weekly services are from Bombay to Mangalore (65 hours, 9 ports), Karachi (70 hours, 5 ports), and Bhavnagar (39 hours, 3 ports). There is a weekly service to Gulf of Cutch ports (68 hours, 10 ports).

The greatest length of time the steamers are at sea on the various lines is as follows :—

<i>Bombay to</i>	<i>Longest section at sea</i>
(a) Karachi	Bombay and Verawal—19½ hours
(b) Gulf of Cutch	" " " 19½ "
(c) Bhavnagar	" and Diu 16 "
(d) Mangalore	" " Vengurla 20 "
(e) Goa	" " Ratnagiri 17 "
(f) Jaigad	" " Alibag 2 "
(g) Viziadrug	" " Harnai 8 "

On the down voyage, after the first port on the voyage has been called at, steamers touch at other ports every few hours, until the terminal port is reached, the only exception being on the Karachi line, where the run between the penultimate point, Cutch Mandvi, and Karachi takes about 19 hours. Similarly on the up voyage, after reaching the first port of the line concerned steamers call at other ports every few hours until the final port before Bombay is reached.

On the Mangalore line steamers call at 10 ports (between the first port of call and the terminal port) in about 38 hours, on the Karachi line, at 6 ports in 50 hours, on the Bhavnagar line, at 4 ports in about 20 hours, on the Jaigad line, at 9 ports in 12 hours, on the Viziadrug line, 8 at ports in 9½ hours, and on the Panjim line, at 8 ports in 11 hours. Appendix D illustrates the Company's services.

The chief population carried on the important passenger lines, *viz.*, those South of Bombay, consists of labourers, who come up to Bombay for work in the mills, docks, etc. The effect of a radical enhancement of the average space allowance calls, therefore, for particular examination as to its effect on the industrial development of Bombay. An expert witness, controlling the labour of a large group of mills, expressed the fear that an increase in the fares might conceivably lead to a strike in the cotton mills. The steamers on these lines carry their maximum frequently, and a high average very frequently, as may

be seen from the figures given by the Company in their letter No. 1495/644, dated the 28th July 1916, to the Sanitary Commissioner to the Government of India :—

Goa Line.

"Satyavati" carried its full complement in 6 voyages out of 86.

Vizadrag Line.

"Omnavati" carried its full complement in 12 voyages out of 54.

"Shastri" " " " " " 8 " " 58.

"Rajapuri" " " " " " 5 " " 28.

Jaigad Line.

"Zuari" carried its full complement in 17 voyages out of 76.

"Kalinadi" " " " " " 15 " " 58.

"Fairy Queen" " " " " " 16 " " 48.

"Shastri" " " " " " 12 " " 46.

"Padmavati" " " " " " 11 " " 52.

"Omnavati" " " " " " 7 " " 32.

On the last 2 out of these 3 lines, the normal condition of affairs is one in which something approaching the maximum complement is carried. The figures for the 3 lines are given in the attached statement, which omits middling and low averages :—

Steamer.	Complement.	Average number of passengers.		Remarks.
		Outward voyage.	Inward voyage.	
		<i>Goa Line.</i>		
"Padmavati"	684	461		7 vessels on the run. The remaining 6 did not carry a high number of passengers.
		<i>Vizadrag Line.</i>		
"Fairy Queen"	684		515	All 8 vessels on the run show a high average number, principally on the inward run to Bombay.
"Padmavati"	684		498	
"Omnavati"	684	470	519	
"Zuari"	750		585	
"Shastri"	732		586	
"Kalinadi"	792		533	
"Rajapuri"	727		560	
"Rukmavati"	694	555	552	
		<i>Jaigad Line.</i>		
"Zuari"	750	618		All 8 vessels on the run show a high average number of passengers both outwards and inwards, but mostly outwards from Bombay.
"Kalinadi"	792	581		
"Fairy Queen"	684	563		
"Shastri"	732	592	475	
"Rajapuri"	727	594	555	
"Padmavati"	684	587	487	
"Omnavati"	684		490	
"Rukmavati"	694	524	514	

These steamers have two large passenger-carrying decks. The upper of these measure at 6', and the bulk of the lower at 6' also (since the between deck is small, and consequently the airing space to be reserved on this deck is small also). The condition of crowding is therefore great.

The Indian Co-operative Navigation and Trading Company, Limited, with a small fleet of two steamers, designed on the same lines as the Bombay Steam Navigation Company's passenger ships, runs daily to Panjim and 6 intermediate ports, and also carries a high average number of passengers per voyage. Both Companies have recently started an intermediate class of deck passenger accommodation, in which 7½' instead of 6' is provided for each passenger.

In 1889-90 the number of passengers carried in, or from, the Bombay Presidency was :—

" Short " voyages (a)	To ports in the Province	6,39,695
	(b) To ports outside the Province	11,444
		<hr/> 6,51,139
" Long " voyages (c)	Approximately	4,500
		<hr/> 6,55,639

The figures of recent years, pre and post-war, have been :—

	Pre-war.		Post-war.	
	1912.	1913.	1919.	1920.
A. Between Bombay, Karachi and intermediate ports and <i>vice versa</i> , and Bombay, Bhavnagar and intermediate ports and <i>vice versa</i> .	1,39,626 (744 voyages.)	1,42,594	98,161	1,23,294
B. Interportal traffic between Northern ports.	71,361½ (654 voyages.)	73,214	34,932½	42,348½
C. Between Bombay-Jaigad and intermediate ports, and Bombay-Goa and Presidency ports North and South and <i>vice versa</i> .	10,48,709 (2,260 voyages.)	10,62,423	9,27,092½	9,90,524
D. Interportal traffic between Southern ports.	2,29,987 (2,260 voyages.)	2,45,900	2,16,908	2,34,578½
	<hr/> 14,89,683½	<hr/> 15,24,131	<hr/> 12,77,034	<hr/> 13,90,745

The Bombay traffic has more than doubled in the last thirty years.

B. Bay of Bengal, West.

South of Mangalore there is no regular service of passenger steamers. In the Gulf of Manaar, the British India Steam Navigation Company, Ltd., run a regular service between Tuticorin and Colombo. This service—approximately 12 hours—used to be a daily one, but on the opening of the Danushkodi-Taliamaner route—1½ hours—it became bi-weekly, and the bulk of the passenger traffic has now gone north to Danushkodi-Taliamaner. Some 20,000 passengers annually are carried from Tuticorin to Colombo and *vice versa*, and about 110,000 each way between Taliamaner and Danushkodi. The latter route carries the bulk of the plantation labour from Southern India to Ceylon, on steamers belonging to the South Indian Railway Company. The Ceylon Steamship Company, which maintains a regular service round Ceylon in either direction, touches at Paumban after, or before, Jaffna, but the passengers carried to or from India are few.

From Madras two regular services are in existence, one to the Straits Settlements, a round trip, as follows:—Madras, Pondicherry, Cuddalore, Karikal, Negapatam, Penang, Port Swettenham, Singapore and back to Madras,

the bulk of the passengers embarking at Negapatam; the other direct from Madras to Rangoon. There is a weekly steamer each way on both of these runs. The former service carries labourers, say about 90,000 per annum outwards, to the Straits Settlements and the Federated Malay States plantations, the number carried being pretty well divided between the 12 months. Features of this trade are the relatively high percentage of women and children carried, the fact that the Straits Settlements authorities regulate the trade, and that meals are included in the cost of the ticket. The Madras direct service carries about 30,000 each way in a year.

North of Madras there is a weekly service each way between the Coromandel ports and Rangoon, as follows:—Cocanada, Vizagapatam, Bimlipatam, Calingapatam, Baruva, Gopalpur, Rangoon and *vice versa*, say 50,000 each way in a year. There is an outward rush for the Burma harvest in November and December, and a backward rush after the harvest in March, April and May. The Burma runs carry also many industrial labourers. The British India Steam Navigation Company, Ltd., has a monopoly of the passenger traffic between Madras and Burma and Madras and the Straits Settlements.

There is no regular service north of Gopalpur until the Calcutta-Chandbally run is reached. From Calcutta to Chandbally (in the Province of Bihar and Orissa) there is a bi-weekly service maintained by a steamer of the India General Navigation and Railway Company, Ltd. The run lasts 20 hours, of which $4\frac{1}{2}$ hours are at sea, and the remainder in the Hooghly, the sea portion of the voyage being usually traversed after dark. The ship is in principle of the same design as the purely passenger steamers of the Bombay Steam Navigation Company, and has two passenger carrying decks, *viz.*, a Shelter deck with opening shutters, and, above that, a Shade deck. Both count as Upper decks and carry passengers at 6' superficial space, without provision of airing space.

The chief regular passenger runs from Calcutta are:—

- (a) To Rangoon direct.
- (b) To Singapore *via* Penang.

Both of the above services are maintained by the British India Steam Navigation Co. Messrs. the Indo-China Steam Navigation Co. also run a service to Singapore.

- (c) To Chandbally (see above).

Although the Madras-Straits Settlements and Coromandel-Rangoon runs include several coasting ports in Madras, there is very little interport traffic, this no doubt being mainly due to the existence of a railway along the coast. The passenger traffic is, therefore, in Madras, almost entirely extra-provincial, offering in this respect a contrast to Bombay. As in Bombay, the difficulties of embarkation and disembarkation are considerable, the only ports where steamers can come alongside being Danushkodi and Madras. Everywhere else steamers anchor in an open roadstead, sometimes as much as 5 miles off shore, and the passengers are embarked or disembarked in boats: at Coconada and Cuddalore in large cargo boats, at the other parts in *masula*, or surf boats, specially designed to withstand heavy bumping in the surf. In the open roadsteads passengers are embarked or disembarked by means of stages, let down by ropes from the ship's deck, so as to lie above the cargo or *masula* boat. The ship's lascars, standing on the stages, haul the passengers up from the boat as it rises on a wave.

A feature of the trade on the runs from Madras is the use of sleeping platforms in the Between decks. These were, almost without exception, stated by witnesses to be popular with the passengers and to add materially to their comfort. The 5' rule, under which deck passengers can be carried in the Between decks at a space allowance of 5 superficial feet each, subject to the condition that the whole of the Upper deck, or Upper decks if there are more than one, is to be left vacant for them, as airing space, is peculiar to the runs between Madras and Burma. It is discussed separately below. A special type of passenger steamer has been devised for the traffic in the Bay of Bengal. This has three passenger-carrying decks, a large Between deck, a large, but

smaller, Shelter deck, ventilation in which is mainly afforded by means of large opening shutters, and a large, but smaller, Shade or 2nd Upper deck. We have taken this as one of the main types of steamers, for the purpose of calculating the effect of the new space allowances suggested.

According to an existing rule, the voyage from Burma to Madras ports during the Foul season counts as a "Long" voyage, and passengers must be provided with additional space allowance accordingly, whatever the scheduled duration of the voyage may be. On the other hand, all other voyages between Madras and Burma count as "Short" voyages, whatever the scheduled duration of the run. When the Act of 1887 was passed, the duration of voyages from Burma to Madras was generally, in the monsoon, over 120 hours. The introduction of faster steamers has altered this, and all the runs are now less than 120 hours. The distances and durations are approximately; Gopalpur-Rangoon, 755 miles, 3-days; Rangoon-Madras, 1,020 miles, 3½ days; Negapatam-Penang, 1,270 miles, 4½ days. Long voyages from Madras ports are practically non-existent.

The Act has been applied in Madras to steamers carrying more than 30, and to sailing ships carrying more than 15, passengers from Madras to the Straits Settlements or Ceylon. (*Vide* Notifications by the Government of Madras, Nos. 308 and 275, dated respectively, the 7th August 1888 and 4th July 1904.)

The chief figures in the traffic from Madras ports in 1920 were:—

From Tuticorin to Colombo	18,982	
„ Colombo to Tuticorin	21,666	
„ Danushkhodi to Taliamaner	1,29,591	
„ Taliamaner to Danushkhodi	1,10,173	
„ Negapatam to Straits Settlements	62,617	
„ Straits Settlements to Negapatam	8,220	
„ Madras to Straits Settlements	47,690*	*about 32 per cent. females and children.
„ Straits Settlements to Madras	37,160†	†about 25 per cent. females and children.
„ Madras to Burma	36,219‡	‡about 28 per cent. females and children.

Coromandel traffic—

From Gopalpur to Rangoon	15,456
„ Baruva to „	9,245
„ Calingapatam to „	5,155
„ Bimlipatam to „	1,767
„ Vizagapatam to „	11,154
„ Coconada to „	17,168
Total	59,945

The traffic between Madras (west coast) ports and Bombay numbered about 14,000, the majority of passengers going through to Bombay.

In 1891 the passengers carried on the Chandbally run were:—

Calcutta-Chandbally	66,952
Chandbally-Calcutta	68,259

The figures in 1919-20 were:—

Calcutta-Chandbally	31,150
Chandbally-Calcutta	30,609

The decline is no doubt due to improvements in railway communication inside the coast line.

The chief figures in the traffic from Calcutta in 1919-20 were:—

Calcutta to Rangoon	85,199	} No inward figures are available.
„ „ Port Blair	2,316	
„ „ Penang	1,764	
„ „ Singapore	2,333	

C. Bay of Bengal, East.

There is no regular service by sea at present between Calcutta and Chittagong. From Chittagong the British India Company runs a regular weekly service each way—Chittagong—Akyab—Sandoway—Rangoon, with additional steamers, as inducement offers; and also an occasional service between Chittagong and Akyab (16 hours). The passengers to and from Akyab by all lines number about 11,000 yearly. To and from Rangoon about 12,000 are carried. The Retriever Flotilla of 3 ships runs three times a week each way between Chittagong, Cox's Bazar and Maungdaw, the journey taking 7 hours and being completed during daylight—Passengers by this line number about 10,000 to Cox's Bazar, and 10,000 to Maungdaw. Figures for the reverse journeys are not available. The India General Railways and Navigation Company, Limited, run a regular service from Chittagong to Barisal, on steamers which carry both a (Bengal) Inland Steam Vessels certificate and a Native Passenger Ships certificate. The latter is needed owing to the fact that a portion of the journey is carried out at sea. The number carried to Sanua on this run is about 10,000 per annum. The Asiatic Steam Navigation Company ran a bi-weekly service between Rangoon and Chittagong before the War, but the regular service has now been discontinued. Not much luggage is taken to Burma on the outward runs from Chittagong: more, but still not much, is brought back. The services from Rangoon to Madras ports, and Rangoon to Calcutta have been described under the heading *Bay of Bengal, West* above. Other regular services to places south of Rangoon are:—

- (a) A weekly service, maintained by the British India Company between Rangoon, Tavoy and Mergui.
- (b) A coasting service, maintained by the same Company, in the Mergui Archipelago to small ports north and south of Mergui.
- (c) There is a service in the waters of the Archipelago maintained by a small fleet of steamers, the owners of which are an Indian firm.
- (d) The Eastern Shipping Company, registered in the Straits Settlements, maintain a fortnightly service between Penang, Mergui, Tavoy and Moulmein.

In some of the minor ports in Burma the anchorage is in an open roadstead, but the coasting passenger traffic is small, and difficulties of disembarkation have not attained the dimensions of Madras or Bombay. Better policing arrangements for the *sampans*, or harbour boats, are said to be wanted in Chittagong.

The chief figures from Chittagong were as follows:—

Chittagong to Sundip	6,403	} No inwards figures are available.
" " Hatiya	1,309	
" " Cox's Bazar	10,364	
" " Sanua	10,752	
" " Akyab	11,649	} No inwards figures are available.
" " Maungdaw	10,231	
" " Rangoon	11,789	

The main figures in the passenger traffic from Burma ports in 1920 were:—

<i>Short Voyages.</i>	
Rangoon to Tavoy	Not stated.
Tavoy " Rangoon	11,656
Rangoon " Mergui	11,264
Mergui " Rangoon	6,681
Tavoy " Mergui	3,404
Rangoon " Madras	14,044
" " Coconada	21,828
" " Barua	2,540
" " Calcutta	101,227
" " Chittagong	15,316
Akyab " "	10,480
" " Rangoon	2,169
<i>Long Voyages.</i>	
Rangoon to Coconada	3,424
" " Madras	12,844
" " Calcutta	1,183
" " Amoy	1,662

CHAPTER II.

8. The evidence on nearly all the technical points was very conflicting, but Evidence adduced before the Committee. there was general agreement that conditions require to be improved. The bulk of the passengers come from classes who appear to be content with things as they are. There is no doubt that what the labouring classes, who form 90 per cent. of the deck passengers, want is quick transit and a cheap fare. The need for amelioration of conditions was pressed strongly by Government officers, actuated by humanitarian motives, and by witnesses coming from the better educated of the deck passenger class, similarly actuated.

9. The Commission of 1890 had certain experiments made, the results of Experiments in accommodation of passengers within a given space. of which are given at pages lxii, lxiii and lxix of their Proceedings, as follows:—

I

A letter received from Mr. H. Graham Tayler, Assistant Commissioner at the Andamans, who was in charge of a batch of convicts lately despatched to Port Blair in the S. S. "Kohinur" giving information respecting certain experiments carried out on board that vessel during the voyage in regard to space required for convicts on boardship.

"In a division measuring $27' 9'' \times 18' = 499\frac{1}{2}$ sq. ft., we first packed 83 men, *i.e.*, allowing $6' \times 1'$ or $3' \times 2'$ per man, and the result showed very much too much overcrowding; the men in some places overlapping each other, and all lying down on their sides.

"In the same spaces ($499\frac{1}{2}$ sq. ft.) we then arranged 55 men, *i.e.*, allowing $6' \times 1\frac{1}{2}'$ or $3' \times 3'$ per man.

"They lay in three rows, close up to each other on their backs; 18 men in two rows and 19 in the other without overlapping. I consider this allowance ($6' \times 1\frac{1}{2}'$) sufficient. When it is absolutely necessary to send a larger number of convicts than usual in fair weather, with open ports, the allowance should certainly never be less than $6' \times 1\frac{1}{2}'$ per man.

With the allowance of $6' \times 2'$ per man, they are, of course, as comfortable as can be expected under the circumstances."

"In considering this opinion it should be remembered that the convicts experimented with were fettered and had handcuffs attached to their wrists."

II

"The Commission first proceeded to No. 3 compartment on the 'tween decks and there measured off a space of 772 superficial feet, representing 19 feet in length from the fore end of the compartment with the full width of the deck (40 feet, 8 inches). The accommodation was for 128 passengers, at 6 superficial feet per adult, but as the projections, etc., came to 3.8 feet, one adult was removed, thus making a total of 127 adults. These passengers were asked to lie down with the ordinary baggage they were travelling with, which baggage in the opinion of the Commission, they could not be expected to part with for stowage in the hold. In the opinion of the Commission, this space did not admit of each passenger lying down although they were arranged so as to occupy the least possible space.

"From 127 were removed 43 adults, as representing the one-third, and the remaining 84 were then made to lie down in the 772 superficial feet, thus giving each passenger 9.2 superficial feet. In this space, the Commission found that the passengers, with their personal baggage as before, could lie down comfortably without being huddled. In this instance the Commission came to the conclusion that the number of passengers could not be materially increased within the above space, without interfering with the comfort and convenience of the passengers."

10. We have not considered it necessary to conduct further experiments, and the President is prepared to accept the Commission's conclusion that the

least average space in which a deck passenger can lie down, with the minimum necessary personal effects, is 9.2 sq. ft. Mr. Kamat and Dr. Batra consider that the standard of personal comfort having risen since the 1890 Commission reported, as also the quantity of luggage usually carried by the average deck passenger, the least average space required by a deck passenger, with the minimum of personal effects, should be more than 9.2 sq. ft.; and they think 11' ought to be the datum line, on the ground that a man's average height is 5' 6" and the minimum breadth necessary for him to lie down in is 2', including some space for luggage. On the other hand, Mr. Ritchie and Captain Ste. Croix observe that there are certain items of deck space, *e.g.*, hatches, passages, etc., which although not measured for deck passengers are in practice available for them, and in their opinion, the least average space with, as before, the minimum of personal effects, is less than 9.2 sq. ft., and they cannot accept 9.2 sq. ft. as a basis of calculation.

The President, Mr. Kamat and Dr. Batra consider that a stage of congestion is approaching when a typical (between deck-upper deck) steamer is carrying its full complement at the $\frac{8' \text{ occupation space} + 4' \text{ airing space}}{6' \text{ occupation space}} : \frac{\text{between deck}}{\text{upper deck}}$ rate, the all-round average of which works out to 9.8 feet and that great overcrowding exists when a steamer of the Bombay passenger type is carrying its full complement (all round average, 6.6). Mr. Ritchie points out that the complement is carried, at the outside, for 12 hours, either by day or night. The President accepts it as a general principle that on voyages lasting through the whole or a material portion of a night, 9.2 sq. ft. at least, and, if possible, more should be provided for each deck passenger. The views of the members representing the Chambers of Commerce are contained in dissenting minutes.

Further, our inspections of vessels have convinced us that 9.8 sq. ft., as at present provided on a ship of the Between deck-Upper deck type referred to, with the ordinary proportions of clear space in the Between and Upper decks, does in actual practice, in many services, mean overcrowding, owing to the amount of luggage carried. Although we recommend that owners should take all steps possible to segregate heavy luggage, we think it necessary to accept the carriage of luggage in passenger space as inevitable, and to take this fact into account when fixing the average space allowance. The factor, however, does not arise for consideration in the case of the heavy, purely passenger, runs mostly on the Bombay coast, on which the passengers carry relatively little luggage, *vide* paragraphs 19 and 20 below.

11. Expert witnesses often recommended a definite increased figure of Main type of steamers in the passenger trade. average space allowance, but in few cases realized what the actual effect on the carrying capacity of a typical steamer would be, and suggestions intended to reduce the maximum number of passengers carriable would in practice often have had exactly the opposite effect. It is, indeed, essential, before recommending a particular figure, to work out its effect on a typical ship or typical ships.

The necessity of applying such a test presupposes the discovery of what a typical ship is, *i.e.*, what the approximate proportions of clear space on the various passenger-carrying decks are. Probably no two ships agree exactly in the proportion of clear space provided on the Upper deck or decks to that provided on the Between deck or decks, but the Committee consider that steamers plying in India can be divided broadly into four main types:—

- (A) a type with a large Between deck and a large, but smaller Upper deck. The Upper has to carry the latrines, washing places, galleys and sometimes saloons or other structures, and its clear space is curtailed in consequence. This type is common in all Indian waters, and is designed to carry passengers or cargo indifferently in the Between deck.

Expert witnesses agreed generally that the Committee's figure of relative open space

- (1) 1,000' in the Between deck, and

(2) 700' in the Upper deck
was correct for this type.

(B) A type with small Between decks, and two large Upper decks. This is the usual type on the heavy, purely passenger trade south of Bombay, known as the "Ferry" Steamers. Neither of the Upper decks is suitable for cargo. No cargo is carried on these steamers. These steamers, many of which the Committee visited, and on one of which they travelled from Bombay to Goa, carry passengers on the uppermost deck at 6' [Fair season], on the bulk of the middle of the three decks at 6' also, not seldom carry the full complement, normally carry a number approaching the complement, and are undoubtedly much overcrowded. These steamers feed the Bombay mills, and how to deal with them was the most difficult question that presented itself to the Committee. For this type we assume a relative proportion of clear space in the various decks as follows:—

- (a) 300' in the Between deck;
- (b) 1,000' in the Main (or 1st Upper) deck;
- (c) 1,000' in the Shade (or 2nd Upper) deck.

(C) A type, chiefly occurring in the Bay of Bengal services of the British India Steam Navigation Company, which has three large carrying decks, the two uppermost of which count as Upper decks, for the purpose of carrying passengers at the rate of 6' (Fair season) or 9' (Foul season) on a "Short" voyage. In principle the type is the same as the last, but the relative proportions of clear space are different. A fair division of the clear space on this type would be:—

- (a) 1,000' in the Between deck;
- (b) 400' in the Main (or Shelter or 1st Upper) deck;
- (c) 400' in the Shade (or 2nd Upper) deck.

The first Upper deck is encumbered with the crew's quarters, the deck above that with miscellaneous structures.

The advent of this type of steamer led to discussion whether the middle of the 3 decks, in effect a Main-deck covered by a roof and closed at the sides, should count as an Upper between deck, or as an Upper deck proper. If the latter, the owners could carry passengers on it at 6' each (Fair season, "Short" voyage) and need provide no airing space for them on the deck above, the uppermost of the three: if the former, for every passenger carried on it, 4' airing space would have to be reserved on the uppermost deck. It was decided that the middle deck was an Upper, not a Between deck, and could carry at 6'. The Committee agree that this decision was correct, having regard to the fact that at the side there are large ports or shutters that can be opened for purposes of ventilation.

(D) A fourth class of steamer is the type employed by the Bombay Steam Navigation Company on other than its daily runs, *viz.*, on the passenger and cargo runs to Karachi, within the Gulf of Cutch, to Bhavnagar and to Mangalore. In this type there are two main passenger-carrying decks, and in addition a poop deck. The length is limited to about 275 feet, owing to restrictions of anchorage and turning space.

The proportionate space may be expressed as:—

(a) In the Between deck	1,000'
(b) in the Upper deck	900'
(c) in the Poop deck	300'

12. As an instance of the advisability of testing any new figure recommended, by applying it to a typical case, it may be noted that several of the Space allowances. Recommendations of the 1890 Commission. space averages recommended by the 1890 Commission, with the express object of

reducing the number of passengers carriable, would in practice have resulted in enabling more, not fewer, passengers to be carried :—

Example 1.

Recommendations 2 (c) and 11 (c). "Short" voyage, Fair season.

Typical steamer ; passenger and cargo type—universal.	Carries at present passengers at $\frac{6' + 4'}{6'}$	Would carry according to Commission's recommendation passengers at 9'.
(a) Between deck 1,000'	168	
(b) Upper " " 700'	6	
Total 1,700'	172	$\frac{1,700}{9} = 188$
Increase	16 in every 1,700'	

Example 2.

Recommendations 2 (c), 13 and 8. "Short" voyage, Foul season.

Typical steamer ; passenger and cargo type—universal.	Carries at present passengers at $\frac{9' + 4'}{9'}$	Would carry according to Commission's recommendation passengers at 7'.
(a) Between deck 1,000'	111	142
(b) Upper " " 700'	28	...
Total 1,700'	139	142
Increase	3 in every 1,700'	

The above are important classes of voyage, including runs by which considerable numbers travel, and in each case the Commission's recommendation—if effect had been given to it—would have failed to carry out their intention.

13. The object of the present enquiry being to ascertain what reasonable

Unsuitability, for the present enquiry, of classification of voyages adopted by Life Saving Appliances Committee, at sea, our classification of voyages

- (1) Indian Foreign Trade voyages to countries parties to the International Convention for the Safety of Life at sea.
- (2) Indian Foreign Trade.
 - (a) Emigrant voyages;
 - (b) Native Passenger Ship voyages, other than to the Red Sea or Persian Gulf.
- (3) Indian Foreign Trade ;
 - (a) Pilgrim Ships;
 - (b) Native Passenger Ship voyages to Red Sea or Persian Gulf.
- (4) Indian Home Trade (General).
- (5) Indian Home Trade (Coasting).
- (6) Indian Home Trade, Local.
 - (a) at sea.
 - (b) in partially smooth waters.
- (7) Sailing vessels.

Classification of voyages.

comforts should be provided for deck passengers, not how to secure their safety below is materially different from that proposed by the Life Saving Appliances Committee, and we do not consider that their classification (which is shown in the margin so far as it concerns Native Passenger Ships), is suitable for the purpose of fixing average space allowances or other amenities. The Committee observe that the Board of Trade recognises twelve classes of voyage for the purpose of Life Saving Appliances, but 5 only for the fixation of space allowances, *i.e.*, it treats the two questions independently.

14. The attached Table compares the classes of voyage and space allowances :—

- (a) prescribed under the Native Passenger Ships Act;
- (b) prescribed under the (British) Merchant Shipping Act, 1894; and
- (c) recommended by the Native Passenger Ships Commission of 1890.

Here again no exact parallel can be drawn between the classes of voyage within the three different categories, but the Table is arranged so as to show the broadly corresponding classes in juxtaposition, and the classes within each category are arranged in ascending order of space allowance, *i.e.*, the shortest voyage, with the smallest space allowance, appears at the head of the Table, and the longest at the foot.

(a) Space allowances. Deck passengers. Native Passenger Ships Act, 1887.				(b) Space allowances for 3rd class (steerage, deck) non-emigrant passengers under the (British) Merchant Shipping Act, (Board of Trade Instructions as to the Survey of Passenger Accommodation, 1912).				(c) Space allowances for deck passengers recommended by the Native Passenger Ships Commission, 1891 (Recommendations 2, 11, 13).			
Classification of voyage.		Square feet.	Remarks.	Classification of voyage.		Square feet.	Remarks.	Classification of voyage.		Square feet.	Remarks.
§ 16 Fair season, short voyage.	(a) Each Upper deck passenger.	6	.....	Partially smooth water (Instruction 33).	(a) On main deck . . .	6	Reduction in the number of passengers allowed is made in winter months.				
	(b) Each Between decks passenger.	10	6' in the Between decks and 4' in the Upper deck.	.....	(b) On top of saloons on main deck.	9					
					(c) Beneath main deck . . .	9					
				Coasting excursions (day light and summer season) (Instruction 31).	Same as Home Trade (b) below but maximum number of passengers may be increased, see Remarks column (Instruction 32).	9	(a) Total number of passengers not limited to gross tonnage (Instruction 32). (b) Some saloon top space may be measured for deck passengers (Instruction 33).	Excursions (day light and fair season only).	For every passenger.	6	On any deck exposed or not.
§ 16 Foul season, short voyage.	(a) Each Upper deck passenger.	9	.....	Home Trade (Instruction 16).	(a) If in compartments, 72 cubic feet per berth, e.g., if height of deck 6 feet (Instruction 20).	12	(a) Decks measured (Instructions 21, 22)— (i) Main; (ii) the deck beneath the Main; (iii) quarter deck. (iv) in certain cases a portion or the whole of promenade, poop, or bridge decks. (b) Total number of passengers in no case to exceed gross tonnage; and in certain cases to be a specified figure less than the gross tonnage (Instruction 25). (c) Total number of 2nd class and steerage (deck) passengers not to exceed 3 times the number for whom sheltered space provided, viz., 6 x shelter space in square feet + 9. (Instruction 24).				
				.....	(b) If on deck (Instruction 23).	9					
	(b) Each Between decks passenger.	18	9' in the Between decks and 4' in the Upper deck.								
				Foreign Trade (Instruction 13).	For every passenger 72 cubic feet, e.g., if decks 6' apart.	12	(a) Exposed surfaces not measured for passengers (Instruction 14). (b) Total number of passengers not limited to gross tonnage (Instruction 25).	Fair and Foul season, Long voyage (over 120 hours).	Do.	15	9' in the Between deck and 6' in the Upper deck.

N.B.—(i) Orlop deck rule not reproduced, ships with orlop decks being comparatively few.

(ii) The Board of Trade Instructions also contain regulations as to space allowances for voyages in Rivers or Smooth waters. As voyages under the Native Passenger Ships Act are wholly or partly made at sea, these regulations have no analogy with Indian conditions and are not reproduced.

11

The evidence of expert witnesses as to the suitability to Indian conditions of any of the 3 schemes of classification is conflicting. As regards the Board of Trade classification, the Committee agree that no analogy can be drawn between voyages in European and voyages in Indian waters. We are however agreed that the Board of Trade list is superior to the existing Indian classification in one important respect, *viz.*, elasticity. The existing Indian classes are nominally 3 in number (Fair season, Short; Foul season, Short; Fair and Foul seasons, Long), but are practically two, since the Long Voyage is a rarity. The Board of Trade has four sea-going classes (Partially smooth waters, Excursion, Home Trade, Foreign Trade). We think it important that the classification adopted for India should suit the main existing trades, and consider that these call for the separation of more than 2 classes of voyage. A closer sub-division is particularly needed, since we recommend raising the space allowances generally, and this may compel owners to add to their fleets in order to carry the existing traffic, and the effect of this may be an increase in fares. If, in some special cases, we can allow owners to carry passengers at space allowances not much greater than at present, there will be less inducement to them to raise fares.

15. There was pretty general agreement among witnesses that more space was needed on a "Long" than on a "Short" voyage, and in the Foul than in the Fair season. With the latter opinion we agree. As regards the former, the fact that there are hardly any "Long" voyages at present suggests either that the "Long" and "Short" voyages are at present differentiated wrongly, or that the "Long" voyage class is not wanted at all. A majority of the Committee think that the limit should be reduced to 72 hours from 120 hours (for the longest section of a voyage). Mr. Ritchie and Captain Ste. Croix have expressed their views in a minute of dissent.

16. The existing law contemplates that each passenger in the Between deck, in addition to the same amount of actual occupation space as is prescribed for the passenger on an Upper deck, shall have reserved for him certain airing space on the Upper deck:—

Fair Season, Short voyage; 6' occupation space and 4' airing space.

Foul Season, Short voyage; 9' occupation space and 4' airing space.

For a "Long" voyage, whether in the Foul or Fair Season, every passenger carried has to be provided with 6' airing space in addition to 9' occupation space.

Most of the expert witnesses recommended the abolition of airing space, and the substitution of a flat rate of space allowance for the Between deck passenger, pointing out that Between decks are now never less than 6' in height, and are often 8' *i.e.*, that they are much better ventilated than was the case in 1887, when the present Act was passed: and that the rule is practically inoperative, since owners do not assign particular passengers to the Between decks and the remainder to the Upper decks, or mark off on the Upper deck a special airing space for the Between deck passengers. What they do is to open as many compartments of the ship as will accommodate the total number of passengers expected, and allow them to settle down in the Between or the Upper decks as they please, or as they find room. And we were informed that the Between deck passengers actually spend very little of the voyage on the Upper deck. On the other hand our observations have satisfied us that the airing space is used by the Between deck passengers, if only for short spells at a time, and is appreciated by them. We agree that it would make greatly for simplicity to have a flat rate of space allowance for each deck, without the provision of additional airing space allowance for the Between deck passengers. In particular, the present method of calculation is not understood by the public (nor indeed, always, by the experts), and consequently does not lend itself to easy comprehension. A method of calculation which the public can understand ought, if possible, to be adopted. At the same time a real advantage of the prescription of airing space for the Between deck passengers is that it precludes owners from shutting out Between deck passengers altogether from the exposed deck. But the risk of owners doing this is in practice, remote, since they

will continue to carry passengers on the Upper decks, and are not likely to enquire whether any passenger found thereon is an Upper or a Between deck passenger, any more than they do at present. Captain Ste. Croix and Mr. Ritchie dissenting, we think, therefore, that a flat rate for all decks may be accepted. There should however, be a provision in the Act that, subject to the requirements of navigation, all exposed decks not reserved for higher classes, or occupied by passengers, shall be made available to Between deck passengers, as airing space. And if the Inspecting staff recommended in a later paragraph should find the Between deck passengers kept out of the exposed deck, the position will need to be reconsidered.

17. We consider that the 1890 Commission were right in recommending an increase in the number of classes of Classes of voyage now recommended. They recommended six classes as follows :—

- (1) Excursions.
- (2) Shelter port, Fair season.
- (3) Shelter port, Foul „
- (4) Short voyage, Fair season.
- (5) Short voyage, Foul „
- (6) Long voyage, Fair and Foul seasons.

The majority of the present Committee suggest 6 classes as follows :—

- (1) Short voyage, specified runs.
Festival seasons. Fair season only, limit between terminal points, 24 hours.
- (2) Short voyage, specified runs.
Non-festival seasons. Fair season only, limit between terminal points, 24 hours.
- (3) Short voyage, non-specified runs, Bombay coast only : steamers of 275' or under in length ; limit between terminal points, 72 hours. Fair season.
- (4) Short voyage, non-specified runs, longest section 72 hours, other steamers ; Fair season.
- (5) Short voyage, non-specified runs, longest section 72 hours ; Foul season.
- (6) Long voyage, Fair and Foul seasons, longest section over 72 hours.

The first 3 classes are meant to meet the special conditions of the traffic on the Bombay coast.

18. Nearly all the expert witnesses varied as to what space allowances should be recommended, whilst almost all agreed that the allowances should be greater than at present. Whilst there is no difference of opinion as to the need of increasing the space allowances, the members of the Committee differ as to the degree of increase that should be recommended, and paragraphs 19-24 and 33 represent the views of the President, Mr. Kamat, and Dr. Batra. The allowances proposed in these paragraphs are materially higher than those deemed suitable by Mr. Ritchie and Captain Ste. Croix, *vide* their separate Notes. These the majority of the Committee consider might be raised, without much risk of a great increase in fares.

19. *Specified runs : Festival seasons.*—This is recommended in order to meet the case particularly of the purely passenger traffic (mostly of millworkers) between Bombay and the coast ports South, during festival seasons. It is at present carried in steamers with 2 large Upper decks, paragraph 11 (B) above. We recommend that the Local Government should be given power to allow steamers to carry passengers at the rate of 9' (instead of at $\frac{8'+4'}{6'}$ as at present)

Description of the classes and space allowances recommended.
Specified runs.
Excursion runs.

during holiday seasons, a special certificate being obtained on each occasion, and the concession being limited to voyages in the Fair season, of 24 hours duration or less. We understand that the traffic at the time of the *Holi* and *Dewali* festivals is considerable, and the passengers concerned would willingly put up with crowding.

Other Local Governments may be given power to deal with similar cases, if any, in their jurisdictions. The reduction would amount to 27 per cent. for a steamer of the typical Bombay kind, having clear space on the various decks in the following proportions:—

- (a) Between decks 300' ; carries at present 50 ; would carry 33.
- (b) Main (or 1st Upper) deck, 1,000' ; carries at present 133 ; would carry 111.
- (c) Shade (or 2nd Upper) deck, 1,000 ; carries at present 166 ; would carry 111.

Total 2,300' : carries at present 349 : would carry 255.

A reduction, for every 2,300' of deck space, of 94 passengers, or 27 per cent. The average space would become 9 feet against 6.6 feet at present.

20. *Specified runs: Non-festival seasons: 24 hours.*—We recommend a special category of runs, to be scheduled (as in the *Excursion* voyages in the Board of Trade *Instructions as to Survey, etc.*), in order to meet the case of the heavy fine weather passenger traffic on daily services from Bombay to ports Southwards in non-festival seasons. We think that the voyage should be limited to 24 hours between terminal points, that the concession should be for the Fair season only, and the President considers that the owners should be allowed to carry at the rate of 9.5' on any deck, as against the existing rate of $\frac{6'+4'}{6'}$. In a typical steamer of the purely passenger type (as above) in every 2,300 feet of clear deck space, 241 passengers would be carried against 349 at present:—

	Carries at present.	Would carry.
(a) Between deck 300'	50	31
(b) Main (or 1st Upper) deck 1,000'	133	105
(c) Shade (or 2nd Upper) deck 1,000'	166	105
Total 2,300'	349	241

a reduction of 108 out of 349 passengers in every 2,300 square feet, or 31 per cent. The average space all round would become 9.5' against 6.6'. In an ideal condition of affairs the average space allowance ought to be greater. A figure as low as 9.5' is recommended only on a careful consideration of the magnitude of the traffic, the benefit it brings to the deck passengers themselves in the form of the high wages earned in Bombay, the need of a large labour force for the industrial development of Bombay, and the likelihood that passengers might be shut out altogether should a much enhanced space average be enforced. Taking into consideration the special circumstances of the Bombay traffic, Mr. Kamat and Dr. Batra would not go below 10' for this class of voyage, *vide* paragraph 10, and separate Note attached.

Among the chief runs that will fall to be specified under the 9.5' classification are the following:—

Bombay Steam Navigation Company, Limited.

Bombay daily to Jaigad, 8 intermediate ports, 15 hours.

"	"	"	Viziadrug	7	"	"	20	"
"	"	"	Panjim	6	"	"	24	"

Indian Co-Operative Navigation and Trading Company, Limited.

Bombay daily to Panjim and 6 intermediate ports, 19 hours.

There was a general consensus of expert opinion that the seasons are more clearly marked on the western coast of India than in the Bay of Bengal, and that it is not necessary on that coast to provide sufficient space in permanent shelter for every passenger on an exposed deck in the Fair season, to meet the event of a cyclone. We see, therefore, no objection, so far as Fair season voyages are concerned, to the Bombay type of purely passenger steamer (paragraph 10 (B) above), though it can accommodate very few passengers in the small Between decks. For steamers of the other main types (large Between, large Upper deck or decks) the allowances we suggest are large enough to provide for accommodating all passengers below, in case of need.

21. *Short voyage : non-specified runs, Bombay coast only, steamers of 275' or under, in length : limit between terminal points 72 hours : Fair season.*

This type, paragraph 10 (D) above, carries as a maximum at present at $\frac{6'+4'}{6'}$, for a Fair season "Short" voyage, which is the voyage on which the steamers carry most of the trade, 255 passengers in every 2,200 square feet as follows:—

(a) Between deck,	1,000'; 166
(b) Upper deck,	900'; 89
(c) Poop deck,	300'; 50

allround average 8.6'. An average space allowance of 11 square feet is recommended. The carrying capacity would then become 200 passengers, in 2,200 square feet, a reduction of 55 in 255, or 21 per cent. We do not consider that a greater reduction than this can at present be recommended, without serious dislocation to traffic in Bombay. The average space will be raised from 8.6 to 11'.

22. *Short voyage, non-specified runs, other steamers.—Longest section 72 hours ; Fair season.*

Existing allowances:—

- 6 square feet in the Between deck, plus 4 square feet airing space in the Upper deck, for each Between deck passenger ;
- 6 square feet for each Upper deck passenger ;
- allround averages, see below, 9.8' (two-decked ship) : 9.5' (three-decked ship).

The classification would cover the fair weather runs between Burma and Calcutta, and between Burma and Gopalpur on the Coromandel coast ; and some of the passenger and cargo traffic on the Western coast. It is recommended that the allowance should be raised from $\frac{6'+4'}{6'}$ to a flat rate of 12'. Applying this figure to typical ships, the numbers carriageable will be:—

(i) Passenger and cargo type—two decks, paragraph 11 (A) above:—

(a) Between deck 1,000' would carry	83	} 141 passengers, against 172 at present, (Questionnaire, No. 7), a reduction of 31 passengers or 18 per cent. in every 1,700', and an increase of the average space from 9.8' to 12'.
(b) Upper deck 700 " "	58	

(ii) Passenger and cargo type—three decks, paragraph 11 (C) above :

(a) Between deck	1,000' carries at present, 166, would carry	84
(b) Main (or Shelter or 1st Upper) deck.	400' " " "	Nil. " " 33
(c) Shade (or 2nd Upper) deck.	400' " " "	22, " " 33

Total	. 1,800'	188	150
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A reduction of 38 passengers, or 20 per cent. approximately, in every 1,800' and an increase in average space from 9.5' to 12'.

23. *Short voyage, non-specified runs.—Longest section 72 hours, Foul season.*

The existing allowance is 9' in the Between decks, plus 4' in the Upper deck for each Between deck passenger: and 9' in the Upper deck for every Upper deck passenger. The average space works out to 12.2' (two-decked ship): 12' (three-decked ship).

The classification would cover the case of many voyages from Rangoon to Calcutta or Gopalpur and many in the Western passenger trade. It is recommended that the space allowance should be raised from $\frac{9+4}{2}$ to a flat rate of 14'.

Applying the suggested figure to typical steamers the result becomes:—

(i) Passenger and cargo type (two decks) paragraph 11 (A) above.
Would carry.

(a) Between deck: 1,000'	(a) 71	} 121 passengers, against 139, a reduction of 18 passengers, or 13 per cent. in every 1,700', and an increase of the average space from 12.2 to 14 feet.
carries at present . . . 111		
(b) Upper deck: 700' carries at present 28	(b) 50	
Total	139	

(ii) Passenger and cargo type, three decks (paragraph 11 (C) above):—

(a) Between decks 1,000'	carries at present 111	: would carry 71
(b) Main (or Shelter or 400'	" " "	Nil: " " 28
1st Upper) deck.		
(c) Shade (or 2nd Upper) 400'	" " "	39: " " 28
deck.		
Total	1,800'	150 127

A reduction of 23 passengers, or 15 per cent., in every 1,800' and an increase in average space from 12' to 14'.

24. Long Voyage, Fair and Foul Seasons. Over 72 hours for the longest section of the voyage.

The existing allowance is 9' in the Between deck for every passenger, plus 6' in the Upper deck for every passenger. The average (Questionnaire 8) works out to 15'.

The "Long" voyage (more than 120 hours on the longest section of a voyage) is at present a rarity. A majority of the Committee recommend a revision of the classification of voyages so that a voyage of over 72 hours between ports will count as a "Long" voyage. This will have the effect of converting many voyages which are at present "Short" into "Long". In particular, the voyages from Madras to Rangoon and Negapatam to Penang will (if the recommendation is accepted) become "Long" voyages, and passengers will enjoy the larger space allowance. All the evidence is to the effect that the existing "Long" voyage space allowance (15') is sufficient. We recommend a flat rate of 15', which should be applied to the new classification. Applying it to a Foul Season voyage from Madras to Rangoon, a typical two-decked steamer; *vide* preceding paragraph, at present carrying at "Short", voyage rates 139 passengers in every 1,700', would carry at "Long" voyage rates;

(a) in Between deck—1,000'	} 1,700	113
(b) in Upper deck —700'			15

Total, 113 passengers against 139, a reduction of 26 passengers in every 1,700', or 19 per cent.; the average space allowance would become 15' against 12.2' at present.

25. Existing fleets will not be able to dispose expeditiously of the existing traffic when the allowances are enhanced, and we therefore recommend that a reasonable time should be given, before the new allowances are brought into force.

26. There are some Indian waters in which very short services, wholly or partly at sea, are maintained in small fleets of steamers, *e. g.* :—

Very short voyages.

Danushkodi-Taliamaner	1½ hours.
Chittagong-Maungdaw	7 hours.
Tuticorin-Colombo	12 hours.

On short runs of this kind, we do not think it necessary that cooking galleys or washing places need be provided, and we further think that a specially small space allowance might be permitted. We recommend that it be left to the discretion of Local Governments to allow a rate (not falling below 6") in the case of steamers running on services which do not extend to more than 12 hours between terminal points, and to authorise such steamers to ply without providing cooking galleys or washing places.

27. The number of vessels applying for certificates to carry passengers in Orlop (or lower Between) decks is now few. The existing rules may continue (Notification by the Government of India in the Department of Finance and Commerce, No. 1356, dated the 14th March 1889, [Clause (4) of paragraph (1)] and Section 18 (i) of the Native Passenger Ships Act, 1887). These are that every passenger in an Orlop deck must be provided with 12' *plus* 4' in the Upper deck (Fair season, Short voyage), 15' *plus* 4' (Foul season, Short voyage) and 15' *plus* 6' (Fair and Foul seasons, Long voyage).

28(i) The Committee do not count as an exposed deck, a deck with close, that is solid, bulwarks and permanent Carriage of passengers on exposed decks. roofing, since such a deck can be effectually closed with canvas weather cloths. Owners may be permitted to measure such a deck for passengers in both Fair and Foul seasons.

(ii) A deck with close bulwarks, but no permanent roofing, should be classified as an exposed deck, since the Committee consider that awnings in certain parts of the ship do not constitute sufficient protection against the weather. Owners should not be permitted to measure such a deck for passengers in the Foul season.

(iii) A deck with rails and stanchions and without permanent roofing should count as an exposed deck, and owners should not be permitted to measure it for passengers in the Foul season.

If the above classification is accepted, it will still further reduce the maximum number of passengers carriable in the Foul season in vessels with Upper decks coming within headings (ii) and (iii). On the western coast, (iii), wholly exposed, is the type of the uppermost deck in the passenger and cargo steamers of the Bombay Steam Navigation Company, and (ii) is a common type in the British India Steam Navigation Company's fleet. The number of passengers travelling in the monsoon on the Bombay coast is however small, and not much cargo is carried. Although the maximum carriable will be reduced, in practice we do not consider that the actual numbers carried will be much reduced. In the Bay of Bengal the maximum carriable will be reduced, but the available surplus space is considerable, and we do not consider that the actual numbers carried will be much reduced.

The Committee observe that in Burma a local rule exists forbidding the measurement of an exposed deck altogether in the Foul season. This goes beyond the existing law, and we think that the adoption of the foregoing recommendations will sufficiently meet requirements.

Captain Ste. Croix and Mr. Ritchie dissent from the above opinion, and have expressed their views in a separate minute.

29. The 5' rule is contained in paragraph (7) of the Notification by the Government of India in the Finance and Commerce Department, No. 1356, dated the 14th March 1889. The rule, which is

The 5' rule.

applicable only to voyages between Madras coast ports and Burma ports, is ambiguously worded, and its meaning was discussed magisterially in a case in which the master of a Japanese steamer was prosecuted and convicted at Gopalpur in 1914, for carrying more than the

maximum number of passengers. The rule benefits owners in the case of monsoon voyages in ships of the two-deck, passenger-and-cargo type, if having a large amount of clear space in the Between deck. In such a ship with the usual proportions of clear space in the Between and Upper decks, the application of the rule would enable about 50 per cent. more than the ordinary number of passengers to be carried:—

Carriable under the ordinary rule (Foul season, Short voyage).

(a) Between deck	1,000'	. . . . .	111 passengers.
(b) Upper deck	700'	. . . . .	28 passengers.
Total in 1,700'			139 passengers.

Carriable under the 5' rule:—

(a) Between deck	1,000'	. . . . .	$\frac{1,000'}{5}$	200 passengers.
(b) Upper deck	700'	. . . . .		Nil.
Total in 1,700'				200 passengers.

This type of ship is disappearing in the Bay of Bengal services, the new type being one with three passenger-carrying decks, the two uppermost of which count as Upper decks. In such a ship, working under the 5' rule, both of the Upper decks ought to be kept free for the Between deck passengers, and the total number carriable would be 33 per cent. above the number carriable under the ordinary $\frac{9'+4'}{9'}$ rule, as follows:—

(a) Between deck	. . . . .	1,000'	carries 111 passengers
(b) 1st Upper deck	. . . . .	400'	„ Nil „
(c) 2nd „	„	400'	„ 39 „
Total		1,800'	150

Carriable under the 5' rule, 200 passengers. Increase under the 5' rule 50 passengers in every 1,800', or 33 per cent.

The Committee are, however, doubtful whether officers working the Act. always apply the rule so as to make available for the Between deck passengers the whole of both Upper decks.

The rule is generally objected to by expert witnesses as leading to overcrowding. We recommend that it be abolished.

30. The existing rule (Sections 18 and 21 of the Native Passenger Ships Act, 1887), is that every Between deck passenger must be provided with 36 cubic feet in that deck for a Fair weather, "Short" voyage, and with 54 feet for a Foul weather, "Short" voyage. On a "Long" voyage, whether in the Fair or Foul season, every passenger has to be provided with 54 cubic feet in the Between deck.

It follows that, if the deck height is low, the superficial space allowance per passenger must be correspondingly increased. As an example, if the height in the Between decks were 4'-6", the superficial space (Fair weather, "Short" voyage) would need to be increased from 6' to 8'. In practice, deck heights are steadily rising, and we doubt whether any Between deck as low as 6' now remains on regular passenger steamers. The Committee see no reason to recommend a change in the law in this respect, or in the corresponding provisions regarding cubic spaces to be provided in Orlop decks (70 and 90 cubic feet, Section 18 of the Native Passenger Ships Act, 1887).

31. The Committee do not think that there need be a limitation of the number of passengers carriable to the gross tonnage, as in the case of certain classes of voyage under the Board of Trade rules. The introduction of such a rule would radically reduce passenger facilities and seriously dislocate transport on

the Western coast, where the design of the passenger steamer is such that the gross tonnage is very small.

32. At present there is nothing to penalize an owner for overcrowding a particular compartment so long as the ship is carrying fewer passengers altogether than the maximum for the ship (Section 38 of the Native Passenger Ships Act, 1887). We consider that the maximum number carriable in each compartment of any covered deck should be marked in large letters, in English and the chief Vernacular language, on the floor or wall of the compartment or companion way, and the carriage on any voyage of more than the aggregate of the maxima for all compartments made available on that voyage should be made punishable. We notice that on some steamers notification by compartments has already been introduced.

33. The maximum carrying capacity of typical steamers will be reduced as follows under our recommendations:—
Effect of increased space allowances on carrying capacity of steamers.

Class of voyage.	Trades mainly affected.	Percentage of reduction.	Increase in average space allowance.
1. Specified runs : Festival seasons.	Bombay purely passenger daily Services.	27 During festival seasons.	From 6'6" to 9'.
2. Specified runs : Non-festival seasons.	Bombay purely passenger daily Services.	31 In non-festival seasons.	From 6'6" to 9'5".
Non-specified runs.	3. Short voyage : Bombay coast Steamers of 275', or under in length.	21	From 8'6" to 11'.
	4. Short voyages other steamers Fair Season.	18 (Two-decked Steamers), 20, (B. I. S. N. Coy.'s three-decked Steamers.)	From $\frac{9'8"}{9'5"}$ to 12'.
	5. Short voyages : Foul Season.	13 (Two-decked Steamers.)	From $\frac{12'2"}{12'}$ to 14'.
	6. Long voyages : Fair and Foul Seasons.	15 (B. I. S. N. Coy.'s three-decked steamers.)	
	B. I. S. N. Coy.'s Bay of Bengal Services of over 72 hours, which will be changed from Short to Long voyages.	19 (Two-decked steamers Foul Season.)	From 12'2" to 15'.

34. It may be estimated that Bombay owners would need to add one-fourth to one-third to their fleets to carry the existing traffic at the proposed rates of space allowance, and that the British India Steam Navigation Company, which is the chief owner in the Bay of Bengal, would need to add one-seventh or less to their fleet in Indian waters, which is not worked to anything like the same capacity as the fleets on the Bombay coast. Further, we recommend below some structural alterations, not however in the aggregate implying a considerable increase to capital costs.

It was suggested by some Indian witnesses that owners' profits are high enough to pay for additions to the fleet without raising fares and that, if they attempted to raise fares, Indian capital would step in and offer to carry at existing fares. The bulk of opinion was, however, to the effect that increased space allowances would be followed in the natural course by an increase in fares. As to whether the deck passenger can afford to pay higher fares, the opinion of expert witnesses in Burma is unanimous that he can. Witnesses are divided on the question whether the deck passenger on the West Coast can afford an enhancement. Mr. Kamat is not prepared to express an opinion on this point. The remaining members are inclined to think that he can on the runs north, and that he probably can on the runs south, of Bombay. Undoubtedly the important point to him is to be carried rapidly to Bombay, in order not to lose wages. Further, there is no coastal railway between Bombay and Mangalore, and no railway connection between India and Ceylon or the Straits Settlements, or between India and Burma, and ship-owners have a virtual monopoly of the traffic along these routes. These facts suggest that if the owners were to raise fares, the public would be practically compelled to pay them.

Deck fares have been rising on certain typical runs as follows :—

	Rs.	A.	P.		Rs.	A.	P.	
Western India, Coasting, Bombay-Vengurla.	1878	3	0	0	1916-17	2	0	0
	1910	1	9	0	1917-18	2	15	0
	1913-14	0	10	0	1918-19	3	5	0
	1914-15	1	10	0	1919-20	3	6	0
	1915-16	1	8	0	1920-21	4	2	0
Rangoon-Madras	1891	10	0	0				
	1921	13	0	0				
Rangoon-Calcutta	1891	10	0	0				
	1921	13	0	0				

Deck passengers have been able hitherto to pay the higher fares, and the increase has not yet attracted into the shipping field—not at any rate with success—new capitalist enterprise. On the other hand the fare on the Coromandel=Rangoon run has dropped from Rs. 15 in 1910 to Rs. 13 in 1921.

Some typical actual fares are as follows in terms of mileage :—Bombay Goa; 245 miles: Rs. 3-10 or about 1 pice a mile: Rangoon-Calcutta (about 780 miles) Fare Rs. 13, or 1 pice a mile: Akyab to Chittagong: about 4 pies a mile.

In the smaller of the passenger-carrying lines south of Bombay—the India Co-operative Steam Navigation Company—the dividend to ordinary shareholders (10 per cent.) has steadily risen, though still remaining moderate. The Bombay Steam Navigation Company paid an average dividend of 6½ per cent. from 1906 to 1914. In 1919 and 1920 the dividend was 17 per cent. We are informed that this Company has made no bonus distribution in the period referred to. The maximum ordinary dividend paid by the British India Steam Navigation Company, during the past 20 years, has been 13 per cent. but there has been an amalgamation, the financial effect of which is not known to us.

35. It was urged by some witnesses that Government ought to intervene by fixing a minimum deck=passenger fare.

Rate-wars.

Some unofficial and some official witnesses stated that new capital is debarred from entering the shipping trade through fear of a rate-war, and it is common knowledge that in the past attempts have been made to enter the trade and have failed, generally partly owing to a rate-war. For instance, the rate of annas ten from Bombay to Vengurla quoted above reflects a rate-war then in progress. These witnesses expressed the opinion that, if the certainty of a rate-war could be removed by means of the prescription of a minimum fare, plenty of new capital would be forthcoming for new shipping ventures, and the ensuing competition would of itself lead, without an increase in the fare, to improvement in the amenities provided for deck passengers. The Committee are averse from recommending more than the minimum intervention by Government in the shipping trade,

but realise that Government is closely concerned to see that fares remain low in areas that depend on deck passengers for their development, for instance, Karachi, Bombay City and the Province of Burma, and further that the sale of facilities for carrying human beings stands on a different footing from the sale of commodities for consumption. The carriage of passengers by sea is, indeed, essentially a service in which the public control may justifiably exceed that imposed on an ordinary business. The principle of such control has been accepted in the case of the carriage of passengers by rail. It is a fact that one or two shipping concerns at present hold the monopoly of the passenger trade in Indian waters, and the Committee consider that if a rate-war could be avoided, a stimulus would be afforded to fresh enterprise, and that this would lead to amelioration of passage conditions generally, a result which competition has brought about in the case of the emigration trade from European countries.

The issues involved are of a difficult nature, and the complete data needed for an examination of the question are not before the Committee. A majority of the members think, however, that if a moderate increase in space allowances is found to be followed by a material increase in fares, Government might consider the question whether a minimum fare ought not to be prescribed. Capt. Ste. Croix and Mr. Ritchie dissent from the foregoing remarks.

35 A. Our recommendations in this chapter may be summarised as follows :—

Summary.

- (i) The limit for a "Long voyage" should be reduced from 120 to 72 hours (for the longest section of a voyage).
- (ii) A flat rate of space allowance should be substituted for the occupation space *plus* airing space at present provided for the Between-deck passenger.
- (iii) There should be a provision in the Act that, subject to the requirements of navigation, all exposed decks not reserved for higher classes, or occupied by passengers, shall be made available to Between-deck passengers, as airing space.
- (iv) There should be six classes of voyage, *viz.* (i) Short voyage, Specified runs, Festival seasons, Fair seasons ; (ii) Short voyage, Specified runs, non-festival seasons, Fair seasons ; (iii) Short voyage, non-Specific runs, Bombay coast only, Fair season ; (iv) Short voyage, non-Specified runs, other steamers, Fair season ; (v) Short voyage, non-Specified runs, Foul season ; and (vi) Long voyage, Fair and Foul seasons.
- (v) The space allowances for the different classes should be as follows :—

(a) *Short voyage, specified runs, Festival seasons.*

The Bombay Government should be given power to allow steamers to carry at the rate of 9' during holiday seasons, such as the *Holi* and *Dewali*, a special certificate being obtained on each occasion, and the concession being limited to voyages in the Fair season, of 24 hours duration or less.

Other Local Governments may also be given power to deal with similar cases, if any, in their jurisdictions.

(b) *Short voyage, specified runs, non-festival seasons.*

A special category of runs, to be scheduled, should be drawn up in order to meet the case of the heavy fine weather passenger traffic on daily services from Bombay to ports southward in non-festival seasons. The voyage should be limited to 24 hours between terminal points and to the Fair season. The President considers that owners should be allowed to carry passengers at the rate of 9.5' on any deck. Dr. Batra and Mr. Kamat would not go below 10'.

- (c) *Short voyages, non-specified runs, Bombay coast, steamers of 275' or under in length, Fair Season.*

Owners may be allowed to carry at the rate of 11'.

- (d) *Short voyage, non-specified runs, Fair season.*

Owners should be permitted to carry passengers at the rate of 12'.

- (e) *Short voyage, non-specified runs, Foul season.*

Owners should be allowed to carry passengers at the rate of 14'.

- (f) *Long voyage, Fair and Foul seasons.*

Voyages over 72 hours between ports should count as "Long voyages." Owners should be allowed to carry passengers at the rate of 15'.

- (vi) Owners should be given a reasonable time before new allowances are brought into force.
- (vii) It should be left to the discretion of Local Governments to allow a rate (not falling below 6') in the case of steamers running on services which do not extend to more than 12 hours between terminal points, and to authorise such steamers to ply without providing cooking galleys or washing places.
- (viii) The existing rule that every passenger in an Orlop deck must be provided with 12' *plus* 4' in the Upper deck (Fair season, Short voyage), and 15' *plus* 4' (Foul season, Short voyage), and 15' *plus* 6' (Fair and Foul seasons, Long voyage) may be allowed to continue.
- (ix) Owners may be permitted to measure a deck with close, that is solid, bulwarks and permanent roofing, for passengers in both Fair and Foul seasons.
- (x) Owners may be permitted to measure a deck with close bulwarks, but no permanent roofing, for passengers in the Fair season only.
- (xi) Owners may be permitted to measure a deck with rails and stanchions and without permanent roofing, for passengers in the Fair season only.
- (xii) The 5' rule should be abolished.
- (xiii) There is no reason to change the existing rule regarding the provision of cubic space for Between deck passengers, or the corresponding provisions regarding cubic spaces to be provided in an Orlop deck.
- (xiv) There need not be a limitation of the number of passengers carriable to the gross tonnage.
- (xv) The maximum number carriable in each compartment of any covered deck should be marked in large letters in English and the chief Vernacular language, on the floor or wall of the compartment or companion way.
- (xvi) The carriage on any voyage of more than the aggregate of the maxima for all compartments made available on a particular voyage should be made punishable.
- (xvii) If the Committee's recommendations (should they be sanctioned) eventually lead to a material increase in fares, Government might consider the question whether a minimum fare ought to be prescribed.

CHAPTER III.

36. There is a practical consensus of evidence that more uniformity is needed in the method of measuring the space available for deck passengers. The Committee noticed many cases of lack of uniformity. In some cases (of boats asking for a certificate for the maximum number of passengers) both the Bridge Boat deck and the Bridge deck are measured: in others, neither: in some cases, only one. In some cases the Between deck bunkers are measured and shown separately, in others measured, but not shown separately, their area being included in that of one of the Between deck compartments. The Poop deck is sometimes measured, sometimes not. In several instances space was found measured, which under no circumstances was made available for deck passengers, e.g., the Bridge Boat deck on certain steamers, the first class cabins on others.

The Committee consider that uniformity ought to be secured, and recommend the adoption of the following general principles:—

- (i) Space which is not under any circumstances made available for deck passengers should not be measured as available. This would exclude saloons and first and second class cabins.
- (ii) Space needed for the working of the ship should not be measured. This will exclude in most cases, (see (h) below), the Bridge Boat deck (which in practice is rarely if ever made available, and which as a measure of safety ought not to be made available) and the space covered by boats on an Upper deck (when so carried), together with working space.
- (iii) Space needed for the provision of reasonable facilities for the movement of passengers, for example to and from the latrines and washing places, should not be measured.

We recommend that spaces of the following particular kinds should be dealt with as stated against each:—

- (a) Between deck *alley-ways* less than 6' wide should not be measured. If 6' wide or over, 4' should be excluded from measurement and the balance may be measured. As regards *passages in Upper decks*, between the deck erections and the bulwark, no passage less than 2'-6" should be measured. If 2'-6" or over, 1'-6" should be deducted, and the balance may be measured.
- (b) No portion of a *hatch* used as a gang-way should be measured. The rule issued as an executive order by the Government of India (Resolution by the Government of India in the Department of Finance and Commerce, No. 2758, dated the 11th August 1884) is, on "Short" voyages, to exclude the whole area of the hatch, presumably on the ground that it may have to be opened at intermediate ports; on a "Long" voyage, if the hatch is over 120' in area, to measure one half of it. The hatches, although not measured during "Short" voyages (which are the majority of the voyages performed at present) are in practice always used by deck passengers, except when they are opened, which may take place at intermediate ports, for purposes of handling cargo. In the important passenger trade on the western coast the hatches are frequently left open, not in order to facilitate the handling of cargo, but to afford ventilation to the passengers on the deck below. We recommend in another paragraph that the limit of the "Short" voyage should be reduced from 120 to 72 hours between ports. If this is accepted, a number of the voyages performed in India will become "Long" instead of "Short." For hatches not used as gang-ways, we recommend the retention of the present rule, *viz.* that on "Short" voyages none of the hatch space should be measured for passengers, whilst on "Long" voyages, if the hatch exceeds in area 120 square feet, one half of it may be measured.
- (c) *Forecastle heads*.— No portion of a short fore-castle head on which a windlass is carried should be measured. Nearly the whole is in

practice occupied by encumbrances, and the forecastle is needed for purposes of navigation at certain times. The case of a specially long forecastle head should be referred to the central inspecting authority recommended in a later paragraph, if sanctioned.

- (d) In the case of a steamer coming under survey for the first time, no *Between deck* not 6'-6" in height should be measured.
- (e) The 1890 Commission recommended the exclusion, in the Foul season, of all *uncovered deck* space, and proposed that the whole, or a portion of the same should be kept for the use of the deck passengers under permanent shelter. Our recommendations regarding exposed decks in the Foul season are stated in detail in another paragraph.
- (f) The lower *hold* should not be measured.
- (g) Temporary *accommodation on cargo* should not be measured.
- (h) *Boats (or rafts)*:—We consider that a special Bridge Boat deck (if any) should be wholly excluded and that, if boats are carried on another deck, the space covered by the boats, and space for a convenient approach thereto, should not be measured.

The rule may be stated as follows:—

Purely Boat Decks, the whole length of which, fore and aft, is occupied by boats, should not be measured for passengers, even if the boats are carried swung out on davits.

Where Boat decks are of very long design, and only *partially occupied* by boats, the space occupied by boats should be railed off, leaving a clear space for the crew to work boats. The remainder of the deck fore and aft of the boats can be measured, provided (i) the length of deck at forward and after end of the boats is not less than 10 feet, and (ii) the deck is a suitable deck for passengers in all respects.

- (i) Space needed for navigation should not be measured.
- (j) The area of Permanent and Temporary *hospitals* should not be measured.
- (k) *First and second class saloons and cabins* should not be measured.
- (l) *First and second class airing space*. Fifteen superficial feet per head should be reserved for 1st and 2nd class passengers, and the balance may be measured for deck passengers. The areas to be assigned as airing space for first and second class passengers should, where possible, be marked off.
- (m) Fore and aft raised *gangways* should not be measured. We recommend that lines 21 inches wide should be marked on the *Between decks*, amid-ship, forward and aft, and that the space included should not be measured. The object of our recommendation is to facilitate the movements of passengers to the washing places, etc.
- (n) *Baggage rooms, the space occupied by masts, ventilators, and stanchions, pipes, projections, ladders, latrines, washing places, water tanks, cooking galleys* and other encumbrances should not be measured.
- (o) *Waterways* when not covered by a grating should not be measured.
- (p) *Sleeping platforms*.—These are provided on some ships of the British India Steam Navigation Company, on the "Short" voyage services between Burma and Madras, Burma and Calcutta, and Madras and the Straits Settlements ports, and on "Long" voyage services between Bombay and East Africa. They are approximately 5' by 5', and are installed in the *Between decks*, suspended about midway between the floor and the deck overhead. There is a general consensus of opinion that they have decided advantages and are

popular. They were found to be popular on the Madras-Rangoon run in 1890, *vide* 1891 Report, pages cxxxviii and cxxxix. Whilst our recommendations regarding enhancement of the average space allowances will materially reduce crowding, the installation of sleeping platforms in the Between decks would not be an expensive addition to the equipment, and the platforms would add much to the comfort of passengers, who could use them either to lie on themselves, or for their luggage. In particular, we think that in the Bombay trade, especially on the runs north of Bombay, the provision of platforms in the Between decks would materially relieve the present luggage difficulty. We recommend, therefore, that no Between or lower-Between deck should be measured for passengers unless it is fitted with these platforms. An exception may be made in the case of a steamer diverted to a particular run temporarily, for the express purpose of dealing with a heavy rush of passengers. We do not consider it sufficient to retain the existing space allowances and as a set-off merely to prescribe the provision of sleeping platforms. Such platforms, not being deck space, should not be measured as passenger accommodation.

(g) Deck space, or *airing space*, for the crew should not be measured.

37. We recommend the issue of a set of Instructions, to be applied in all maritime Provinces, on the lines of the Board of Trade *Instructions as to the Survey of Passenger Accommodation*, and going into detail. If our suggestion that scrutiny of the working of the Act should be secured by the creation of a small centralized inspecting authority, the preparation of the Instructions, and the settlement of doubtful cases, should devolve upon the Inspector.

37A. Our recommendations in this Chapter may be briefly summarised as follows :—

Summary.

- (i) Uniformity in the method of measuring the space available for deck passengers shall be secured by the adoption of the suggestions made. Among these, is a suggestion that no between deck should be measured, unless it is fitted with sleeping platforms.
- (ii) A set of Instructions, on the lines of the Board of Trade *Instructions as to the Survey of Passenger Accommodation* and going into details, should be prepared by a Central Inspecting Authority and applied in all maritime Provinces.

CHAPTER IV.

38. This is a difficult question, especially in the Western India Services, from Bombay Northwards to Karachi and the Persian Gulf. On these runs the deck passenger often surrounds himself with a mass of personal effects, from which he strongly objects to be parted, and by so doing occupies more than his fair share of the space available. The case is hardly less difficult in the voyages from Rangoon to the Madras ports, where we have personally observed deck passengers carrying large teakwood boxes, bedsteads, planks, etc., as personal luggage, and thus creating a bad condition of overcrowding. Much of the overcrowding that exists is, indeed, solely due to the luggage carried by the deck passengers. Owners can, and do, charge passengers excess rates for personal effects over a certain weight, but they do not assess strictly and, as passengers are only allowed on to the ship about an hour before sailing, weighment of each passenger's goods presents difficulties. In Madras there is a local rule that only two-hand packages may be carried with a passenger, but the rule is said to be a dead letter. We think that owners should endeavour to lessen the amount of luggage carried by means of a stricter imposition of excess charges, proper storage and delivery arrangements being made for all excess baggage.

38A. Our recommendation in this Chapter is that owners should endeavour to lessen the amount of luggage carried by levying excess charges, proper storage and delivery arrangements being made for all excess luggage.

Summary.

CHAPTER V.

39. The present rule is contained in Section 10 of the Native Passenger Ships Act, 1887, which says that Certificate "A" shall state that the ship is properly ventilated, *i.e.*, it is left to the discretion of the Surveyor when making the periodical survey (usually once a year) to look into the question of ventilation, and apply what criterion he thinks reasonable. In certain cases, *e.g.*, in Bengal, his discretion is guided by Instructions prescribed by the Local Government. The Bengal rule is contained in Instruction 20 of the *Instructions as to the Survey of Passenger Accommodation in Native Passenger and other sea-going ships*:—

20. * * * * *

"Care should be taken that the means provided for ventilation are sufficient to allow of a good supply of air in the event of the hatches being closed in bad weather. Places ventilated by hatches only, or in which provision is not made for a sufficient supply of air and light under *all* circumstances, should not be measured for passengers.

Ventilation.

Floors.

"All floors of passenger accommodation must be properly laid and caulked.

"The lower hold must not be considered as proper accommodation for passengers, neither are spaces which consist of temporary accommodation upon the cargo, nor spaces lighted and ventilated by hatches only.

Lower hold not measured for passengers.

"Exclusive of hatchways, natural ventilation in the ratio of 5 square inches to every statute adult should be fitted to each between-deck compartment in which passengers are carried.

"The ventilation should be efficiently distributed so that it may ventilate all parts of each separate compartment."

Only Bengal has prescribed a local rule. In Bombay the Ship Surveyor endeavours to apply a 5-inch standard, or something like it, but is very often compelled to accept $2\frac{1}{2}$ inches, or something between that and 5 inches. Our inspection of vessels led to the conclusion that ventilation was generally better in steamers sailing from Calcutta (and Madras) than in steamers plying on the Bombay Coast. The scale on emigrant ships is 10 square inches, and this is what the 1890 Commission recommended for Native Passenger Ships. As such ships proceed on shorter voyages than emigrant ships, we think that 5 square inches will suffice, provided the ventilation is efficiently distributed. We do not consider that it is, in all cases, so distributed at present. Five inches should be prescribed as the minimum by rule.

In the case of vessels with an Orlop (or lower-Between) deck, we consider that there should be artificial ventilation or, in the alternative, 10 square inches of ventilation by means of cowls or air shafts opening on to the weather deck. This is the scale prescribed for pilgrim ships.

40. The location of latrines and the designs vary. The usual arrangement is one battery of latrines on the Upper deck aft, and another forward. On some steamers, however, all are collected at one end of the ship, and on others an additional battery or batteries is placed amid-ships. On the passenger steamers on the Bombay side, the feature of which is two Upper decks, all the latrines are carried on the lower of the two decks. In most of the three-passenger-deck British India Steam Navigation Company's steamers the latrines are on the lower of the two Upper decks, but in some cases there are latrines on the upper of these decks.

The existing rule prohibits the construction of latrines in a Between deck, for the following sufficient reasons:—

- (a) The Between deck is usually below the water level, and the latrines could not be evacuated by means of a gravity water supply.
- (b) Ventilation in the Between decks is necessarily worse than in the deck above, and the dispersion of effluvia more difficult.

The result of the rule is that a passenger in the Between decks who desires to use a latrine must go on to the Upper deck, and at present this means a long and often a difficult journey, owing to the fact that the decks traversed may be crowded with passengers or their luggage. Many of the passengers in the Bay of Bengal are carried at times when the weather is bad, and the difficulty of access to the latrines is thereby aggravated. Whilst we recognise that the absence of latrine accommodation in the Between decks is necessarily a great inconvenience, we do not see how this can be avoided. Our suggestions for increasing the average space allowances, and for securing better facilities of movement for deck passengers will largely remove the present difficulties of access.

41. At the same time we think improvements are needed. As regards location, we think that there should in all cases be a battery or batteries of latrines aft and another forward. We see no objection to latrines amid-ships as well. The approaches to the latrines for males and females are at present in most cases by the same route. We consider that it would be an improvement to provide different routes (as is already done in some cases). The latrines for males and females should be indicated by the figures of a man and a woman. Having regard to the habits of the people, a majority of the Committee consider that the provision of separate urinals is not needed. Mr. Kamat, however, considers that a proportion of the conveniences should be marked as urinals, the one type, however, being retained. The Committee are agreed that the best type of latrine is one in which the platform is very low, and that the best system of flushing is an intermittent flush, *i.e.*, one in which the cistern automatically empties itself at intervals of a few minutes. A continuous flush is found in practice to be insufficiently copious to evacuate the trough thoroughly. There should be a rule prohibiting the use, in steamers coming under survey for the first time, of latrines of the pan and hand-flush type. Conveniences of this kind are not understood by the deck passengers, and are accordingly not used properly. Each platform is isolated in the steamers of the Bombay Steam Navigation Company. On other steamers the battery consists of three or four platforms, screened off from each other, but all visible to anyone entering the latrine. We think that each platform should be screened off, not only from the next one, but also from persons entering the latrine. A spring door would probably suffice. We think that latrines of a temporary type would not prove sanitary, and do not recommend them, though they may be allowed in exceptional circumstances. If a supply of salt water can be made available for purposes of ablution, *e.g.*, by means of a tap in each latrine, this would be an advantage. In one ship we noticed that the latrines were inconveniently situated, as they could only be reached by a deep and narrow flight of stairs. The latrine floor should be flush with the deck outside.

In the typical passenger steamers on the West coast (with two Upper decks) the latrines are at present confined to the lower of the two. On the deck above there are no latrines. Both these decks are above the water line, and the difficulties of flushing and ventilation, which preclude the construction of latrines on a Between deck proper, do not apply to them. We think that there should be a rule that latrines should be provided on every deck made available for deck passengers above the Between deck, except where structural conditions make this impossible. An exception should also be made in the case of Poop or Bridge decks. On such decks the number of passengers accommodated would be small, and the latrines on the deck below could be resorted to without hardship. The walls at the sides and back of the platform should be, as far as possible, continuous, in order to obviate soiling, and facilitate cleansing. Not more than 15 per cent. of the total number of latrines should be reserved for females,

We think (Captain Ste. Croix and Mr. Ritchie dissenting) that a special staff of sweepers should be entertained, as is the case under the Pilgrim Ships Act rules. The scale we recommend is 2 for a ship certified to carry 500 deck passengers as a maximum, and one for every succeeding 250, or part of 250.

A ship should be required to provide facilities for flushing the latrines, whether the ship is at rest, or moving. Owners should be required to provide permanent latrines, on the scale that may be adopted, for the maximum number of passengers, carriable, and there should be a rule prohibiting the use of the passengers' latrines by the crew.

42. The existing scale of latrines is 2 for the first 100 passengers, and 1 per cent. for each succeeding hundred: *e.g.*, for 1,000 passengers, 11 latrines, by which is meant 11 separate places in latrines. No separate type of urinal is prescribed. There is a consensus of opinion that this scale is too low, but, as in other cases, expert witnesses make varying recommendations. Generally speaking, they recommend double the existing scale, *i.e.*, a 2 per cent. instead of a 1 per cent. basis, or more. There is also a general consensus of opinion that, if the type of latrine recommended above is adopted, it will be unnecessary to prescribe a separate type of urinal. The 1890 Commission recommended 3 places in the latrine for the first 100 passengers, and for each succeeding 100 passengers, $1\frac{1}{2}$ per cent., *e.g.*, for 1,000 passengers, $16\frac{1}{2}$, say 17 places. The Board of Trade scale for Home Trade ships is 8 places and 4 urinals, *i.e.*, 12 places in all, for 825 passengers, or 14 for 1,000. The scale prescribed in the Notification of the Government of India of 1916 (subsequently withdrawn) was 3 seats in the latrine *plus* 2 urinals, or 5 conveniences in all for each 100 passengers, *i.e.*, 50 for 1,000. The Straits Settlements scale is not less than 2 per cent. We think that a 2 per cent. basis, without the provision of separate urinals (Mr. Kamat dissenting on this point), will suffice, and recommend this. It will provide 20 places for a ship carrying 1,000 passengers, against 11 at present. On any ship, the maximum need not exceed 60. We observe that owners are in some cases already equipping their ships with sanitary conveniences in excess of the minimum scale laid down at present.

43. *Fresh Water.*—The existing rule (Government of India, Department of Finance and Commerce, Notification No. 1354, dated the 14th March 1889), is, that, if a steamer does not carry distilling apparatus, she must carry, stored, one Imperial gallon per head of fresh water, whilst, if distilling apparatus is carried, she must provide, stored, five-sevenths of one Imperial gallon per head. We are satisfied that ship-owners in all cases provide more than this minimum, in many cases much more. All that is wanted is improvement in the facilities for obtaining the water. No taps are provided at present within the Between decks, one reason being that the Between deck is generally below the sea level, and consequently a natural drainage for waste water cannot be obtained: another, possible detriment to cargo and annoyance to the passengers through the decks being left in a sloppy state. In some steamers the evidence is that fresh water is available throughout the day, but an ordinary arrangement is that the water taps on the Upper decks are opened in the morning between 6 and 10 A.M., and in the afternoon between 2 and 6 P.M. It is complained that the taps are not open for long enough periods, and the present difficulty of access may result in a passenger not being able to take his turn at the tap, whilst the water is running. The provision of increased space allowances (which is our fundamental recommendation) will automatically improve matters in this respect, since it will make access to the water taps more easy. We think, however, that the number of taps is in some cases, and, unless the rule is changed, will still be, insufficient, and recommend the issue of a rule to the effect:—

- (a) That, in each enclosed compartment of a Between deck or a lower Between deck, there should be at least one water tap, with an efficient cant piece, or a water barrel to be kept filled with drinking water. Capt. Ste. Croix and Mr. Ritchie, however, object to a water supply in the Between decks.

- (b) That, in an open deck, there should be at least two water taps forward and two taps aft. We think that a smaller number than this might be allowed in the case of small steamers.

As regards the provision of a Hindu waterman of caste, for the distribution of water, we do not think it necessary to prescribe this. If more taps, and better access to them, are given, passengers can without difficulty get to the taps and help themselves.

44. *Water for ablution.*—At least two washing places, one for males, one for females, are required by the existing rule—Notification by the Government of India in the Finance and Commerce Department, No. 1354, dated the 14th March 1889—and in addition, on the open deck, a sufficient number of hand-pumps, or taps, for supplying sea water for ablution. The rule may remain. The washing places should be placed in such a situation that it is not necessary to enter the latrines in order to reach them.

44A. Our recommendations in this Chapter may be summarised as follows :—
Summary.

- (i) It should be definitely laid down in the Rules under the Act that natural ventilation in the ratio of not less than 5 sq. inches to every Statute adult should be provided for each passenger in the Between decks and that it should be efficiently distributed. Artificial ventilation, or in the alternative, 10 sq. inches of natural ventilation should be provided for all passengers in an Orlop (or lower between) deck, by means of cowls or airshafts opening on to the weather deck.
- (ii) A battery or batteries of latrines should in all cases be provided forward and another aft. There is no objection to latrines being provided amidships as well. Not more than 15 per cent. of the total number of latrines should be reserved for females. It would be an improvement if the entrance to these latrines were by a different route from that provided for the latrines for males. The latrines for males and females should be indicated by the figure of a man and a woman.
- (iii) The best type of latrine is one in which the platform is very low, and the best system of flushing is an intermittent flush, i.e., one in which the cistern automatically empties itself at intervals of a few minutes. The walls at the side and back of the platform should be, as far as possible, continuous.
- (iv) Each platform should be screened off, not only from the next one' but also from persons entering the latrine. A spring door would probably suffice.
- (v) There should be a rule prohibiting the use, in steamers coming under survey for the first time, of latrines of the pan and hand-flush type.
- (vi) It would be an advantage if the supply of salt water can be made available for purposes of ablution, e.g., by means of a tap, in each latrine.
- (vii) There should be a rule that latrines should be provided on every deck made available for deck passengers above the Between deck, except where structural conditions make this impossible. An exception should also be made in the case of Poop and Bridge decks.
- (viii) A special staff of sweepers should be entertained as is the case under the Pilgrim Ships Act rules. The scale should be 2 for a ship certified to carry 500 deck passengers as a maximum, and 1 for every succeeding 250, or part of 250.
- (ix) A ship should be required to provide facilities for flushing the latrines, whether the ship is at rest or moving.

- (x) Owners should be required to provide permanent latrines, on the scale that may be adopted, for the maximum number of passengers carriable.
- (xi) There should be a rule prohibiting the use of the passengers' latrines by the crew.
- (xii) The scale should be 2 latrines for every hundred passengers, and no separate urinals need be provided. On any ship, the maximum need not exceed 60 latrines.
- (xiii) The Rules to be issued under the Act should contain a rule to the effect :—
 - (a) That, in each enclosed compartment of a Between deck or a lower Between deck, there should be at least one water tap with an efficient cant piece, or a water barrel to be regularly kept filled with drinking water.
 - (b) That, in an open deck, there should be at least two water taps forward and two taps aft.
- (xiv) The existing rule regarding washing places and the provision of hand-pumps for the supply of sea-water for ablution may remain. But the washing places should be placed in such a situation that it is not necessary to enter the latrines in order to reach them.

CHAPTER VI.

45. The existing rule (Notification by the Government of India, Department of Finance and Commerce, No. 1354, dated the 14th March 1889) is that cattle are to be kept securely penned in, so as not to inconvenience the passengers. Bengal, Madras, and Burma have local rules. The Bengal rule is contained in Instruction 19 in the *Manual of requirements as to the Survey of vessels for Passenger Certificates* (Bengal Manual, page 164). This instruction incorporates the rules adopted by the Board of Trade (para. 27) which are as follows :

“ 27. When cattle are carried on the open deck, and are not under cover, the space occupied by them must be effectually shut off from the passenger space by bulk-heads, wooden partitions, or otherwise. The partitions need not be closed; but efficient wash boards must be fitted to prevent the dung or urine of the cattle from getting on to the passenger space.

Under cover.—If cattle are carried under cover on the same level deck as passengers they are to be separated from the passenger space by a moveable close bulk-head running athwartships across the deck and extending from the deck to the covering above, or they must be otherwise efficiently separated.

In the hold.—If cattle are carried either in the Between decks or holds, then the passenger space must be effectually shut off from the cattle space, and separately ventilated, so that no effluvia from the cattle space can escape into the passenger space.”

The adoption of the Board of Trade rules was among the recommendations of the Commission of 1890. Our inspections of vessels showed us that, whilst in some ships the Bengal rules are applied in such a way as to free the carriage of cattle from objectionable features, it is not so in all cases, for the Committee noticed cattle carried on the same deck as passengers, without separation from the latter, in Calcutta, and a similar condition of affairs (but with the cattle in closer proximity to human beings and, therefore, with greater objection) in certain Bombay steamers. The Protector of Immigrants, Rangoon, remarks that the conditions under which cattle are carried are “appallingly disgusting and insanitary,” and there is a consensus of opinion on the part of witnesses that conditions in this respect should be improved. We recommend the adoption of the Board of Trade Instructions as a rule of general application in India.

45A. Our recommendation in this Chapter is that the Board of Trade rules for the carriage of cattle, sheep and goats, should be adopted as a rule of general application in India.

Summary.

CHAPTER VII.

46. The Madras Government has ruled (Appendix XIII, Madras Port Manual) that when a vessel leaves the last port of call on the Coromande Coast during the Fair season, but is scheduled to arrive at a port in Burma after the Foul season has commenced, the Foul season rules shall be applicable. Similarly, when a vessel leaves one coasting port in Madras in the Fair season, but the season is likely to expire before she finally leaves the Coromandel coast, then the Foul season rules are to be applied. Similarly, if a vessel leaves a port in Burma in the Fair season and is likely to reach the Coromandel coast after the Foul season on that coast has commenced, the Foul season rule shall be applicable. It seems doubtful whether at any rate the last mentioned Madras rule is observed in practice. We recommend the adoption of the Madras rule generally.

47. The existing rule is that if the voyage is between a port in British India and a port in the Red Sea, and if over 100 passengers are carried, a Medical Officer must be carried (Section 26 of the Native Passenger Ships Act, 1887). Otherwise, a Medical Officer need not be carried.

The Commission of 1890 recommended that a Medical Officer should be carried on steamers having over 400 deck passengers, when plying between the Coromandel Coast or Calcutta and Rangoon; in subsequent correspondence, this recommendation was extended to the case of steamers carrying over 400 deck passengers, when plying on the western coast. The expert evidence varies a good deal. Port Health Officers considered in some cases that a Medical Officer ought to be carried on all steamers carrying deck passengers; in others, if carrying over 100 souls; in others, only if the voyage was a "Long" one and the number of passengers 500 or over. We consider that a Medical Officer should be carried if the scheduled duration of the voyage between terminal points is over 72 hours, and if the number of passengers carried on the voyage is 150 or over.

A question arises as to the qualifications that should be required from the Medical Officer, and whether they should vary with the nature of the voyage and the number of deck passengers carried. Some expert witnesses recommended that the lowest diploma to be accepted should be that of Licensed Medical Practitioner, Madras; others suggested as the criterion registration in an Indian Medical Directory, a British or Colonial registered qualification, or certain foreign qualifications (for foreign ships). We recommend the latter suggestion, and do not think that the qualification need vary with the nature of the voyage or the number of passengers carried.

The Medical Officer need not be a servant of Government. We recognise that there will not be the same guarantee that the Medical Officer shall be a sort of protector of the deck passengers, against ill-treatment and peculation at the hands of the subordinates of the ship, as would be the case if he were a Government servant. But the creation of a Government Medical Service for passenger ships would present difficulties, and such a service is not at present needed. It would be an advantage if the Medical Officer were recruited from the races chiefly carried on the particular service.

48. The existing rule (for voyages other than voyages between ports in British India and ports in the Red Sea) is that a ship must provide a permanent hospital, if the voyage is a "Long" one, and if over 100 passengers are carried. She must also carry material for the erection of a temporary hospital.

If the voyage is a "Short" one, and if over 100 passengers are carried, she need not provide a permanent hospital, but must carry material for the erection of a temporary hospital.

If the voyage is between a port in British India and a Red Sea port, and if the ship carries more than 100 passengers, there must be a permanent hospital, and also material for the erection of a temporary hospital.

The 1890 Commission recommended that a permanent hospital should be provided whenever a Medical Officer was carried, and they recommended a Medical Officer if the steamer was carrying over 400 passengers between the Coromandel Coast or Calcutta and Rangoon, or on the western coast. We have recommended above that a Medical Officer should be carried if the voyage is over 72 hours in duration, and if over 150 passengers are carried. We do not, however, think it necessary to prescribe the erection of a permanent hospital, unless the number of passengers exceeds 400, and the ship is proceeding on a "Long" voyage. The minimum of bunks should be 4, and facilities should be provided for the separation of male and female patients. The hospital should be on the Upper deck. We see no objection to cabins on the Upper deck being used as a Hospital. A death occurring between terminal points in a voyage should be reported at the next port reached as well as at the terminal point.

49. At Bombay excellent shelter arrangements are in force. We understand that the shelter sheds, which are permanent structures, were erected at the cost of the Port Trust, and that the equipment is provided by the shipping company using the shed. At Karachi

Shelter arrangements.

there is no shelter place in immediate proximity to the wharf, although such a shelter exists a few hundred yards away. The arrangements at minor ports in the Bombay Presidency are believed to be defective, and the same is the case at some ports on the Madras coast. At others on this coast, the British India Steam Navigation Company has erected substantial shelters, which are freely used and are appreciated. At Calcutta, owing to the munificence of a private benefactor, a substantial waiting shed near the wharf has recently been constructed. At Rangoon there is a permanent structure, also erected and endowed by a private benefactor, but this is insufficient to accommodate all the passengers seeking shelter. A range of temporary sheds was also constructed at the cost of the Municipality in or about 1918, when complaints about the hardships undergone by deck passengers were numerous, but no passengers availed themselves of the shelter. This was at a distance of about one mile from the wharf, and it was almost a foregone conclusion that it would not be used. A place for shelter for deck passengers should be as near as possible to the place where they will embark. The Committee consider that shelters should be constructed, at the earliest date possible, wherever there is a regular passenger trade of any extent, and that where Port Trusts exist, the erection of suitable shelter should be made a liability of the Port Fund, if it is not a liability already. The Bombay Wharfage and Landing Fees Act, from the proceeds of which shelters may be constructed at minor ports, is a valuable piece of legislation, which might be brought to the notice of other maritime Local Governments. Mr. Kamat and Mr. Ritchie emphasize the fact that, on the Bombay Coast, the provision of shelters at minor ports is long overdue, and consider that the object to be aimed at should be to ensure that no such port remains without shelter after five years from the present date. The Madras Outports Landing and Shipping Fees Act, 1885, and the Madras Pier Tolls Acts are in force at certain ports in that Presidency, but we are not aware whether shelter for passengers can be provided out of the collections thereunder.

50. The question of improving the arrangements for embarking and disembarking presents considerable difficulty at many ports, especially in the Bombay

Embarking and disembarking.

Presidency and on the Madras coast.

Embarkation and disembarkation at the shore.—Except at Karachi, Bombay, Panjim and Marmagoa, the anchorages in Western India are either in the stream (Viziadrug, Jaigad, Karwar and Malwan) or in an open roadstead, sometimes 2 miles or more off the land. On the Madras coast, many of the anchorages are in open roadsteads, sometimes as much as 5 miles out. Where the anchorage is in the stream, the difficulties are less. In the case of an

open roadstead, the passenger has to embark on a surf boat, frequently by wading, and to wade again when disembarking. Whilst we recognise that this is inconvenient, we do not see how it can be avoided, except by the construction of piers. Under the Bombay Wharfage and Landing Fees Act, 1919, Government may levy a cess on each passenger ticket, and devote the proceeds among other purposes to the erection of piers or landing places. At ports in other provinces, embarking and disembarking take place either at piers or in the stream, and the difficulties do not present themselves to the same degree. At Madras, Calcutta and Rangoon the British India Steam Navigation Company's Steamers, which carry the bulk of the trade, come up to the wharf.

51. *Embarking and disembarking at the steamer when anchored in an open roadstead.*—In this case also the inconveniences are badly felt on the western coast, owing to the fact that most of the steamer anchorages are open roadsteads. At the roadstead anchorages at ports between Bombay and Karachi, the passengers come from the shore in open boats known as *bunder boats*, or *paraos*. These are often crowded at the outset, and the policing arrangements appear to be susceptible of improvement. On arrival at the ship, as the *bunder boat* rises with the waves, the passengers are pushed or pulled up on to the platform of a companion ladder of the ordinary type, let down from the ship's side, or, alternatively, on to rope ladders with stages dropped out over the side from ports in the between decks. The former is the device usually adopted in the Bombay Steam Navigation Company's steamers, the latter that adopted by the passenger and cargo boats of that company and by the British India Steam Navigation Company. Conditions are even more difficult on the Madras coast, where, at almost all ports, passengers have to embark into or disembark from a surf boat, and to be hauled up from or let down into the surf boat by means of rope ladders with stages. We do not wish to suggest that unnecessary force is deliberately used.

Considerable objection was taken to this device of rope ladders and stages, but it has been pointed out to us that it would be dangerous, in the case of ships with a high freeboard like the British India Steam Navigation Company's steamers, to use a companion ladder and gangway, since there would be considerable risk of the surf boat, at the bottom of the wave, getting underneath the platform, and that might lead to an accident, either to boat or ladder. Expert witnesses were all agreed on this point. The passenger steamers of the Bombay Steam Navigation Company have a lower freeboard, the ladder drops at a gentler slope, and this apparently removes some of the objections to the use of a companion ladder and gangway. The passengers themselves prefer the ladder and gangway, particularly in the case of women.

The Committee discussed the matter with an Officer of the British India Steam Navigation Company, formerly in the Elder Dempster service on the West Coast of Africa. Numerous deck passengers are carried on the West African runs, and at open roadsteads these are embarked and disembarked by means of derricks and baskets (about 6' wide). The baskets are swung out from booms and lowered into surf boats, which on that coast are about 8½' wide. The Officer doubted whether the same device would be found suitable on the Coromandel Coast, where the ordinary surf or *masula* boat is only about 5' wide, and is of flimsy construction. Further, it seems doubtful whether the boatmen who man the *masula* boats could be induced to receive passengers as above described, and in the absence of suitable surf boats the method of disembarkation would present great risk of injury to passengers.

Expert witnesses, whilst agreeing that the present methods of embarking and disembarking at the steamer cause great inconvenience, and often hardship, were unable to indicate any certain or easy remedy.

The suggestions made by Bombay witnesses were as follows:—

(a) *Better policing arrangements at the shore.*—At present the owners of boats compete with one another for passengers, with the frequent result that the boats are crowded. It was suggested that if ship-owners or the Port authorities themselves maintained an establishment of boats, this competition for passengers, and the consequent congestion, would be avoided. Many of the ports are, however, in Native States, the authorities of which control all

the boating arrangements. It would be well at all ports for the Port authorities to license the boats and limit them to a maximum number of passengers. This is already done in most, if not all, ports in British India.

(b) *Prohibition of embarking or disembarking before the steamer is anchored.*—In some, if not all, of the Bombay ports, south of Bombay, a rule to this effect already exists.

(c) *Marking the anchorages with permanent buoys.*—At present the selection of the anchorage depends on the preference of the particular ship-master, and this may mean that an anchorage unnecessarily far from the shore is chosen.

We understand that the minor ports between Bombay and Goa have recently been surveyed, for the purpose of ascertaining in which of them piers and wharves can be constructed, that a large scheme of works is in contemplation, and that the question of expediting construction by financing works from loan money is being considered. Mr. Kamat emphasises the fact that here again early action is necessary.

(d) *Detailing a lascar staff on the steamer to assist passengers in embarking and disembarking.*

We agree with recommendations (a), (b) and (d), and recommend that (a) and (b) be brought to the notice of maritime Local Governments and the Darbars of maritime Native States. It was suggested that Port Officers at minor ports in Madras would be in a better position to deal with extortion on the part of the licensed boatmen if they were empowered to deal magisterially and in a summary manner with such cases. We doubt whether (c) is feasible, having in view the fact that the buoys would need to be very strongly moored, in order to stand through the monsoon. Moreover, ships of different draughts use the same port, and an anchorage that suited one draught might not suit another.

Owners in Bombay have at certain ports recently introduced a system under which the deck passenger can purchase a landing ticket from them, and we think this an improvement. It will not, however, by itself get over the difficulty of competition for passengers and consequent congestion in the boats. In practice, a passenger desiring to embark at one of the open roadstead ports, bargains with the contractor for a sum that will cover transit of himself and his belongings from his house to the boat, embarkation thereon, the boat passage itself, and embarkation at the ship, and until a sufficient establishment of boats is entertained either by the Port authorities or the ship-owners, competition will no doubt continue.

Wherever possible, telegraphic communication should be established between ports, in order to save passengers the discomfort of a long wait. A system of night signalling between shore and adjacent villages, to notify the approach of steamers might also be considered.

52. The Committee were impressed with the adequacy of the arrangements obtaining at Bombay at the wharves used by steamers of the Bombay Steam Navigation Company. There are three ticket offices, each constructed on the turnstile and wicket system, with a separate exit to each. About 100 passengers per hour can be provided with tickets from each office. The offices are immediately outside the waiting sheds and within a few yards of the steamer, whilst refreshment rooms and sanitary conveniences are in close proximity. In order to reduce pressure on the wharf ticket offices, the company has 4 or 5 Town offices, mostly in the mill area, whence the majority of the deck passengers are drawn. These offices are opened one day before the steamer departs, and for a period of 9 hours. The result is that there is no difficulty in obtaining tickets.

53. An intermediate class of accommodation is provided for "Upper class" deck passengers on some of the ships of the British India Steam Navigation Company plying between Bombay and coasting ports north and the Persian Gulf, and on the ships of the Bombay Steam Navigation Company and the Indian Co-operative Navigation and Trading Company, Limited, both Bombay lines,

The British India Steam Navigation Company have provided a similar class of accommodation for some years on the Bombay services, and find it popular. They also tried it, with separate cabins, on steamers on the Madras-Rangoon and Calcutta-Rangoon services, but found it unpopular there and discontinued it. Several witnesses stated that there is now a real demand for such accommodation, but separate cabins are not wanted on the Bay of Bengal runs. The two Bombay companies named have provided the accommodation experimentally within the last year or so, and are inclined to think that it will not be popular, and that, so far as concerns the important passenger runs south of Bombay, what the deck passenger wants is a cheap fare, and he is prepared to put up with discomfort. The intermediate accommodation was never found fully occupied on any of the steamers travelled on or visited by the Committee. The Bombay Steam Navigation Company allow $7\frac{1}{2}$ sq. ft. per passenger in the intermediate class, and deck passengers are not allowed into the space set apart for this class, even though the accommodation there is not fully occupied, whilst there is congestion in the deck passenger compartments. The result is that the intermediate class passenger on this line gets considerably more than an average of $7\frac{1}{2}$ sq. ft. No recommendations are called for in respect of the provision of intermediate accommodation. It can be left to the Shipping Companies to determine whether a real demand exists for such accommodation, and if it does, to reserve so much of the deck space. The balance will be available for deck passengers proper. Intermediate class accommodation should be marked off by a barrier from the deck passenger space. As regards admitting deck passengers into the space reserved for passengers of the intermediate class, provided that the passengers in the latter class are given the amount of space for which they have contracted, we can see nothing to prevent owners from admitting deck passengers proper into the balance of the space, should they so desire, and provided the intermediate class passengers do not object.

54. This is nowhere necessary, but some of the cooking galleys should be reserved for Mohamedans (one of the two Separation of Hindus and Mohamedans. when the minimum number of two is carried) and the galleys should be clearly marked, *e. g.*, with the words, in large letters, "*Mohamedan passengers: cooking place,*" "*Hindu passengers: cooking place.*" The Committee think that it might be brought to the notice of owners in Bombay that the supply of fresh water on board is said to be little used in some cases at present by Hindu passengers, because they are uncertain whether the supply has not been loaded into the ship by Mohamedans.

55. The Committee recommend that Upper decks, if of iron, should be sheathed with wood. This is already the rule (made by executive order) in Madras. Sheathing of iron decks.

56. The steamers used in the Bay of Bengal services are more commodious and faster than those employed in 1891, and the Committee recommend the cancellation of the Notification by the Government of India in the Department of Finance and Commerce, No. 1355, dated the 14th March 1899, which ruled that the voyage from Burma to Madras in the Foul season should be counted as a "Long" voyage, whatever the scheduled duration, and all other voyages between Burma and Madras should be counted as "Short" voyages, irrespective of the scheduled duration. The question whether any particular voyage between Madras and Burma is a "Long" voyage may be settled by reference to the scheduled duration of the voyage for the particular steamer. Foul season voyage, Burma—Madras ports.

57. In the larger ports this is conducted by the Provincial Marine Department, the Port Officers being responsible Administration of the Act. for the work. In some of the smaller ports in Bombay, where there is no Port Officer, the duties imposed by the Act are carried out by subordinate officers of the Salt and Excise Department. A somewhat similar arrangement exists in some of the minor ports in Madras. In Bombay itself, owing to shortage of staff, the assistance of the Customs Department has been enlisted, for the purpose of giving Certificate "B". In the maritime Native States, we understand that there is legislation approximating to the Indian Act, but we are not aware of the extent of the analogy,

nor of the details of the machinery. In the smaller ports, except for an occasional count of the numbers carried, administration of the Act can hardly be said to be existent. In some places, *e.g.*, Ye on the Tennasserim coast, places are, or were, stopped at which have not been scheduled as ports, and where no Government Officer is available to perform any of the duties under the Act. Compliance with essential requirements—limitation of the number of deck passengers carried and the provision of a certain scale of amenities for them—exists, but this is owing to the commonsense of owners, not to any action on the part of Government Officers. In several cases indeed the Committee found that owners, more particularly the British India Steam Navigation Company, have furnished more than the bare minimum of amenities laid down, recognising that public opinion holds that the scale prescribed by the Act, now 34 years old, is inadequate to existing conditions and present day views regarding the education of the labouring classes. There is general concurrence of opinion that the administration should be made more effective.

58. The Committee recommend, Captain Ste. Croix and Mr. Ritchie dissenting, that the working of the Act should remain with the Provincial Marine authorities, but that there should be a central inspecting authority, working directly under, and advisory to, the Department of Commerce, and located in Bombay, as being the centre of the largest passenger traffic. The main duties of this authority would be the following :—

- (1) Securing uniformity in the working of the Act. This would imply constant tours of inspection.
- (2) Preparation of the *Instructions for the Survey of Passenger Accommodation*.
- (3) Advising the Commerce Department in special cases involving doubt as to the application of the Instructions.
- (4) Preparation of an Annual Report on the working of the Act, and particularly on the extent to which it secures the amenities required for deck passengers.

The central authority would correspond as regards (2) and (3) to the Principal Ship Surveyor under the Board of Trade. The Inspecting Officers should, the Committee advise, be recruited from the Engineering branch of the Royal Indian Marine, from officers experienced in the survey of ships for passenger accommodation. We think that two Inspectors, or possibly one, should be able to carry out the touring work needed. Mr. Kamat and Dr. Batra are of opinion that one of the Inspectors should be an Indian, and should be entertained for training.

59. The Committee recognise that this must in the nature of things be carried out by subordinate officers. They recommend that such minor ports should continue to be notified as ports under Section 6 (1) of the Native Passenger Ships Act, 1887, but that exemption from such of the provisions of the Act as may be necessary should be allowed under Section 57 (1), *ibid*.

60. We recommend that maritime Local Governments should be moved to prepare a Manual (as in Bengal and Madras) for the use of Provincial Officers working the Act.

A manual recommended.

The Manual should contain the following :—

- A. The Native Passenger Ships Act.
- B. Rules framed by the Government of India under the Act.
- C. Rules framed by the Local Government under the Act.
- D. Instructions, as proposed in paragraph 37 above, as to the survey of Passenger Accommodation for the purpose of granting Certificates under the Act.
- E. Rules regarding accommodation, etc., to be reserved for the crew.

F. Executive orders framed by the Government of India or the Local Government for the guidance of officers working the Act.

G. Forms of Certificates given under the Act.

61. The cost of a small central inspecting establishment, may be estimated approximately as follows :—

	Rs.	Rs.
1st Inspector per mensem	1,000	per annum 12,000
2nd „ „	600	„ 7,200
Office Establishment „	150	„ 1,800
Contingencies „	100	„ 1,200
Travelling allowances „	800	„ 9,600
Total Rs. „		31,800

If a third Inspector is appointed, the cost will be enhanced accordingly.

The fees at present collected are trifling, viz., Rs. 32 for a survey for Certificate "A" (which is usually applied for only once a year); and nothing for Certificate "B." The issue of Certificate "A" implies the exercise of expert knowledge, and we think (Captain Ste. Croix and Mr. Ritchie dissenting) that owners can reasonably be required to contribute more towards the administration of the Act than they do at present. We suggest a fee varying with the class of voyages as follows :—

Classification of voyage.	Fee proposed.
Specified voyages : festival season	Rs. 15
Specified voyages : non-festival seasons	„ 100
Non-specified voyages : Bombay coast	„ 100
Non-specified voyages : Short voyage, Fair season	„ 100
Non-specified voyages : Short voyage, Foul season	„ 100
Non-specified voyages : Long voyages, Fair or Foul season	„ 100

An owner will rarely want to have a steamer measured for more than 2 or 3 of the 5 classes, e.g., for Festival and non-Festival seasons; or for Non-Specified Short voyages, Fair, and the same, Foul, seasons. We recommend below making Certificate "B" a reality, and the fee for the grant of this certificate may be fixed at Rs. 5 on each occasion. In the Straits Settlements legislation ("The Passenger Ships Ordinance, 1890") it is laid down that a fee not exceeding 5 dollars shall be payable for the corresponding certificate. We anticipate that the receipts will amount to about Rs. 2,500 from Certificate "A" and Rs. 40,000 from Certificate "B." This will go some way towards covering the cost of administering the Act more effectively.

We observe that it seems doubtful whether the levy of fees in respect of Certificate "A" is at present legally possible.

This is given by an Officer of Government (Section 12 of the Native Passenger Ships Act, 1887). The Act requires him, having ascertained what the number of passengers on the particular voyage is (a figure that he cannot know until just before the steamer leaves, since it is the practice of owners to allow deck passengers to come on board until the last moment), thereafter to certify that the ship carries food, fuel and water sufficient for that number of passengers for the duration of the voyage, or to satisfy himself that the passengers have brought provisions with them. It is of course important, as a safeguard in the event of a break-down of engines, that sufficient provisions should be on board, especially on runs where the ship goes some distance to sea, e.g. (i) from Bombay to Karachi or Gulf ports, (ii) from Madras ports or Calcutta to Burma or Straits Settlements ports. But the 1890 Commission pointed out that in fact the Certificate was then being given as a matter of course, and that the whole procedure was a farce, which it remains to-day. It has been shown that the inspecting officers cannot check the ship's stores, because he does not know,

until the last moment, how many passengers there will be. Nor can he, in practice, ascertain whether every passenger on board has provisions with him. In some cases that we have seen, both of alternative phrases in the printed form of Certificate have been left as printed, no attempt being made to strike out the inappropriate alternative. An expert witness explained that the only real check carried out by the officer who gives Certificate "B" is the count of the persons actually found on board, against the maximum shown in Certificate "A." This count is occasionally made, when the decks present the appearance of being abnormally crowded. Otherwise Certificate "B" is a formality. We consider that the certificate is intended to represent an important check; that the check ought to be made, but that it should be turned into a real check; and that Certificate "B" should continue to be given by a Government officer. The Committee do not consider it expedient that the Certificate should be furnished by the Master (as was recommended by the 1890 Commission). They recommend that owners should be required to keep, in the ship, provisions, fuel and water, on the scale prescribed, sufficient, not for the number on board on the particular voyage, but for the maximum number of passengers allowed to be carried. It will then be a matter of little time or difficulty for the inspecting officer to check the provisions, etc., on board, since the check can be made directly the steamer arrives in port. The Committee think that the requirement need not be insisted upon, in the case of the daily passenger steamers on runs south of Bombay, these runs being frequented by ships, and the distance from land being short.

In Madras there is a local rule (paragraph 202 of the Madras Port Manual) to the effect that before granting Certificate "B", and also before granting the supplementary certificate referred to in Section 19 of the Native Passenger Ships Act, the number of passengers for whom space remains available at the next port of call shall be noted thereon by the officer appointed under Section 7 of the Act. This is for the information of the officer at the next port of call, and a similar rule might be introduced in other maritime Provinces.

62. The following may be recommended to owners, as improvements which we consider desirable:—

Miscellaneous improvements.

- (a) Provision of a raised fore and aft gangway above the Upper deck, for working the ship where possible; this already exists in many steamers, and would economize space on the deck itself.
- (b) Provision of a caterer's shop on all steamers, the shop-keeper to be drawn from the races mostly carried on the run; such a caterer is most likely to know and keep in stock the varieties of food commonly consumed by deck passengers. Here again the shop already exists in the majority of ships employed on regular passenger services.
- (c) The issue of cheap Coaching Tariffs, on the lines of the cheap pamphlets issued by Railway Companies.

63. We think that owners should be required to employ an official as Passenger Inspector on every steamer licensed to carry 100 passengers or more as the maximum. The Committee consider that such an official would be a useful intermediary between the master and the passengers, and a sort of protector of the latter against ill-treatment and peculation at the hands of the subordinates of the ship. He would, in a general way, fulfil the functions carried out by the guard on a Railway train, and in addition would instruct the passengers as to the location and proper use of the amenities provided for deck passengers.

64. Much more publicity should be provided than at present. All passengers, latrines, galleys and washing-places should be clearly indicated by means of placards bearing the appropriate words in large letters in English and the chief Vernacular language, e. g., "*Women's Washing Place*," etc. Publicity should be given to the fact that the ship carries a medicine chest, and, in some cases, a Medical Officer. Each deck should also be provided with a notice stating what the chief amenities provided are, and their location.

65. The Committee recommend the appointment of small bodies of non-official visitors at the chief ports. They should be appointed by the Local Government, and have authority to visit steamers and to make recommendations to the ship owners, in the case of any irregularities that may come to their notice.

66. The following special conditions are laid down in the Native Passenger Ships Act, 1887, in respect of voyages between ports in British India and the Red Sea :—

Sections 11 (f) and 25.—The ship must be propelled principally by steam.

Sections 11 (f) and 26.—The ship if it carries more than 100 passengers, must carry a Medical Officer.

Sections 27 and 28.—The ship must touch at Aden and obtain there a clean bill of health.

Section 29.—A bond is required from the owners, etc.

Section 30.—The Local Government may direct medical inspection of the passengers.

Paragraph 5 of the Notification of the Government of India in the Department of Finance and Commerce, No. 1356, dated the 14th March 1889, also directs that no ships engaged on such a voyage shall carry Native passengers on two between decks. Paragraph 6 of the same notification also states that every ship performing a voyage between a port on the West coast of India and a port in the Red Sea "shall, if the ship is propelled by sails, contain in the between decks not less than 12 superficial feet and 72 cubic feet of space for every passenger, and shall, if the ship is propelled by steam, or partly by steam and partly by sails, contain in the between decks not less than 9 superficial feet and 54 cubic feet of space for every passenger." In other words the space to be made available for passengers proceeding to the Red Sea is to be the same as for a "Long" voyage in other waters.

Special rules were also issued in the Notification of the Government of India in the Department of Finance and Commerce, No. 986, dated the 15th February 1884, for ships proceeding to Red Sea ports. From the "Note" in the induction to the Notification of the Government of India in the Department of Finance and Commerce, No. 1354, dated the 14th March 1889, it would seem that these rules were intended to apply "to the pilgrim traffic between India and the Red Sea ports", which was governed at the time by the Native Passenger Ships Act, 1887 (*vide* Section 4 of the Pilgrim Ships Act, 1895). At the same time, as the Notification reads, the rules might be held to apply to voyages performed under the Native Passenger Ships Act, unless they have since been cancelled, a point on which no information is traceable. It is noteworthy however that with a few exceptions provisions laid down in this Notification now find a place *mutatis mutandis* in the Pilgrim Ships Act, 1895.

The only point as to which the conditions in the Red Sea have been brought specially to our notice by witnesses is the need of special measures to secure ventilation, in view of the fact that the sea is land-locked and still, and that a following wind may make cowl ventilation of no effect. The occasions on which ships travel with numerous passengers are, however, practically confined to voyages under a Pilgrims Act Certificate, and for the present the Committee do not consider it necessary to make recommendations to cover the comparatively few passengers carried to the Red Sea under a Native Passenger Certificate.

67. The existing rule, prescribed in Section 2 (1)(c) of the Native Passenger Ships Act, 1887, is that sailing vessels come under the Act only if carrying over 30 passengers. Local Governments have authority however to declare that such vessels shall come under the Act if they carry over 15 passengers, (*Section 2 (3)*) and the Government of Madras have extended the Act to voyages in sailing vessels carrying more than 15 passengers to the Straits Settlements or to Ceylon,

The passenger trade in sailing ships is of small extent. In Calcutta, Bombay, Burma and Madras it is dead. In Karachi about 500 passengers were carried in 1920, and the figure might in a normal year have been somewhat higher than this, since sailing craft requisitioned during the war had not yet been fully restored. No instance was brought to our notice of a sailing ship carrying over 15 passengers in Madras or over 30 elsewhere and, therefore, calling for the issue of a Certificate "A."

The amenities provided on sailing craft are non-existent, and at Karachi and Mangalore we were informed that total losses were frequent. We recommend that Section 2 (c) of the Native Passenger Ships Act, 1887, be modified, so as to bring within the restrictions of the Act all native craft carrying more than 15 passengers. This will bring certain sailing ships in Karachi, and possibly elsewhere, within the Act. We hardly think it necessary to recommend a change in the existing space allowances ($\frac{6' + 4'}{8'}$; $\frac{12' + 4'}{12'}$; $\frac{12'}{12'}$) (Sections 18 and 21) the numbers carried in the aggregate and on particular voyages being trifling.

68. The title of the Act should be changed to The Indian Passenger Ships Act.

68A. Our recommendations in this Chapter may be summarised as follows :—

Summary.

- (i) The Madras rule that if a vessel leaves a port in the Fair season and arrives at her destination in the Foul season, the Foul season space allowances should be applied, should be adopted generally.
- (ii) A medical officer should be carried on board Native Passenger Ships if the scheduled duration of the voyage between terminal points is 72 hours or over, and if the number of passengers carried on the voyage is 150 or over. The qualifications that should be required from the Medical Officer are (a) registration in an Indian Medical Directory, or (b) a British or Colonial registered qualification, or (c) certain foreign qualifications (for foreign ships). The Medical Officer need not be a servant of Government. It would be an advantage if he were recruited from the races chiefly carried on the particular service.
- (iii) A permanent hospital should be provided on the Upper deck of all steamers proceeding on a "Long" voyage when the number of passengers carried exceeds 400. There is no objection to cabins on the Upper deck being used as a Hospital. Not less than 4 bunks should be provided, and there should be facilities for the separation of male and female patients.
- (iv) Shelter arrangements should be constructed at the earliest date possible wherever there is a regular passenger trade of any extent, and where Port Trusts exist, the erection of suitable shelter should be made a liability of the Port Fund, if it is not a liability already. Shelter sheds should be as near as possible to the place where passengers will embark. The attention of other maritime Local Governments may be drawn to the Bombay Landing and Wharfage Fees Act, 1919.
- (v) Better policing arrangements should be made in respect of the surf boats.
- (vi) The embarking and disembarking of passengers before a steamer is anchored should be prohibited.
- (vii) Lascars should be detailed to assist passengers embarking and disembarking.
- (viii) Improvement, where possible, of telegraphic communication between ports.
- (ix) Introduction, if possible, of a system of night signalling between the shore and adjacent villages.
- (x) Intermediate class accommodation should be marked off by a barrier from the deck passenger space.

- (xi) A proportion of the cooking galleys should be reserved for Mohamedans, and the galleys should be clearly marked.
- (xii) Upper decks, if of iron, should be sheathed with wood.
- (xiii) The question whether any particular voyage between Burma and Madras is a "Long" or "Short" voyage should be decided by reference to the scheduled duration of the voyage, for the particular season. Government of India, Finance and Commerce Department Notification No. 1355, dated 14th March 1899, should, therefore, be withdrawn.
- (xiv) The working of the Native Passenger Ships Act should remain with the Provincial Marine authorities but a Central Inspecting Authority of 2 Inspectors, with a small office establishment should be appointed, working directly under the Department of Commerce, and located in Bombay. The main duties of this Authority would be—
- (1) Securing uniformity in the working of the Act. This would imply constant tours of inspection.
 - (2) Preparation of the Instructions for the Survey of Passenger Accommodation.
 - (3) Advising the Commerce Department in special cases involving doubt as to the application of the Instructions.
 - (4) Preparation of an Annual Report on the working of the Act, and particularly on the extent to which it secures the amenities required for deck passengers.

The Inspecting Officers should, the Committee think, be recruited from the Engineering Branch of the Royal Indian Marine, from officers experienced in the survey of ships for passenger accommodation.

- (xv) Minor ports should continue to be notified as ports under Section 6 (1) of the Native Passenger Ships Act, 1887, but exemption from such of the provisions of the Act as may be necessary should be allowed under Section 57 (1) *ibid.*
- (xvi) Maritime Local Governments should be moved to prepare a Manual (as in Bengal and Madras) for the use of Provincial Officers working the Act. The Manual might contain the following :—
- A. The Native Passenger Ships Act.
 - B. Rules framed by the Government of India under the Act.
 - C. Rules framed by the Local Government under the Act.
 - D. Instructions, as proposed in paragraph 37 above, as to the survey of Passenger Accommodation, for the purpose of granting Certificates under the Act.
 - E. Rules regarding accommodation, etc., to be reserved for the crew.
 - F. Executive orders framed by the Government of India or the Local Government for the guidance of officers working the Act.
 - G. Forms of Certificates given under the Act.
- (xvii) A fee should be charged for certificate "A", varying with the class of voyage, as follows :—

	Rs.
Specified voyages, festival seasons	15
Specified voyages, non-festival seasons	100
Non-specified voyages, Bombay coast	100
Non-specified voyages, Short voyage, Fair season	100
Non-specified voyages, Short voyage, Foul season	100
Non-specified voyages, Long voyages, Fair or Foul season	100

A fee of Rs. 5 should also be levied for certificate " B " on each occasion.

- (xviii) Owners should be required to keep in a ship, provisions, fuel and water, on the scale prescribed sufficient, not for the number on board on the particular voyage, but for the maximum number of passengers allowed to be carried.
- (xix) The Madras rule that an officer, before granting certificate " B " and also before granting the Supplementary Certificate referred to in Section 19 of the Native Passenger Ships Act, shall note thereon the number of passengers for whom space remains available at the next port of call, may be introduced in other maritime Provinces.
- (xx) The following may be recommended to owners, as improvements which we consider desirable :—
 - (a) Provision of a raised fore and aft gangway above the Upper deck, for working the ship, where possible.
 - (b) Provision of a caterer's shop on all steamers, the shop-keeper to be drawn from the races mostly carried on the run.
 - (c) The issue of cheap Coaching Tariffs.
- (xxi) Owners should be required to employ an official (styled a Passenger Inspector) on every steamer licensed to carry 100 passengers or more as the maximum.
- (xxii) Much more publicity should be provided than at present. All passengers' latrines, galleys, washing-places, etc., should be clearly indicated by means of placards.
- (xxiii) Local Governments should appoint small bodies of non-official visitors at the chief ports, who should be permitted to visit steamers and make recommendations to the ship-owners in the case of any irregularities that may come to their notice.
- (xxiv) Section 2 (c) of the Native Passenger Ships Act should be modified so as to bring within the restriction of the Act, all Native craft carrying more than 15 passengers.
- (xxv) The title of the Act should be changed to " The Indian Passenger Ships Act."

CHAPTER VIII.

69. The chief structural changes recommended are :—

(a) Provision of more latrines for passengers, and prescription of a special type for new latrines. The location of latrines for males and females to be in separate parts of the ship.

(b) Increase in the amount of between deck ventilation, where necessary, to 5 sq. inches per adult.

(c) Provision of sleeping platforms in between decks.

(d) Installation of water taps, one in each battery of latrines.

(e) Provision of more fresh water taps.

(f) Arrangements for the segregation of cattle and other animals, if carried.

(g) Sheathing iron weather decks with wood, where necessary.

All the above should be carried out within one year of the revision of the Act and rules.

* The above additions and improvements can, in the Committee's opinion (Mr. Ritchie dissenting), be made without adding greatly to the owners' capital account, or necessarily increasing deck fares.

70. During our tour we received much cordial co-operation from the local officials, and desire to acknowledge our obligations for their assistance. We

Acknowledgments.

also wish to acknowledge the assistance received from the various shipping companies (many of whose steamers we visited, as occasion presented itself, without warning) and from the Superintendent of Government Printing, India. Lastly, we wish to record our indebtedness to all who, at the expense of time and labour, furnished us with written answers to our questions or gave oral evidence before us.

71. The Committee cannot close their report without bringing to the particular notice of Government the ability and zeal displayed by their

Appreciation.

Secretary, Mr. E. F. Rogers. It was largely owing to him that the Committee found themselves able to get through a considerable volume of touring and inspection work within a reasonable time, and they are glad to take this opportunity of expressing their appreciation of his services.

J. P. HARDIMAN, C.B.E., I.C.S., *President.*

P. DE STE. CROIX*

G. L. BATRA,* M.B., CH. B.
(EDIN.), D.P.H., *Dy. Sanitary
Commissioner, Bengal.*

B. S. KAMAT,* M.L.A.

JAS. M. RITCHIE,* M.I.E.S.

} *Members.*

E. F. ROGERS, *Secretary.*

Calcutta, the 27th April 1921.

*Subject to a Note.

DECK PASSENGER COMMITTEE.

Minute of Dissent.

With the general principles and conclusions of Deck Passenger Committee's Report, which I shall refer to in this Note, as the "Majority Report," I am in agreement. I do not agree, however, to the several points detailed hereafter. The differences are mainly not of principle, but of the scale on which the principles embodied therein can be applied, in practice, while keeping in view the "Terms of Reference" under which this Committee is acting.

- (a) *Space*.—Considered in conjunction with the "Classification of Voyage" to which it applies (Chapter II, page 13).
- (b) Long and Short voyages (page 18, Chapter II).
- (c) Airing space.
- (d) Exposed deck (Chapter II, page 22).
- (e) Rate Wars (Chapter II, page 26).
- (f) Sleeping Platforms (Chapter III, page 30).
- (g) Sweepers (Chapter V, page 34).
- (h) Latrines scale to be adopted (Chapter V, page 35).
- (i) Fresh water (Chapter V, page 35) in 'Tween decks and 2 taps, forward and aft).
- (j) Central Authority (views on arrangement), Chapter VII, page 44.
- (k) Provisions.
- (l) Passenger Inspector (Chapter VII, page 46).
- (m) Remarks on Chapter VIII.

2. With the general principle that for "additional comfort more space should be given to deck passengers" I am in agreement, but I do not agree that 9·2 sq. ft. (result of the 1890 Commission's experiments) should be used as a basis for space calculations. When a steamer's deck is measured for passengers, deductions are made by the Surveyor for obstructions, such as part of space beneath ladders, masts, ventilators, passage for crew working ship, etc., etc., with the result that in "actual practice" much more space is available than shown by actual measurement. To this must be added the space available on top of hatches, which is of large extent and specially favoured by deck passengers, but is not measured as passenger space. To illustrate the extent to which measurement deductions may affect deck space, I give below the reductions made on Bombay Steam Navigation Company's vessels between the years 1909 and 1919, from figures supplied by the Company. The steamers had actually at times carried their maximum, and no structural alterations have been made to decrease space, the steamers being exactly the same as before.

Cargo and passenger type.

Steamer.	PASSENGERS CARRIED.			
	1909.	1919.	Difference.	per cent.
Mahanadi	1,024	751	273	26·6
Kaveri	927	700	227	23·3
Sabarmati	1,013	805	208	11·0
Courland	1,043	721	322	30·0
Bahaduri	1,258	1,121	137	10·0
Indravati	861	710	151	17·5
Ponani	383	698	185	20·9
Netravati	1,096	950	146	13·3
Satrungi	955	818	137	14·3
	9,060	7,274	1,786	166·9
				Total of percentages.

Total of differences 1,786. $\frac{1786}{9} = 198$ passengers : average reduction.

Total passengers (1,919) $\frac{7,274}{9} =$ Average per steamer carried : 808 passengers.

$\frac{166·9}{9} = 18·5$ per cent., average reduction on the 9 steamers.

The average reduction of passengers per steamer is shown to be 198: as each passenger was allowed 6 square feet, this leaves free space of 1,188 square feet.

I have not taken into account the 4 sq. ft. allowance for between deck passengers' airing space. If this is allowed for, the free space above will be increased, as a steamer of this type (a two-deck steamer: 1,000' Between deck, 1,200' upper) at $\frac{6+4}{6}$ would carry—

upper 1,200'	= 89	passengers.
between 1,000'	= 166	,,
—————	—————	,,
2,300	255	,,

$\frac{2200'}{255} = 8.6$ sq. ft. per average passenger. Then $198 \times 8.6'$ gives 1702.8 sq.ft. free space.

Average number of passengers per steamer (1919) = $808, \frac{1702.8}{808}$ sq. ft. = 2.1 sq. ft. available for each passenger, in addition to his allowance.

The result of the reduction is, that though on paper, the passenger at $\frac{6+4}{6}$ is supposed to get only an average as above of 8.6 sq. ft. he actually gets 8.6 sq. ft. + 2.1 sq. ft. = 10.7 sq. ft., exclusive of the use of the large areas open to him on the hatches. It is, therefore, upon this account—the number of spaces available, but not measured—that I cannot accept $9.2'$ sq. ft. as a basis of calculation.

In addition to existing deductions, allowance must be made for present Committee's recommendation of other passage allowances, viz., passage 21" broad in tween decks, no passage under 2'-6" to be measured (between rail and casing), and 18" passage to be deducted from alleyways under 6'-0" wide.

These recommendations will all have the practical effect of increasing the average space per head of the deck passenger above his legal right, and incidentally decreasing the carrying capacity by a much greater percentage than is shown in the various examples in the majority report.

The percentages shown in the majority report are useful for comparison, but due allowance should be made for the additional spaces which I have mentioned in deciding a space unit. I have, therefore, submitted a classification of voyages with their relative space, which I consider more in accordance with our "Terms of Reference" and suitable for the trades concerned.

My reasons for sub-dividing the present short voyage of 120 hours into sections (a) and (b) of 72 hours and 120 hours respectively are:—

That voyages on the Bombay Coast come under (a) 72 hours and some of the voyages on Bengal side. A study of the majority Report and map shows that the distances between ports on Bombay side are short, the ships are never far from land, and as it is a purely coasting traffic, is on a different footing from deep sea. Outwards, if a vessel is carrying her maximum, it is only for a short period to the first port when passengers disembark and release space for remainder. Inwards the reverse applies, I therefore, consider a smaller space allowance should be given. I need not go further into this point, as a study of Majority Report makes conditions clear. There are periods of "rush" which extend for a few days at a time, two or three times a month, but during the remainder of the month the steamers run with perhaps 60 per cent. of their complement at most—figures are given of actuals in statement B.

About 90 per cent. of the traffic on Bombay side are deck passengers proper, and during the sitting of the Committee, I do not consider that the evidence given voices the views of the actual Deck Passenger. We travelled on several steamers on Bombay and Bengal sides and visited the tween decks during the voyage. We interviewed the "deck passengers" and Dr. Batra spoke to them in their own language. My opinion was that they looked very happy. From the type of evidence given, I am of the opinion that the agitation is coming from a class of passenger who wishes more comfort, and can afford to pay for

it, but prefers to travel on deck. They are using the deck passenger cause as a lever to secure more space, which will benefit *them* more than the deck passenger proper. If any increase of fares is required, the deck passenger (forming 90 per cent. of the travelling public) will bear the heaviest share.

At the same time a great deal of evidence was given in this respect which I think was actuated by true humanitarian and social service motives.

One important point in relation to the Bombay Passenger Trade (purely passenger) is that due to the traffic coming in *rushes*, it means that the present fleet is only run at a *maximum* for a short period *each month*. The remainder of the period the steamers are *more than required* and during the slack periods, some of the steamers could be laid off.

If space is increased to any great extent this position will be aggravated, as the Company will have to add to their fleet perhaps three or four steamers to deal only with the *rush periods* (exclusive of any additions found necessary to cargo and passenger combined service). This will mean that the "extra steamers" will be added to the steamers which can "already" be laid up during slack periods. The result will be increased costs, as *those vessels cannot be used for any other purpose*, being designed for *passengers only and no cargo*. The undernoted classification of voyages and suggested space allowance for each class of voyage, I have drawn up after due consideration of all trades affected, and am of the opinion that the spaces mentioned (in conjunction with the other spaces available) will form an ample basis for calculation of space allowance, and give the deck passenger more comfort. I am also of the opinion that any greater increase will undoubtedly lead to a large increase in fares. The large increase of wages recently granted on the Bombay side, combined with the high and rising cost of coal may, irrespective of any space allowances given by this Committee, make it necessary for its owners to raise their fares.

1st class Bunker coal	Rs. 42	per ton delivered Bombay.
2nd " " "	35	" " "
1st " " pre-war	14	" " "
2nd " " "	12-8	" " "
Freight lately	28	Calcutta to Bombay.
" pre-war	6	" " "

Space suggestions based on the following classifications, and on the assumption that the Committee is considering the increase of space, in accordance with "Terms of Reference," to give the deck passenger the maximum space without an increase of fare, or at most a small increase.

Classification of voyages and space allowances:—

Present allowance.	A	$\frac{6'+4'}{6}$	1	(A) Excursion : specified runs : 24 hours between terminal ports, Fair season only	(a)	$\frac{6+4}{6}$ sq. ft.
	B	$\frac{6'+4'}{6}$		(B) Do. Non-Excursion, Fair season only (24 hours as above)	(b)	$\frac{7\frac{1}{2}+4}{7\frac{1}{2}}$ "
	C	$\frac{6'+4'}{6}$	2	(C) Short Voyage (a) Non-specified runs 72 hours between terminal ports, Fair season	(c)	$\frac{8+4}{8}$ "
	D	$\frac{9'+4'}{9}$		(D) Do. Foul season	(d)	$\frac{9+4}{9}$ "
	E	$\frac{6'+4'}{6}$		(E) Short voyages (b) Non-specified 120 hours, Fair season	(e)	$\frac{9+4}{9}$ "
	F	$\frac{9'+4'}{9}$		(F) Do. Foul season	(f)	$\frac{10+4}{10}$ "
	G	$9'+6'$	3	(G) Long voyages over 120 hours, Fair and Foul seasons	(g)	$9+6'$ as before, "

Examples of results obtained from above classifications and space allowances.

		Actual cases taken from certificates.	Proposed.
Excursion	(A) Present	868 passengers	868 passengers.
Do.	specified (B)	868	= 706
		Difference 162 or 18.7%	
Short 72 hours (Fair)	(C)	926	= 768
Do.	(Foul) (D)	704	= 704
		Difference: Nil.	

Examples of typical vessels two large berths, and small tween deck: Bombay passenger type.

1	(A) Excursion: specified voyages: 24 hours		
	$\frac{6+4}{6}$: no change		
	(B) Non-excursion: specified voyage: 24 hours		
	$7\frac{1}{2}$ sq. ft. + 4 sq. ft. against $\frac{6+4}{6}$		
	(a) between decks 300': carried at present 50, would carry 40	50	40
(b) Main or 1st upper deck 1,000': carries at present 133, would carry 112	133	112	
(c) Shade (or 2nd upper) 1,000': carries at present 166, would carry 133	166	133	
	<hr/>	<hr/>	
	349	285	

A reduction of 64 passengers per 2,300 sq. ft. The average space allowed would become 8 sq. ft. against 6.5 at present. A reduction of 18.3 per cent.

Typical Bombay cargo and passenger type (with two decks, large upper and smaller tween deck).

(C) Short voyage (a) non-specified runs 72 hours between terminal ports. Fair season. At $\frac{8'+4'}{8'}$ against $\frac{6'+4'}{6'}$.

(a) Between deck 1,000'—125 against 166 passengers.

(b) Upper deck 1,200'—87 " 89 "

or 212 against 255 at present, a reduction of 43 passengers or 17.0 per cent. in 2,200 sq. ft.

(D) Short voyage (a) non-specified: 72 hours between terminal ports, Foul season $\frac{9'+4'}{9'}$ (as before).

(E) Short voyage (b) non-specified runs: 120 hours between terminal ports.

Typical two deck type (large tween small upper deck). Fair season. At $\frac{9'+4'}{9'}$ against $\frac{6'+4'}{6'}$.

(a) Between deck 1,000'—111 139 would carry passengers against 172 at present a reduction of 33 passengers or 19.2 per cent. in every 1,700 ft. and an average increase from 9.8 to 12.25 sq. ft.

(b) Upper deck 700'— $\frac{28}{139}$.

(F) Short voyage (b) non-specified runs: 120 hours between terminal ports, Foul season. At $\frac{10'+4'}{10'}$ against $\frac{9'+4'}{9'}$.

(a) Between deck 1,000'—100 130 passengers against 139 at present; a reduction of 9 passengers, or 6.5 per cent. in every 1,700 ft. and an average increase from 12.2 to 13 ft.

Passenger and cargo type: two decks.

(b) Upper 700'— $\frac{20}{130}$

Further examples : three-decked type.

(E) Short voyage (b) *Fair season* : 120 hours $\frac{9+4}{9}$ proposed, against $\frac{6+4}{6}$.

	1,000' carries at present	166	would carry	111
	400	"	"	Nil
	400	"	"	22
				39
Total	1,800		188	150

A reduction of 38 passengers or 20 per cent. approximately in every 1,800 ft. and an increase in average space from 9.5 to 12'.

(F) Short voyage (b) *Foul season* 120 hours.

$\frac{10+4}{10}$ proposed against $\frac{9+4}{9}$.

	1,000 carries	111	passengers would carry	100
	400	"	Nil	Nil
	400	"	39	40
Total	1,800		150	140

A reduction of 10 passengers or 6.6 per cent. in every 1,800 ft. and an increase in average space from 12 sq. ft. to 12.8 sq. ft.

(G) Long voyage *Fair and Foul* : over 120 hours : proposed $\frac{9+6}{9}$ as before.

3. *Long and Short Voyages*.—In determining the duration of a "Long and Short voyage" most witnesses expressed the opinion that 120 hours was too long for a Short voyage.

In expressing this opinion they were not referring to the number of hours alone, but to the "Space allowance" for that number of hours, and suggested the reduction to 72 hours with the object of obtaining the *Long Voyage Space after 72 hours*, forgetting that they could obtain their object by increasing space without decreasing hours.

As conditions on the coast vary greatly, I consider the object can be attained by sub-dividing the Short voyage into "(a)" and "(b)" classes. "(a)" for a duration of 72 hours, with corresponding space allowance, "(b)" for 120 hours, with an increase of space allowance.

"(a)" certificate would cover the runs on Bombay coast, where runs are short between ports and close to land, where also when vessels carry their maximum number, it is only for a short period (see Majority Report). It would also cover a few runs on the Bengal side.

4. *Airing space*.—I agree that calculations may be simplified by the adoption of a flat rate per head per passenger. I would agree to a flat rate being substituted in my scale of space allowances, which would give the same maximum number of passengers as found by my space allowance.

5. *Exposed deck in foul season*.—While again agreeing to the principle, I submit that no need for this has made itself apparent during the past 30 years, and the present arrangements for upper deck passengers on the Bombay coast in the Foul season have been found to be ample.

This would be a most serious blow at transit between Bombay and the Konkan ports during the Foul season, as the Steamer service is the only means of transit, and the service is well patronised. Steamers are never more than a few miles from the Coast (see map) and should they strike exceptionally bad weather, there are many ports affording excellent shelter near Bombay—Janjira, Jaygad, Ratnagiri, Viziadrag and Marmagoa.

Excellent arrangements are in existence, and the Company is informed by telegraph of the approach of any disturbance on the coast, and its direction, and takes action accordingly.

6. *Rate Wars*.—I have no opinion to offer on this subject. The data at my disposal do not permit me to express my opinion and I prefer to leave it to the competent authorities concerned.

7. *Sleeping Platforms*.—While agreeing that they appear to give more comfort to the deck passenger, many steamers carry cargo and passengers alternatively in'tween decks. I do not agree that it should be *made compulsory* but should be *recommended* to owners as an addition to the comfort of deck passengers.

8. *Sweepers*.—Companies already provide sweepers, and I do not agree that further action is necessary in this respect.

Should the Majority Committee recommendation be accepted in this respect, I do not agree that the number of sweepers should be based on the number of *passengers* carried. I suggest that the number of *seats in latrines* is the proper basis of calculation, and that 1 sweeper for every 12 seats is ample.

9. *Latrines*.—I would recommend that the scale of latrines be altered, and divided into two scales. One scale for small steamers say up to 275 feet in length, and the other scale for steamers above that length, with a maximum of 60 seats as stated in Majority Report. I would suggest $1\frac{1}{2}$ per cent. up to 275 feet long, and 2 per cent. above 275 feet long.

My reasons for the sub-division are my observations on board small steamers, and the conditions of traffic. I have carefully studied the deck plans of several small type cargo and passenger on Bombay coast and find it would be very difficult, if at all possible in some cases, to find space. The only space which I could see suitable would entail removing first class passengers' cabins aft, and fitting them there. This would be a very expensive piece of work, and when carried out on 12 steamers would mean a very large item. On the smaller, Ferry, purely passenger, steamers, space is also very much restricted, but if $1\frac{1}{2}$ per cent. is accepted, with the increased space allowance and resulting reduction of passengers carried, I think they might be fitted. Another very important point is that these purely passenger steamers are *restricted in draft* by the ports they enter. At present when full complement is on board with coal and water, they are down to their mark. Any great addition of weight due to a large number of latrines and strengthening and alterations to structure might not be permissible. I would very strongly recommend special consideration in this respect. Lastly, the nature of the traffic is such that the ships never have the full maximum on board for a long period, the period varying between $2\frac{1}{2}$ hours, Bombay to Alibag and 10 hours to Ratnagiri (longest): they generally arrive at their destination with few passengers on board outward, and reverse inward. A study of the Majority Report gives full details of the above conditions. Though I have suggested a scale of $1\frac{1}{2}$ (an increase of 50 per cent.) on those small steamers, I am not convinced that on those short voyages, with their special conditions, any increase is necessary.

10. *Water Taps*.—I do not recommend water taps to be placed in'tween decks, in the first place, from the habits of the usual deck passenger. I consider they would add to his discomfort rather than to his comfort, as the result would be wet and sloppy decks. *Secondly*, open water connections in'tween decks are a source of danger and have had to be abolished where tried already. Cases of damaged cargo with resulting claims have been due to water connections fitted there.

11. *Central Authority*.—I would agree with the principle if it could be administered on the same lines as are adopted by the Board of Trade in British Isles.

I do not think, however, that India has yet *arrived at that stage* where the appointment of a Principal Surveyor for India and Burma could be justified.

The volume of trade in British Isles, where there are hundreds of manufacturers associated with shipping and numerous Ports, from which daily questions of adjustment arise, makes a Central Authority essential.

I do think, however, that the object of the Committee could be attained by detailing the Senior Principal Surveyor on special duty to compile the Manuals, co-ordinate the Survey Service and make the working of the Act

uniform throughout India and Burma. In compiling the Manuals the Surveyor would not have the power to *alter or add to existing rules*, before he had submitted his proposals to the Government of India or Department concerned, who would in turn submit them to owners for *expert opinion and advice*, before putting them into force.

In the Majority Report attention is drawn to the want of co-ordination and other shortcomings in the survey of passenger vessels. Speaking for Bombay, the staff of Surveyors is "*hopelessly inadequate*" and it is a physical impossibility for the Surveyors to carry out their duties as they would like.

If an adequate staff was provided, the Principal Surveyor would be relieved of *daily survey* duties and free to attend to the administration. He could supervise the duties of his juniors and see that regulations were adhered to. His duties also include examining candidates for Certificates of Competency, which takes a considerable amount of his time.

I, therefore, think that if the Principal Surveyor had an adequate staff and was free to attend to administration the defects referred to in Principal Report would be eliminated.

I cannot give any opinion on this as regards other ports in India.

12. (k) *Provisions—Certificate B—Page 45.*—I do not agree that owners in the Bombay coasting trade should be compelled to carry a stock of provisions. The crew and passengers supply and carry their own food. The runs are daily and steamers are on same route, pass one another at stated times daily and, if this did not happen, the Master would be on the lookout to see if any mishap had occurred. They are hardly ever more than a few hours from some port, and the chances are very remote, in event of a breakdown, of the master *not being able to communicate with the shore*. The provisions put on board these vessels would be "dead stock" and waste of money, and I consider the Act as it stands sufficiently covers *this class of vessel* so far as "provisions" are concerned.

13. (l) *Passenger Inspectors.*—I consider this a good suggestion but do not agree to, and see no reason for, a *special additional man* being added to the ship's complement. I consider it would be sufficient if the Ticket Collector or Purser, who is moving amongst the passengers, be instructed by owners to receive complaints and advise passengers in difficulty. On the Bombay coast the Bombay Steam Navigation Company already have a travelling inspector on each section, and he could be instructed to see that ticket collectors did their duty in this respect. As these men are Indians, they can hear the passengers' complaints without any language difficulty. Any further additions to an *existing staff* competent to deal with this I do not consider necessary.

I would also point out that in small steamers a man of this "special appointment type" would require accommodation, which could not be provided as space is very limited.

14. (m) *Chapter VIII.*—Referring to paragraph (4) regarding cost of alterations and additions, I am afraid that they would be very material and not at all negligible and would have to be taken into account.

JAMES M. RITCHIE, M.I.E.S.

CALCUTTA:

27th April 1921.

STATEMENT "B."

Steamers.	Comple- ment.	No. of VOYAGES.		AVERAGE NUMBER OF PASSENGERS.		Maximum any voyage.	No. of times full complement carried.
		Outward.	Inward.	Outward voyage.	Inward voyage.		
<i>Goa Line.</i>							
Rajapuri	727	26	26	367	251	...	2
Satyavati	808	43	43	475	443	...	6
Rukmavati	694	29	29	322	272	...	1
Lilavati	815	41	41	405	418	...	2
Kalinadi	792	11	11	368	208	...	1
Padmavati	684	3	3	461	197	...	1
Juba	793	12	12	449	414	...	1
<i>Viziadurg Line.</i>							
Fairy Queen	684	14	14	378	515	...	2
Padmavati	684	22	22	391	498	...	6
Omnavati	684	27	27	470	519	...	12
Zuari	750	20	20	400	585	...	4
Shastri	732	29	29	456	586	...	8
Kalinadi	792	19	19	417	533	...	2
Rajapuri	727	14	14	381	560	...	5
Rukmavati	694	8	8	555	552	...	2
<i>Jaigad Line.</i>							
Zuari	750	38	38	618	457	...	17
Kalinadi	792	29	29	581	541	...	15
Fairy Queen	684	24	24	563	398	...	16
Shastri	732	23	23	592	475	...	12
Rajapuri	727	6	6	594	555	...	1
Padmavati	684	26	26	587	487	...	11
Omnavati	684	16	16	430	490	...	7
Rukmavati	694	9	9	524	514	...	1

Minute of dissent on certain recommendations made by the Deck Passenger Committee.

1. The Committee having practically finished its discussion on the Report, I beg to submit a memorandum of my opinion on certain points that have been investigated and discussed by the Committee. I can, I think, claim some knowledge of the question having been associated with the carriage of Indian Deck Passengers for close on forty years.

2. *Space allowances.*—This is an important matter, as increased space allowances will in all probability result in an immediate enhancement of fares, for with the increased working costs of a ship the owners can scarcely be expected to consent to a reduced earning power of their ships without some compensation in the shape of higher fares—and all along this has been a contingency I have hoped to avoid. Some 90 per cent. of the Indians who travel by sea are of the working class, their cost of living has increased of late years, and it seems to my mind a pity that they should be called upon to pay higher fares for a degree of comfort that they will fail to appreciate themselves. In my opinion “passenger amenities” as apart from “space allowances” are the factors that will make for the increased comfort of passengers. These amenities can probably be provided by owners without finding cause for higher fares, and considering that the duration of the passages in Indian waters seldom or scarcely ever will exceed 96 to 106 hours, it seems to me unnecessary to labour the point of increased “space,” when there are other directions where the degree of comfort and conveniences can be raised.

On the Bombay-Goa line, for instance, where the large majority of the passengers travel, the voyage from point to point is less than 24 hours, and between the terminal points there are a number of intermediate ports at which the steamers call to disembark or embark passengers. In some instances the passengers are on board less than ten hours; for some periods of the voyage the ships carry less than half their licensed complements: when they are “full up” they are less than 24 hours in their “full” condition—in many cases a great deal less than 24 hours. The bulk of the passengers are mill-workers—poor people—who have other calls on their purses, apart from paying enhanced fares.

So far as ocean steamers are concerned, *i.e.*, steamers working in the Bay of Bengal, the actual space allowance enjoyed is in excess of that provided by law, for these steamers very seldom carry up to their full licensed numbers, and there are deck areas which, although not included in Surveyor’s measurements, are nonetheless freely used by passengers, thus relieving the congestion, if any, in the spaces set apart for passengers’ accommodation. These unmeasured spaces are hatchways (often of large area), surroundings of the masts, winches, hawser—reels, cross passages, etc., etc. In practice therefore (should the Committee’s recommendations be accepted) an increased space allowance will not benefit the passengers to any appreciable degree, and he stands to pay more for a space allowance which he already enjoys.

After hearing the evidence adduced before the Committee and observing the conditions under which deck passengers travel, I am confirmed in an opinion I have held for some time, that the demand for an increased space allowance comes but in a small degree from the working classes. The adverse comments come chiefly from better class Indian passengers, who are in a small minority and who could well afford to travel second or even first class, but who prefer for reasons of their own to travel deck. These carry with them quite a quantity of goods for trading purposes, also excessive quantities of personal belongings, and their object in agitating for more space or expounding their views through the media of educated and influential Indians is, that with a lesser number of “working class” passengers carried, their own comfort will be vastly improved. Although they would clamour importunately against an increased fare, they would nevertheless be ready to pay it, and the injustice lies in the fact that the poor man (who above all things appreciates a cheap fare) will be penalised for a class of deck passenger who can afford not to travel as a deck passenger at all. It would be catering for the classes at the expense of the masses, who represent 90 per cent., if not more, of the people who

travel. I noticed between Karachi and Bombay some of these men who were occupying with their goods 6 times their legitimate space, and the other passengers seem to concede to them this privilege, being impressed no doubt with the fact that a better class passenger must not be too closely approached.

3. Although my personal opinion based on a lengthy experience of the passenger traffic is that an increased space allowance is not very urgently called for, still I would be prepared to recommend a small increase—an increase which I venture to hope would not result in any increase of fares, unless a continued rise of working costs makes such an increase imperative.

The space allowances I would recommend are as follows:—

Class 1.—Excursion (or festival) specified runs—24 hours between terminal points, Fair season only—7½' flat rate.

Class 2.—Non-excursion (or festival) specified runs—say between Karachi—Mangalore, Calcutta—Chandbally, Chittagong—Akyab, Colombo—Tuticorin: 7.5 sq. ft. plus 4' airing space.

Class 3.—Short voyages—non-specified runs not exceeding 72 hours between ports, Fair season. 8 sq. ft. plus 4' airing space.

Class 4.—Same as above, Foul season, 9 sq. ft. plus 4' airing space.

Class 5.—Short voyage—non-specified, not exceeding 120 hours, Fair season, 9 sq. ft. plus 4' airing space.

Class 6.—Same as above, only during Foul season: 10 sq. ft. plus 4' airing space.

Class 7.—Long voyage, same as at present.

4. As regards the term "Long" and "Short" voyages, there does not appear to me any great necessity for introducing any change seeing that with the added speed of steamers few voyages exceed 120 hours—but as the witnesses examined were generally, if not wholly, of opinion that the period of the long voyage should be reduced, I have, as shown above, expressed the opinion that the short voyage could be divided into two classes, *viz.*, one up to 72 hours and the other from 72 to 120 hours. It appeared to me that the suggestion to reduce the time period of the Long voyage was made not so much because a Long voyage passenger should claim more space than a Short voyage one, as because of a desire to give the Short voyage passenger the benefit of the Long voyage allowances as they already exist.

5. *Protected spaces.*—If an overhead light sun deck (wood) is provided, I think that solid bulwarks need not be insisted upon. Good canvas rail screens, securely laced top and bottom and canvas curtains from deck above to rail below, should afford sufficient protection from ordinary monsoon weather. In really bad weather the solid bulwarks would afford no added protection and, in such circumstances, the deck passengers would require to be transferred to a part of the vessel not affected by "seas" coming aboard in a dangerous volume.

6. *Water taps or barrels in Between decks.*—These in my opinion are in excess of reasonable requirements, and tend to make the Between decks wet and sloppy, and make for the discomfort of such passengers as occupy these spaces. It is not asking too much to require a passenger to ascend to the deck above where water taps are located. The staircases leading to and from Between decks are commodious and can easily and readily be made use of by passengers.

7. *Fair and Foul seasons.*—I think these are clearly and geographically well defined and are in keeping with the actual weather conditions experienced in Indian Seas at the different seasons of the year. With the present type of passenger steamer, fast and well protected as far as possible from conditions making for discomfort, the matter of differentiating as between fair and foul seasons as regards space allowances does not call for the same distinction as was the case when the Act was framed. In the modern ships with a reserve of speed, in Indian Seas, where voyages are short, the voyage period is but slightly affected in whatever season the voyage is made.

8. *Special staff of sweepers.*—I do not agree with the Committee's recommendations that these are necessary. Three and some times four are

carried, borne on the ship's articles. If this number were increased to 10 or 12, it would be necessary to add to the crew spaces, and this cannot be effected without not only expensive but inconvenient structural alterations. Moreover, I am not convinced that this added staff would ameliorate the conditions under which passengers travel.

9. *Anchorage buoys at passenger ports.*—I do not think that any useful purpose would be served by insisting on these. The anchoring of a ship is arrived at by bearings and soundings and must be left to the Commander, who alone is responsible that he takes up a safe anchorage.

10. *Administration of the Act. Central Inspecting Authority.*—As I can form no opinion how this "Authority" could be applied, I do not recommend it. The Act is administered by the Port Officer, generally a high R.I.M. Official, who is responsible to his Government for the proper working of the Act. This official has qualified Surveyors subordinate to him, and I do not understand how a higher authority could intervene, or what his qualification would have to be. It might perhaps be possible to create an appointment of "Principal Surveyor" for the whole of India, to whom cases involving doubt might be referred. I am, however, very doubtful as to the usefulness of such an appointment.

P. DE. STE. CROIX.

CALCUTTA :
27th April 1921.

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Note by Mr. Kamat and Dr. Batra (See paragraph 20.)

We have carefully considered the arguments of our colleagues, Captain Ste. Croix and Mr. Ritchie, whose experience owing to their long connection with the British India Steam Navigation and the Bombay Steam Navigation Companies respectively has been of great benefit to us. We cannot, however, accept the degree of increase in the space allowance they propose. In fact in allowing a special concession rate of 9', as against the datum line of 9·2', for the rush periods of the Bombay Traffic, we think we have made sufficient allowance for the special features of the Bombay trade, *viz.*, the holiday rush, and the short interportal distances of the Bombay Coast; we have also paid every regard to the large traffic to be carried, *viz.*, about 1,100,000 of passengers per annum in 24 vessels at present. But we cannot reduce the space minimum below a point of 10' for the normal periods for journeys of 24 to 72 hours duration, as we believe it is a physical impossibility to lie down (with some luggage) in less than 10' for such length of time.

As regards spaces under ladders, on hatches, and other odd spaces, we think they are not fit for human occupation for long voyages. Our terms of reference particularly ask us to suggest remedies for preventing overcrowding "in modern conditions." We also believe the law has to provide a space allowance for passengers which they can claim as their own by right on occasions when the ships carry their maximum, not when the ships are half empty, neither as matter of grace out of any spare odd spaces.

We have also carefully considered the resulting decrease in the earning capacity of Shipping Companies if 10', as we propose, is accepted as the minimum for the Bombay Coast. On the Festival voyages, the reduction will be 27 per cent. In the normal or non-festival period it would be 34 per cent. Taken together, it will not exceed 33½ per cent. Now we must be prepared for some increase in the fares under any scheme of increased allowance of space. But considering the fact that the dividends of the Bombay Steam Navigation Company have been during the last two years 17 per cent., despite the rise in coal and wages, we believe the enhancement in fares need not be excessive. Our terms of reference lay down that our proposals should not result in making the fares "prohibitive." Considering the fact that Railway Companies, or even other Steamship Companies, (*e.g.*, the India General Steam Navigation Company which has a capital of £491,000, Agents, Messrs. Kilburn & Co., Bengal), earn not more than 10 per cent. dividend, we believe a "prohibitive" increase on the part of the Bombay Steam Navigation Company, as a result merely of our proposals would be unjustifiable. Our 10' standard secures to each passenger 50 per cent. more space than he gets at present (6'6'), and the reduction in the carrying capacity does not exceed 33½ per cent on the whole. We cannot see our way to go below this standard for travelling under modern conditions as any such reduction as 17 per cent. or 18 per cent., in the present overcrowding as proposed by our colleagues of the Chambers of Commerce, will not in our opinion eradicate a grievance of over 30 years standing.

B. S. KAMAT.

G. L. BATRA, M. B. CH. (EDIN).,
D. P. H.

Dy. Sanitary Commissioner,
Bengal.

CALCUTTA :
27th April 1921. }

APPENDIX A.

Recommendations of the Native Passenger Ships Commission, 1890:

(1) That Government be advised to consult the Meteorological Department with a view to framing a revised schedule of fair and foul seasons.

(2) That voyages be divided into :—

(a) *Excursion voyages*, limited to the hours of daylight and to the fair season only. On these voyages passengers are not to be embarked before daylight or kept on board after dark.

(b) *Shelter port voyages* to be limited to 12 hours between two ports of shelter. A schedule of shelter ports to be prepared by Government. Vessels engaged on shelter port voyages should hold valid Board of Trade Certificates or certificates of equal value granted by a British, Indian or Colonial Government as Home Trade passenger ships, or certificates of a higher grade. For sea-going vessels holding certificates as Foreign Trade passenger ships, as described in the next paragraph, shelter-port voyages may be extended to 16 hours between two ports of shelter.

(c) *Short voyages* to be limited to 120 hours on a direct voyage from one port to another, and on passages when the same passengers are on Board for not over 240 hours calling at intermediate ports. A voyage from India to the port of Aden, whether going direct or calling at intermediate port or ports, should be deemed a long voyage. Vessels engaged in long and short voyages to be sea-going ships holding valid Board of Trade Certificates or certificates of equal value granted by a British, Indian or Colonial Government as Foreign Trade passenger ships.

(d) *A long voyage* to mean a direct voyage from one port to another extending over 120 hours, or to voyages where the same passengers are more than 240 hours on board calling at intermediate ports.

(3) Ventilation to be the same as that provided in the Emigration service, not less than 10 inches per passenger, exclusive of hatches. The foul air of each deck to be carried up in separate shafts above the uppermost deck. If passengers are carried on two decks below the tonnage deck, the lowermost deck to be ventilated by artificial ventilation, such as Blackman's ventilator, or a thermantidote of approved design.

(4) We recommend that, wherever possible, arrangements be made by which passengers should be embarked and disembarked alongside of piers.

(5) Alley-ways or fore and aft passages on the main or tonnage deck, which are less than 8 ft. in width, are not suitable places for passengers, and should not therefore be measured. Alley-ways which are not less than 8 feet in width and free from obstruction, can be measured provided a 4-foot gangway is kept clear, and divided off when occupied by passengers by a fore and aft 3-inch cant-piece.

(6) That hatches are desirable places for passengers, and should be measured, except in so far as they form gang-ways between passenger-carrying decks, provided :—

(a) that suitable protection is provided to prevent passengers falling into the hold ;

(b) that the hatches, while required by measurement for the accommodation of passengers, shall not be opened at an intermediate port, or till the end of the voyage ;

(c) that the hatches are sufficiently strong to carry passengers.

(7) That the topgallant forecastle, or what represents it in a flushdeck vessel, shall not be measured until airing space at the rate of 3 square feet for each member of the crew has been deducted and marked off at the after end thereof by an athwart-ship cant-piece. That in no case shall the deck forward of the capstan or windlass be measured for passengers, but the space shall, where clear, be measured for the crew.

(8) That double awnings, weather cloths and curtains shall not be considered permanent shelter in foul weather, but shall be provided in all seasons for all exposed decks for the convenience of native passengers. And such decks, or portions thereof, shall, in foul weather, be reserved for the use of the passengers under permanent shelter in proportion to the numbers carried.

Example.—Supposing a vessel has permanent shelter for 1,200 passengers, and there are only 600 on board, then half the uppermost or unprotected deck area (excluding the 1st and 2nd class and crew airing spaces) is to be kept clear for the use of the passengers under permanent shelter in the foul season.

(9) No 'tween deck or permanently covered-in deck, which is less than 6 feet in height to the deck, to be measured for passengers.

(10) The 'tween deck shall be lighted by day by sufficiently large side-ports or scuttles at suitable intervals, and not, as a rule, more than 15 feet apart. Orlop decks not provided with scuttles should be lighted by artificial means at all hours. All decks shall be lighted at night by not less than two electric or police lamps for each compartment.

(11) Space for each passenger on any deck in the fair season :—

(a) for excursion voyages, 6 square feet ;

(b) for shelter port voyages, 7 feet ;

(c) for short voyages, 9 feet ;

(d) for long voyages, we make no change in the rules in force at the present time.

(12) The 5-foot rule now in force between the Coromandel Ports of the Madras Presidency and Burma to be cancelled.

(13) For shelter-port voyages in the foul season and for short voyages in the foul season there should be permanent shelter at the rate of 7 square feet for every passenger carried. A deck having solid bulworks and a permanent wooden or iron deck over it to be considered permanent shelter. In the foul season if passengers are carried on more than one permanently-covered deck, below the tonnage deck, the space required on such extra decks shall be 14 superficial feet for each passenger.

(14) The lower hold must not be considered proper accommodation for passengers ; neither are spaces which consist of temporary accommodation on cargo, to be considered suitable accommodation.

(15) It is recommended that, whenever practicable, a running fore and aft gang-way, raised sufficiently from the main deck connecting the poop with the bridge and the latter with the topgallant forecastle, be fitted fore and aft to permit of free passage by the officers and crew of the ship.

(16) Waterways, provided they are covered with a plank or wooden grating, and the fall home of the ship's side does not interfere with the cubic space of the deck should be measured for passengers. In cases where the fall home is considerable, the cross measurement should be taken where a plumb dropped at half the height of side between the decks, falls on the waterway or deck.

(17) The bridge deck, in the fair season, excluding such portion as is required for purposes of navigation, can be measured as deck area for passengers, if the boats, when not carried at the davits, are stowed on chocks raised at least two-and-a-half feet from the deck by standards.

(18) Separate female accommodation, though desired by Mahomedans from motives effecting their dignity as men, is not necessary, nor would it be used by the Hindus, who form the bulk of the passengers, and who prefer to keep their women with them.

The spaces for Hindus and Mahomedans should be separate and distinct. Some simple temporary contrivance, such as a rope or bamboo rail, would be sufficient to define the area for each.

(19) Midship rails and stanchions should be fitted in the 'tween or orlop decks, which would also be useful for hanging clothes and securing personal luggage, and additional thwart ship life lines should be rigged if necessary.

(20) Heavy baggage, including boxes and articles likely to injure passengers during the rolling of the ship in heavy weather, should be stowed in the hold or placed in railed-off space on each deck in the case of shelter port voyages at the commencement of the voyage.

Excess baggage that has been paid for shall not be allowed to be carried in the space allotted to passengers.

(21) *Closest Accommodation.*—The evidence is almost unanimous as to the insufficiency of the present scale, and the advantage to be derived if there were urinals in addition. The following scale is therefore proposed:—

Three privies for the first 100 passengers or part of 100, and 3 privies for every additional 200, and 2 urinals for the whole number. The latrines should be provided with the means for continuously flushing them during the whole time the passengers are on board. The bathing screens for women to be erected at the beginning of the voyage.

(22) *Medical Officer.*—A medical officer should be required on steamers carrying over 400 native deck-passengers between the Coromandel Coast and Rangoon and between Calcutta and Rangoon direct, and *vice versa*. He should be a Hindu, if possible, and well acquainted with the language of the people forming the bulk of passengers to be carried. In addition to his own proper medical duties, he should act as the representative of the passengers to the Captain of the ship in all representations or complaints made by them.

(23) Cargo, if carried in the same compartment with the passengers, should be effectively secured, so as not to prove a source of injury or annoyance to the passengers.

(a) When cattle are carried *on the open deck* and are not under cover, the space occupied by them must be effectually shut off from the passenger space by bulkheads, wooden partitions or otherwise. The partitions need not be close; but efficient washboards must be fitted to prevent the dung or urine of the cattle from getting to the passenger space.

(b) If cattle are carried *under cover* on the same level deck as passengers, they are to be separated from the passenger space by a moveable close bulkhead running athwart-ship, across the deck and extending from the deck to the covering above or must be otherwise efficiently separated.

(c) If cattle are carried either in the *'tween deck or holds*, then the passenger space must be effectually shut off from the cattle space and separately ventilated, so that no effluvia from the cattle space can escape into the passenger space.

(24) Hay and straw, when in loose bundles, to be stowed on deck, and to be properly covered over. Compressed bales may be stowed below.

(25) The Board of Trade Rules, which provide the means of saving the life of every person on board, should be adopted.

We recognise that the new rules under the Merchant Shipping Life-saving Appliances Act, would class the Indian short voyage as a foreign-going voyage; but in our opinion, having regard to all the circumstances of the traffic, it should be ruled that the Indian short voyages and the proposed excursion and shelter-port voyages should come under the scale applicable to English Home Trade voyages. But for long voyages the English foreign-going scale should apply. It is represented by our colleagues, who are interested in the native passenger traffic, that as the Board of Trade Rules are at present the subject

of much discussion and criticism, these rules should not be enforced in India until they have been practically worked in England for two or three years.

(26) *Hospital Accommodation*.—In vessels carrying a medical officer under paragraph 22 there should be a permanent hospital fitted in a deck-house or suitable cabin or cabins. Bunks 6'×2' should be provided at the rate of 1 per cent. of the total number of passengers to be carried, but the total number of bunks need in no case exceed six. A portion of these should be reserved and screened off for the use of women.

Cases of small-pox, cholera, yellow fever, and plague, should not be treated in this permanent hospital, but in a separate tent, the materials of which should be carried.

In the measurement of deck area for the purpose of determining the number of passengers to be carried, the space for the temporary hospital should be included.

A suitable medicine chest and a sufficient supply of medicines and necessaries should be provided.

(27) Definite instructions should be given to surveyors at all ports in India, so as to secure uniformity in surveys and measurements for passengers. A list should be framed of all obstructions to be deducted from the latter. The Captain of the vessel should be furnished by the officer granting the native passenger certificate with a statement showing the measurements, deductions and calculations made for each space separately and also a plan of the same, and to and from what fixed point the measurements were made, and this might be attached to the certificate, and therefore made available for officers working the Act. The capacity of each space should be plainly and permanently marked in some prominent place in that space in English.

(28) The saloons and cabins set apart for 1st and 2nd class passengers are reserved for them and for the officers of the ship, and although in a cyclone a Captain, from motives of humanity or to prevent passengers on the upper deck being washed overboard, might allow them to temporarily occupy the saloons. In ordinary bad weather, when shelter for upper-deck passengers is necessary, they would *not* be allowed to do so; therefore 1st or 2nd class saloons and cabins should not be measured as space or shelter for 3rd class passengers, even if no 1st and 2nd class passengers are carried.

The airing space for 1st class passengers shall be clearly specified in the certificate. This airing space for 1st class passengers shall be measured for 3rd class passengers, but shall only be availed of for 3rd class passengers when no 1st class passenger is on board. The same applies in every respect to 2nd class passengers and their airing space.

(29) There should be more facilities for the distribution of fresh water to the passengers and some arrangement made for distributing water by a Hindu for caste-passengers.

(30) In allotting space for passengers, two children under 12 should count as one adult.

(31) Each compartment of the 'tween deck in which there are more than 300 passengers, should have two ladders each two and a half feet wide and provided with hand-rails for up-and-down traffic.

(32) On the back of the ticket issued to passengers should be printed in the Vernacular the conditions and bye-laws which the passengers are not likely to know.

(a) Food can be purchased on application to the ship's officers, or from the shop-keeper on board.

(b) Firewood is supplied gratis.

(c) Boxes and heavy luggage must be properly secured before coming on board for storage in the hold.

(33) *Fastening of life-buoys*.—Life-buoys with lines attached shall be secured by toggle and becket, or by any other similar method allowing of their ready release. They shall not be lashed or seized to the vessel.

(34) The inspecting officer appointed under section 7 of the Act at an intermediate port should, whenever it is practicable, be required to board passenger vessels calling at the port to ascertain the number of passengers carried, and to inspect and note the general sanitary condition of the vessel, especially the state of the latrines and decks.

(35) The Port Authorities should provide at all ports suitable shelter for passengers waiting to embark. With regard to infectious cases landed for passenger vessels, we recommend temporary hut shelter formed of materials available on the spot, and which can be destroyed after use.

(36) We recommend that gunpowder should only be carried in passenger vessels fitted with properly constructed and approved magazines, which are air-tight and capable of being flooded with water. But gunpowder and other explosive should not be carried in vessels unless arrangements can be made for shipping and discharging it while the ship is clear of passengers.

(37) We recommend that, in the interest of passengers embarking and disembarking, there should be a penalty attached to weighing the anchor or moving the engine of a vessel while passengers are in the act of embarking or disembarking at any port; and further, that there should be a port rule prohibiting boats with passengers going alongside a vessel approaching an anchorage until such vessel has anchored and a flag has been displayed at the masthead of such vessel as a signal that boats can approach.

(38) We recommend that section 20 of the Native Passenger Ships Act, X of 1887, should be so altered as to cause the death of every passenger dying on board to be reported to the Port Authority at the first port called at after the death has occurred, whether the vessel is on a long or a short voyage; but enquiry, if any, shall be made at the terminal port.

(39) The Commander of a vessel under the Native Passenger Ships Act calling at intermediate ports, should be required to inform the inspecting officer appointed under section 7 of the Act of the number of cattle, sheep, horses, or other live animals which may be occupying passenger space. For calculating the accommodation required for animals, a horse shall be taken as equivalent to three passengers, a bullock to two-and-a-half passengers, a pony to two passengers, a pig to two passengers, and two sheep to one passenger.

(40) We recommend that the supplementary Certificate B should be done away with in the case of excursion voyages, shelter-port voyages, and short voyages, provided:—

- (a) that the native passenger certificate (now called Certificate A.) shall show the full number of passengers which the vessel is capable of carrying during each season and on each description of voyage when fully equipped in accordance with the Act and Rules. If at the time of survey all the prescribed equipments are not on board, the deficiency shall be noted in the certificate, and the passengers corresponding to such deficiency shall not be carried until the deficiency has been made good and the certificate endorsed to that effect by an officer appointed under the Act;
- (b) that the certificate shall show the number of passengers which each division of a deck is capable of carrying in each season and on each description of voyage, sketches showing each division and number of passengers for which each is measured being given on the face of the certificate;
- (c) that the Master is made responsible under a penalty for carrying food, fuel, water, and medical stores according to the scale laid down in the rules and for having awnings over all decks at sea whenever the weather permits;
- (d) that a list of prohibited cargo, *e.g.*, petroleum, explosive, etc., is added to the rules;
- (e) that on arrival at each port the Master shall furnish the officer appointed under the Act with a statement in a prescribed form of the number of native passengers—men, women, and children—

carried from the last port, the number to be landed, and the number for whom space is available to the next port; and

(f) that no native passengers shall be carried from any port until the Master has furnished the officer appointed under the Act with a statement of the number for whom space is available to the next port.

(41) We consider that that portion of clause (c) of section 11 of the Native Passenger Ships Act, which refers to food, fuel, and water, should be certified to by the Master of the vessel, and that the inspecting officer should not be required to see personally to these matters.

(42) The majority of the Commission recommend that in order to ensure one of the principal objects arrived at in the appointment of this Commission, *viz.*, uniformity in working the Act that at Bombay and at all out-ports of that presidency the working of the Native Passenger Ships Act should be under the Port Authorities, as in the Madras and Bengal Presidencies and in Burma; and further, that the principal Port Officer of each Presidency and Administration should be appointed the intermediate authority referred to in clause (3) of Section 15 of the Native Passenger Ships Act, X of 1887.

(43) Ship-owners should be recommended to employ a high caste Brahmin, who should be placed in charge of the distribution of fresh water to Hindu passengers. He should also, under the orders of the medical officer, cook food for those unable to cook for themselves.

(44) We recommend ship-owners carrying native passengers to have a shop for food on board each ship. The shop to be kept by a Hindu of good caste, who will prepare and sell sweet-meats and preparations of grain ordinarily used by natives when travelling. We find that such a shop has been provided for the last ten years in the British India Company's steamers trading between Bombay and Karachi. The Commission found such a shop on board the S.S. "*Karagolu*", and learnt from the native passengers on board that it had been a great boon to Hindus as well as Mahomedans.

(45) Cooking places and cabooses shall be provided on the scale now laid down under the rules, but one or two of these should be reserved exclusively for Hindus, and should be separate from the others.

APPENDIX B.

DECK PASSENGER COMMITTEE, 1921

QUESTIONNAIRE.

Questions.	Answers.
1. Name and residence of witness.	
2. Occupation of witness.	
3. Please state the particular experience, if any, you possess of the working of the Native Passenger Ships Act, 1887.	
With what runs are you specially acquainted? Have you ever travelled on a ship running under the Act? If so, how many times and on what runs?	
4. Do you take any part in the administration of the Native Passenger Ships Act, 1887?	
5. (<i>Shipwright Surveyors</i>). Are you charged with the duty of measuring space and seeing that equipment required by the Act is provided?	
6. The Board of Trade classification of sea-going (other than emigrant) vessels for the purpose of fixing the number of the passengers a ship may carry is as follows:—	
Classification.	Accommodation prescribed.
<i>Foreign going steamers, i.e., plying beyond the Home Trade limits.</i>	72 c.ft. per passenger between decks: e.g., if deck 6' high, 12 sq. feet per passenger (Board of Trade Instructions, paragraph 14). Exposed decks not allowed to be measured for passengers.
<i>Home trade steamers</i>	(a) if in a compartment, 72 c.ft. per passenger, e.g., if deck height 6', 12 sq. feet per passenger (paragraph 20). (b) if on open deck, 9 sq. feet per passenger (paragraph 23). Main deck and the deck beneath to be measured for passengers, also parts of promenade deck, &c. (paragraph 31). Total number of passengers not to exceed gross tonnage (paragraph 25) and also not to exceed (paragraph 24) six times the number for whom there is permanent shelter.
<i>Excursion steamers.</i> —Daylight only and in fine weather, and in fair season only.	9 sq. feet per passenger. (Paragraph 32.) Same decks as above may be measured. No limitation of number of passengers to gross tonnage.
<i>Steamers plying in partially smooth waters.</i>	6 sq. feet per passenger—Upper deck. 9 " " " " top of saloon. 9 " " " " In saloon beneath upper deck (paragraph 33).
<i>Steamers plying in smooth waters.</i>	(a) 3 sq. feet—Upper deck. (b) 9 " " top of saloon. (c) 9 " " In saloon beneath upper deck (paragraph 34).

Do you consider the above a better classification, and the prescribed spaces more appropriate than the Indian Classification and space allowances (which are given in the next three questions)?

Questions.	Answers.
<p>The classification of voyages and the space allowances required in steam ships running under the Native Passenger Ships Act, 1887, is as below :—</p>	
<p>(A) <i>Fair season : Short voyage.</i></p>	
<p>Each between deck passenger 8 sq. feet <i>plus</i> 4 sq. feet airing space = 10 sq. feet.</p>	
<p>[<i>N. B.</i>—A 'tween deck may be described as a lower deck with only artificial lighting and ventilated by means of ventilators from above].</p>	
<p>Each Upper deck passenger 6 sq. feet.</p>	
<p>This works out as in the following example :—</p>	
<p>Between deck ; clean space ; 1,000 sq. feet.</p>	
<p>Upper deck space 700 sq. feet.</p>	
<p>Passengers allowed according to the between deck space $\frac{1000}{8} = 166$.</p>	
<p>From Upper deck space take 4 sq. feet for each between deck passenger $4 \times 166 = 664$ sq. feet.</p>	
<p>Balance space available on upper deck $700 - 664 = 36$ sq. feet.</p>	
<p>Number of additional passengers allowed according to the upper deck space $\frac{36}{6} = 6$.</p>	
<p>Total passengers allowed $166 \text{ plus } 6 = 172$.</p>	
<p>Average space for each $\frac{1700}{172}$ sq. feet = 9.8 sq. feet.</p>	
<p>(In other words, between deck passengers may have to do with less than 10 sq. feet, and the shortage will be <i>greater</i> according as there is more surplus space left available on the upper deck after excluding 4' upper deck space for each 'tween deck passenger).</p>	
<p><i>Expert witnesses</i>). Do you accept the foregoing as the correct method of measuring the average deck space per passenger for such voyages? If not, what method do you consider the correct one?</p>	
<p>B) <i>All Seasons : Long voyage.</i></p>	
<p>9 sq. feet in between deck for every passenger; and 6 sq. feet in upper deck for every passenger.</p>	
<p>Total 15 sq. feet</p>	
<p><i>Example.</i></p>	
<p>Between deck ; clean space ; 1,000 sq. feet.</p>	
<p>Number of passengers allowed :—</p>	
<p>$\frac{1000}{9} = 111$ passengers.</p>	
<p>[<i>N. B.</i>—In a ship with 1,000 sq. feet clean space between decks and 700 sq. feet on upper deck, average space per passenger would be 15 sq. feet.]</p>	
<p><i>Expert witnesses</i>). Do you accept the foregoing as the correct method of measuring the average deck space per passenger for long voyages? If not, what method do you consider the correct one?</p>	
<p>9. (c) <i>Foul season : Short voyage.</i></p>	
<p>9 sq. feet in 'tween deck } 4 sq. feet in upper deck } for every 'tween deck passenger.</p>	
<p>9 sq. feet in upper deck : for every upper deck passenger.</p>	

Example—

Between deck : clean space : 1,000 s. ft.

Upper „ : „ „ : 700 s. ft.

Passengers allowed according to the between deck space $\frac{1000}{9} = 111$.

From upper deck space take 4 sq. ft. for each between deck passenger, namely, $4 \times 111 = 444$ sq. ft.

Balance space available on upper deck— $700 - 444 = 256$ sq. ft.

Number of additional passengers allowed according to the upper deck space $\frac{256}{9} = 28$.

Total passengers allowed 111 *plus* 28 = 139.

Average space for each 1,000 *plus* 700 = $1,700 \div 139 = 12$ sq. ft.

(*Expert witnesses*). Do you accept the foregoing as the correct method of measuring the average deck space per passenger for such a voyage? If not, what method do you consider the correct one?

10. Can you suggest a better classification of voyages under the Native Passenger Ships Act than the present one—(See Questions 7, 8 and 9 above.)

It was suggested by the Native Passenger Ships Commission in 1890 that a better division would be the following:—

- (i) Excursion voyage. Fair season only, day light hours, appropriate space 6 sq. ft.
- (ii) Shelter port voyages. (Twelve hours port to port, if carrying Home Trade certificate; sixteen hours if carrying Foreign Trade certificate.)

Space recommended:—

- (a) Fair season. 7 sq. ft. on any deck (whether permanently sheltered or not).
- (b) Foul season. 7 sq. ft. permanent shelter. Exposed decks to be reserved for passengers having permanent shelter.
- (iii) Short voyage. (Up to 120 hours direct or 240 hours between terminal points. Ship to carry Foreign Trade certificate.)
Appropriate space:—
 - (a) Fair season. 9 sq. ft. on any deck (whether permanently sheltered or not).
 - (b) Foul season. 7 sq. ft. [Permanent shelter and subject as in (ii) (b).]
- (iv) Long voyage. (Over 120 hours direct or over 240 hours between terminal points.) Ship to carry Foreign Trade certificate. Space as at present, *viz.*:—9 sq. ft. in between deck for *every* passenger *plus* 6 sq. ft. in upper deck for *every* passenger.

Do you consider this classification of voyages and these space allowances better than the existing voyage classification and allowances?

- 10 A. Which of the three classifications:—

(Board of Trade—Question 6; Commission of 1890—Question 10; Existing—Questions 7, 8 and 9) do you consider most suitable for Indian conditions and why?

Questions.

Answers.

The present short voyage, foul season, space allowance is $\frac{9 \text{ plus } 4 \text{ sq. ft. ('tween deck passengers)}}{9 \text{ sq. ft. (upper deck passenger)}}$.

If the space allowance for short voyages in the fair season is increased from $\frac{6 \text{ sq. feet plus } 4 \text{ sq. feet}}{6 \text{ sq. feet (upper deck ('tween deck passengers))}}$ to 9 sq. feet, do you consider that any special rule for the foul season is wanted?, e.g., 7 sq. feet permanent shelter and the run of any exposed deck as proposed by the 1890 Commission?

(*Expert witnesses*). Do you consider that the existing rules regarding survey are difficult to apply with uniformity? If so, in what does the difficulty lie? Do you recommend the adoption of the Board of Trade Instructions as to the Survey of Passenger Accommodation? If not, please state the modifications which you consider necessary to make them suitable for the different trades and types of vessel under your supervision.

Do you think that passengers on a voyage lasting 10 or 12 hours should get the same amount of space as for a voyage lasting 120 hours?

(*Expert witnesses*). Would it much complicate matters or add much to the difficulty of survey if the surveyor had to calculate six figures, viz., Excursion, Shelter port, Long voyage, Short voyage (Fair season); Shelter port, Short voyage (Foul season); instead of as at present when he has to calculate only three figures—Fair season, Short; Foul season, Short; Fair and Foul season, Long?

Have you any experience of the conditions applying to 3rd class passengers travelling into or from Great Britain? If so, do you consider that an Indian deck passenger requires as much space allowance as a European passenger?

The Transport Regulations are understood to allow the following spaces for voyages in Indian waters:—

- (a) Indian troops . . . 6 sq. ft. each.
- (b) European troops . . . 9 sq. ft. each.

Do you consider that an Indian deck passenger not being a soldier requires more accommodation at sea than an Indian soldier?

Questions.	Answers.
<p>17. Do you think that there should be permanent shelter at all times for every passenger carried on an exposed deck?</p>	
<p>18. Have you any experience of emigrant ships travelling from or to India? The space allowance required for each emigrant is 12 superficial feet either within a cabin or in the between decks. How do you think these conditions compare with those of ships coming under the Native Passenger Ships Act, 1887?</p>	
<p>19. Have you any experience of ships fitted with sleeping platforms? If so, please state your opinion regarding their advantages or disadvantages.</p>	
<p>20. (<i>Expert witnesses</i>). Do you consider that if sleeping platforms were fixed on decks of native passenger ships that at present have no platforms this would add to the comfort of the passengers? Would the construction of such platforms liberate a considerable amount of space on the deck itself? Would such platforms be in your opinion popular?</p>	
<p>21. (<i>Expert witnesses</i>). Can you give an estimate of the cost of fitting with sleeping platforms steamers which at present have no platforms? About how much do you think the cost of constructing sleeping platforms would add to, the cost of the deck passenger ticket?</p>	
<p>22. Do you recommend that the carriage of passengers under what is known as the "Five-Foot" rule should continue? If so, on what runs?</p>	
<p>23. Do you consider the existing scale of latrine accommodation, viz., two latrines for the first 100 passengers, one for each succeeding 100 or part of hundred adequate? If not, what scale do you recommend?</p>	
<p>Do the steamers with which you are acquainted provide more than the bare number prescribed at present?</p>	
<p>Do you know how many latrines are provided on emigrant ships?</p>	

Questions.	Answers.
<p>24. Do you think that the provision of separate latrine and bathing accommodation for females is sufficiently secured at present ?</p>	
<p>25. Is better access to the latrine wanted ? Do you consider the location of the latrines for males and females, as at present, suitable or unsuitable ?</p>	
<p>26. So far as the Native Passenger Ships Act, 1887, is concerned, the existing rule is believed to be that a Medical Officer must be carried only in the case of ships travelling to or from the Red Sea and then only if the ship carries more than 100 passengers. Do you consider that Native Passenger Ships should be required to carry a Medical Officer for voyages other than to or from the Red Sea ? If so, on what runs and subject to what conditions ? What qualifications do you recommend for the Medical Officer and would you vary them according to the number of passengers carried ? Do any of the steamers with which you are acquainted provide Medical Officers, although not required legally to do so ?</p>	
<p>27. A Native Passenger Ship must have a permanent hospital and material for a temporary hospital if travelling to the Red Sea, or if proceeding on a long voyage elsewhere and also carrying more than 100 passengers. If proceeding on a short voyage, and also carrying more than 100 passengers she must have material for a temporary hospital. Do you consider that this rule requires modification ? What scale of bunks in the permanent hospital would you recommend ? The existing maximum is 6 bunks.</p>	
<p>28. (<i>Expert witnesses</i>). What is the existing scale of ventilation in the ships with which you are acquainted ? Do you consider that it needs increasing ?</p>	
<p>In ships going to the Red Sea independent ventilation for the hold and between decks is provided for. Do you think that there should be the same rule for passenger ships going elsewhere ?</p>	
<p>29. Supposing the ship has three decks, <i>vis.</i>, Orlop (lower between), between, and main, do you think that the Orlop deck should be ventilated artificially ?</p>	

Questions.	Answers.
<p>80. Do you think the existing scale of water supply, <i>viz.</i>, one Imperial gallon (approximately five seers) per head per day (if all water supply is stored), or $\frac{1}{4}$ths of one gallon stored (if there is distilling apparatus), sufficient? If not, what scale do you recommend?</p>	
<p>81. As far as you are aware, are the facilities for obtaining a supply of sea water for ablution sufficient? Is separate accommodation for bathing required?</p>	
<p>82. Is there any need to require a ship to carry a high caste Hindu for the purpose of distributing water and for cooking?</p>	
<p>83. Should Hindus be separately accommodated from Mohammedans? Should some of the cooking places be reserved for Hindus and some for Mohammedans? Do you recommend that shipowners should be required to have a shop on board the ship? If so, on what runs?</p>	
<p>84. In your experience, do deck passengers carry an excessive quantity of luggage? Would the provision of luggage racks considerably relieve congestion?</p>	
<p>85. Are you aware of any rule that deck passengers shall have with them only a certain number of hand packages? If so to what runs does it apply?</p>	
<p>86. The Board of Trade rules for the carriage of cattle are briefly as follows:—</p> <p>(a) <i>Open deck not under cover.</i>—They must be effectually shut off from the passenger space by bulkheads, wooden partitions, or otherwise, wash boards being provided.</p> <p>(b) <i>Under cover on same deck as passengers.</i>—They must be separated from the passengers by movable close bulkheads, athwartships, from deck to roof, or they must be otherwise efficiently separated.</p> <p>(c) <i>In the hold or 'tween decks.</i>—Cattle space must be effectually shut off from passenger space and separately ventilated.</p> <p>Do you consider that cattle, sheep and goats can, without objection, be carried on Native Passenger Ships subject as in the Board of Trade rules? If not what modification do you suggest? Do you, for instance, consider that the carriage of cattle and passengers in the same compartment should be forbidden?</p>	

Questions.	Answers.
<p>Do you think any improvements are needed in the provision of shelter for passengers at embarkation or disembarkation?</p>	
<p>Is there any need of separate accommodation for females?</p>	
<p>How long have you been acquainted with the conditions under which deck passengers travel? Do you consider that conditions have been improved during that period?</p>	
<p>Do you think that the bulk of the deck passengers of whom you have experience can afford to pay higher fares? Have the fares been raised within recent years? If so, on what runs and by how much?</p>	
<p>Have you any suggestions to make regarding modifications needed in the conditions regulating the carriage of passengers on sailing vessels?</p>	
<p>Do you consider the safety and comfort of deck passengers travelling in brigs and other sailing ships adequately provided for? If not, what amendment do you recommend and in respect of what runs?</p>	

APPENDIX C.

PASSENGERS BY NATIVE PASSENGER SHIPS.

I.

Abstract statement of the number of passengers (other than Emigrants and Pilgrims) carried in Native Passenger Ships.

	1889-90.	1909-10.	1918-14.	1919-20.
<i>Long Voyages—</i>				
<i>To ports out of India—</i>				
From Burma . . . . .	...	164	451	1,783
" Bengal	87	3,866	21,075	5,655
" Bombay and Sind	4,684	8,729	14,524	11,569
" Madras	17,283	6	4,714	5
TOTAL	22,004	15,765	40,764	19,011
<i>To ports in India—</i>				
From Burma	15,486	35,228	46,154	17,630
" Bengal . . . . .	...	9	35	...
" Bombay and Sind	408	5	8	5
" Madras . . . . .	...	7	...	...
TOTAL	15,844	35,244	46,197	17,625
TOTAL LONG VOYAGES	37,848	51,009	86,961	36,646
<i>Short Voyages—</i>				
<i>To ports within the Province—</i>				
From Burma	35,298	48,115	56,997	84,723
" Bengal	144,600	28,047	31,370	31,633
" Bombay and Sind	639,695	1,322,720	1,601,302	1,411,483
" Madras	10,501	2,262	1,653	1,150
TOTAL	830,094	1,401,164	1,691,322	1,478,984
<i>To ports beyond the Province—</i>				
<i>(a) In India—</i>				
From Burma	70,084	337,324	267,130	168,133
" Bengal	60,060	189,352	204,208	153,340
" Bihar and Orissa . . . . .	...	43,296	33,169	27,742
" Bombay and Sind	4,800	5,528	4,472	7,150
" Madras	52,401	150,856	150,779	95,369
TOTAL	187,345	726,354	659,748	451,734
<i>(b) Out of India—</i>				
From Burma	1,217	8,763	17,952	1,646
" Bombay and Sind	5,644	21,306	26,691	18,145
" Madras	18,255	200,839	277,352	120,402
TOTAL	26,116	230,958	321,995	140,193
TOTAL TO PORTS BEYOND THE PROVINCE	213,461	957,312	981,743	591,927
TOTAL, SHORT VOYAGES	1,043,555	3,358,476	2,673,065	2,070,921
GRAND TOTAL, LONG AND SHORT VOYAGES	1,081,403	2,409,485	2,760,026	2,107,567

II.

Detailed statement of the number of passengers (other than Emigrants and Pilgrims) carried on Long Voyages in Native Passenger Ships from Indian Ports.

Port of departure.	Port of destination.	1889-90.	1909-10.	1913-14.	1919-20.	Port of departure.	Port of destination.	1889-90.	1909-10.	1913-14.	1919-20.
<i>To Ports out of India.</i>						<i>To ports out of India—contd.</i>					
Rangoon	Amoy	...	...	...	1,662	Negapatam	Penang	...	...	4,702	...
"	Hongkong	...	...	...	54	"	Singapore	16,881	...	...	...
"	Mauritius	...	...	...	...	Coconada	Galle	...	...	...	...
"	Shanghai	...	...	...	...	"	Mauritius	...	6	12	...
"	Yokohama	...	...	...	...	"	Re-Union	...	...	...	...
Tavoy	Kobe	...	...	...	66	Porto Novo	Penang and Singapore.	299	...	...	...
"	Penang	...	164	451	...	Madras	Singapore	48	...	...	...
	TOTAL, BURMA	...	164	451	1,782	Calicut	Penang	60	...	...	...
						"	London	...	...	...	5
Calcutta	Fiji	...	28	...	...		TOTAL, MADRAS	17,883	6	4,714	5
"	Hongkong	...	1,848	1,519	764						
"	Mauritius	...	38	66	134		TOTAL, TO PORTS OUT OF INDIA.	22,004	15,765	40,764	19,011
"	Penang	...	2,613	13,038	1,764						
"	Shanghai	...	41	713	296						
"	Singapore	...	2,193	5,440	2,333						
"	Other ports	...	105	299	364						
False point	Mauritius	37	...	...	...			
	TOTAL, BENGAL*	37	6,866	21,075	5,655						
						<i>To Ports in India.</i>					
Bombay	Aden	...	98	511	1,121	Rangoon	Bombay	9	...	...	1
"	Beira	...	131	584	843	"	Calcutta	...	...	...	1,183
"	Cape Town	...	326	372	...	"	Coconada	...	19,732	27,720	3,424
"	Chendi	...	142	179	...	"	Colombo	...	...	...	176
"	Dar-es-Salam	...	392	680	179	"	Madras	...	15,491	18,494	12,844
"	Delagoa Bay	...	310	860	1,536	"	Negapatam, Madras and Coast ports.	15,427	...	...	...
"	Durban	...	...	573	988	"	Other Ports	...	...	...	2
"	East London	...	43	79	...		TOTAL, BURMA	15,436	35,223	46,154	17,630
"	Jeddah	...	...	...	105						
"	London	...	...	172	428	Calcutta	Bombay	...	5	1	...
"	Mauritius	783	...	18	...	"	Other Ports	...	4	34	...
"	Do. <i>via</i> Zanzibar.	245	...	...	...		TOTAL, BENGAL	...	9	35	...
"	Mombassa	...	1,946	4,921	4,011	Karachi	Aden	...	...	...	...
"	Mozambique	...	67	223	16	"	Calcutta	...	5	4	1
"	Hongkong <i>via</i> Singapore.	148	...	...	...	"	Rangoon	...	...	4	...
"	Natal	438	2,060	753	30	"	Colombo	...	...	...	4
"	Port Said	...	...	...	...		TOTAL, SIND	...	5	8	5
"	Rasra, Bushire and Fao.	75	...	...	...	Bombay	Calcutta <i>via</i> Madras	408	...	...	...
"	Tanga	...	...	223	...		TOTAL, BOMBAY	408	...	...	...
"	Zanzibar	729	1,799	2,979	1,807		TOTAL, BOMBAY AND SIND	408	5	8	5
"	Zanzibar and Aden	350	...	...	...	Calicut	Calcutta	...	7	...	...
"	Other Ports	...	575	755	217		TOTAL, MADRAS	...	7	...	...
	TOTAL, BOMBAY	2,768	7,914	13,887	11,281						
Karachi	Aden	255	256	155	110		TOTAL TO PORTS IN INDIA	15,844	35,244	46,197	17,635
"	Basra, Muskat, etc.	1,494	...	...	...		GRAND TOTAL, LONG VOYAGES	37,848	51,009	86,961	36,646
"	Jeddah	...	202	129	...						
"	Bunder Abbas	77	...	...	...			
"	Mauritius	...	187	39	100						
"	London	90	...	...	...			
"	Other Ports	...	170	814	78						
	TOTAL, KARACHI	1,916	815	637	288						
	TOTAL, BOMBAY AND SIND	4,684	8,729	14,524	11,569						

* A very few passengers were also carried on long voyages from Calcutta to Madras and Ceylon in 1889-90.

Detailed Statement of the Number of Passengers (other than Emigrants and Pilgrims) carried on Short Voyages within the Province whence they sailed, in Native Passenger Ships—continued.

Port of departure.	Port of destination.	NUMBER OF PASSENGERS.				Port of departure	Port of destination.	NUMBER OF PASSENGERS.			
		1889-90	1909-10	1913-14	1919-20			1889-90	1909-10	1913-14	1919-20
... ..	Vizianrug and other ports.	...	909	153	890	Madras	Masulipatam	183	...	...	...
... ..	Bombay	...	2,421	...	...	"	Coconada	199	...	...	...
... ..	Bombay and other ports.	669	2,518	3,931	1,800	"	Bimlipatam	189	...	...	...
... ..	Alibag or Bombay.	...	4,377	5,238	5,554	"	Vizagapatam	240	...	...	...
... ..	Bombay and other ports.	1,509	22,655	17,394	14,024	"	Gopalpur	163	...	...	...
... ..	...	...	...	...	628	"	Calingapatam	12	...	...	...
... ..	...	...	4,276	5,238	6,031		TOTAL	936	...	...	...
... ..	...	213	{ 25,411	{ 38,716	31,485						
... ..	...	...	1,629	91	...	Kilakani	Tuticorin	...	...	215	20
... ..	Janjeri	...	...	...	2,421	"	Dhanushkodi	...	...	...	13
... ..	Dabhol	...	...	2,058	2,337	"	Pamban	...	...	22	10
... ..	...	...	...	...	1,166	"					
... ..	Bombay	147,627	29,457	47,111	44,100		TOTAL	...	...	237	43
... ..	...	...	7,993	15,555	8,325						
... ..	...	...	...	...	7,163						
... ..	Alibag or Bombay.	...	3,115	(a) 1,961	2,735	Gopalpur	Coconada	...	...	1	...
... ..	Bombay	...	55,058	70,118	50,740	"	Vizagapatam	...	...	4	...
... ..	...	...	46,233	28,344	35,948						
... ..	...	...	6,498	303	...						
... ..	Kharepatan	...	...	...	...		
... ..	Bombay	...	141	907	158	Malpe	Kundapur	...	46	35	22
... ..	...	...	12,928	15,644	16,416	"	Mangalore	2,177	437	297	157
... ..	...	...	4,101	5,599	4,502						
... ..	Rai	...	...	461	...						
... ..	Alibag	...	...	7,845	10,412						
... ..	Bombay	...	251	800	41						
...						
... ..	...	...	34,625	55,062	55,245						
... ..	...	...	4,927	7,699	4,006						
... ..	Vizianrug (and coast.)	2,840	35,925	40,684	38,370						
... ..	Ratsnagiri	...	...	...	371	Cochin	Aleppey	...	7	1	...
... ..	...	...	...	...	148	"	Madras	...	4	...	...
... ..	Bombay	11,652	17,167	18,201	10,197	"	Calicut	...	2	3	...
... ..	Cutch-Mandvi	...	9,071	11,159	6,703	"	Tuticorin	...	2	...	...
... ..	Dwarka	...	1,728	2,229	1,659	Mangalore	Kundapur	...	416	265	163
... ..	Jamnagar	...	208	341	73	"	Calicut	1,033	...	...	...
... ..	Mangroi	...	79	155	56	"	Malpe	...	492	184	306
... ..	Porebunder	...	2,618	3,915	1,500						
... ..	Salaya	...	257	492	97						
... ..	Veraal	...	376	535	318						
... ..	Other ports	...	317	475	143						
... ..	Bombay and other ports.	...	21,565	31,199	23,387						
... ..	TOTAL	11,652	53,336	68,701	43,133	Cuddalore	Madras	...	...	...	6
... ..		...	...	...	...	"	Pondicherry	...	...	2	...
... ..	Alibag	...	112	...	...	Pamban	Tondi	...	267	67	...
... ..	Rewadanda	...	615	...	...	"	Ammapatam	...	...	4	...
... ..	Roha	...	20	...	...	"	Negapatam	108	...	...	...
... ..	TOTAL	...	747	...	...	"	Kilakani	...	...	11	...
... ..		...	...	...	...	"	Tuticorin	...	...	29	...
... ..	Rai and other ports	...	998	...	...				
... ..	TOTAL, BOMBAY AND SIND.	639,695	1,322,720	1,601,302	1,411,488						
... ..	Pamban	...	159	71	...	Calingapatam	Baruva	...	3	2	...
... ..	Gopalpur	2,111	...	...	...	"	Coconada	...	1	...	...
... ..	Madras	20	...	...	...			
... ..	Calingapatam	4	...	...	...			
... ..	Cochin	...	...	2	5	Tondi	Pamban	...	110	21	50
... ..	Aleppey	...	3	...	...	"	Devipatnam	...	...	...	40
... ..	Madras	...	2	...	...	"	Kottapatnam	...	...	...	70
... ..		...	...	...	...	"	Tuticorin	...	...	...	...
... ..		...	...	...	...	"	Ammapatam	...	...	3	...
... ..	TOTAL	...	5	2	5						
... ..	Negapatam	1	...	...	...	Tuticorin	Kulasekharapatam	...	...	192	...
... ..	Gopalpur	56	...	...	...	Masulipatam	Negapatam	344	...	...	...
... ..	Masulipatam	57	...	...	...	Vizagapatam	Coconada	...	24	...	...
... ..	Baruva	4	...	...	...	"	Bimlipatam	...	...	...	...
... ..	Calingapatam	8	...	...	...	"	Madras	1,280	...	...	...
... ..	Madras	824	12	...	...	Gopalpur	Baruva	130	...	...	...
... ..	Vizagapatam	178	...	...	...	"	Calingapatam	...	2	9	...
... ..	Bimlipatam	57	...	...	...	"	Baruva	...	4	4	...
... ..	Malpe	...	25	12	32						
... ..	Mangalore	799	273	197	256						
... ..	TOTAL	799	298	209	288	Total, to Ports within the Province.		820,094	1,401,164	1,691,322	1,478,994

* Detailed figures defective.

(a) Excluding Bombay port of destination.

Detailed Statement of the Number of Passengers (other than Emigrants and Pilgrims) carried on Short Voyages beyond the Province whence they sailed, in Native Passenger Ships, to Ports in India.

Port of departure.	Port of destination.	NUMBER OF PASSENGERS.				Port of departure.	Port of destination.	NUMBER OF PASSENGERS.				
		1889-90	1909-10	1913-14	1919-20			1889-90	1909-10	1913-14	1919-20	
Rangoon	Calcutta (Coast Ports and Moulmein).	33,022	140,155	175,299	101,227	Barua	Rangoon	1,059	15,770	12,601	9,245	
	Barna	...	882	...	2,540	Bimlipatam	"	1,887	5,508	8,518	1,767	
	Cocanada	...	46,192	...	21,828	Calingsapatam	"	4,016	14,770	8,977	5,155	
	Madras	22,985	20,375	21,958	14,044	"	Akyab	74	...	...	...
	Bombay	5	...	...	...	Calicut	Bombay	...	288	179	1
	Negapatam (and Colombo).	110	...	...	...	"	Calcutta	...	...	10	...
	Vizagapatam	...	2,719	...	...	TOTAL	TOTAL	...	238	189	1
	Port Blair (and Calcutta-Madras).	408	...	...	480	Cocanada	Rangoon	8,361	29,509	24,339	17,168
	Pooree	...	...	62,371	...	"	Moulmein	5	...	...	...
	Chittagong	...	1,252	...	15,316	TOTAL	TOTAL	8,366	29,509	24,339	17,168	
TOTAL	TOTAL	56,530	211,575	259,628	155,435	Cochin	Bombay	...	56	8	...	
Akyab	Calcutta	...	...	4,090	15	"	Other ports	...	7	4	...
	Chittagong	18,554	25,749	...	10,480	TOTAL	TOTAL	...	63	12	...	
	Rangoon	...	...	3,412	2,189	Cannanore	Bombay	...	157	89	...
TOTAL	TOTAL	18,554	25,749	7,502	12,664	Cuddalore	Rangoon	85	9	...		
Tavoy	Chittagong	...	...	...	...	"	Calcutta	...	...	1	...
	TOTAL	...	...	...	...	TOTAL	TOTAL	85	9	1	...
Moulmein	Calcutta	...	...	...	34	Gopalpur	Rangoon	2,181	11,006	18,695	15,458
	Chittagong	...	...	...	...	"	Calcutta	572	...	...	...
TOTAL	TOTAL	...	...	...	34	"	Puri	...	2	...	...
Calcutta	Chandbally	...	...	32,613	31,150	TOTAL	TOTAL	2,753	11,008	18,695	15,458
	Akyab	...	...	...	...	Kundapur	Bhatkal	...	425	283	190
	Kyaukpyu	38,982	...	...	...	"	Bombay	1,604	324	311	750
	Moulmein	...	5	4	...	"	Honawar	...	112	196	113	
	Rangoon	...	64,198	94,255	85,192	"	Karwar	...	73	83	78	
	Port Blair	1,183	1,372	1,367	2,316	"	Kumpta	...	291	401	182	
	Chittagong	...	5,331	...	...	"	Marmagao	...	239	219	358
	Puri	...	...	1,187	...	"	Tadri	...	523	371	338
	Other ports	...	2	...	456	"	Vingorla	...	46	102	58	
	TOTAL	TOTAL	40,165	70,908	129,426	119,121	TOTAL	TOTAL	1,604	2,033	1,971	2,057
Chittagong	Akyab	11,093	33,888	42,128	11,649	Madras	Rangoon	8,431	32,853	50,162	20,502	
	Calcutta	...	1,783	...	...	"	Port Blair	19	...	...	...
	Khulna	...	9	...	...	"	Calcutta	167	...	...	...
	Kyaukpyu	40	...	100	116	"	Bombay	1	...	...	...
	Maungdow	...	3,396	5,673	10,281	TOTAL	TOTAL	3,618	32,853	50,162	20,502	
	Madras	...	248	...	...	Malpe	Bhatkal	...	205	179	106
	Rangoon	8,762	33,708	24,289	11,789	"	Bombay	1,769	1,250	1,474	2,364	
	Other ports	...	...	81	434	"	Honawar	...	180	150	77
	TOTAL	TOTAL	19,895	73,032	72,271	34,219	"	Karwar	...	81	83	66
	Gangesagar	Puri	2,511	...	"	Kumpta	...	340	266	136
TOTAL, BENGAL		60,060	143,940	204,203	153,340	"	Marmagao	...	872	768	441	
Chandbally		...	...	32,541	27,520	"	Tadri	...	500	467	354
Puri	...	...	618	222	"	Vingorla	...	81	54	88	
TOTAL, BIHAR AND ORISSA	...	...	33,159	27,742	TOTAL	TOTAL	1,769	3,489	3,441	4,332	
Bombay	Calcutta	484	...	...	...	Masulipatam	Rangoon	516	...	...	...
	Kundapur	...	359	319	389	Mangalore	Bhatkal	...	673	724	638	
	Malpe	...	1,214	970	2,480	"	Bombay	7,396	3,961	3,949	5,356	
	Mangalore	4,316	3,946	3,174	4,281	"	Goa	...	...	...	466
	TOTAL	4,600	5,519	4,463	7,150	"	Honawar	...	435	228	251	
Karachi	Mangalore	...	...	...	...	"	Karwar	...	153	170	156
	Marmagao	...	7	4	...	"	Kumpta	...	441	372	232	
	Tuticorin	...	...	5	...	"	Marmagao	...	545	616	...
	Cochin	...	...	...	...	"	Tadri	...	598	673	651
TOTAL	...	7	9	...	"	Tondi	...	...	...	...
TOTAL, BOMBAY AND SIND	...	4,800	5,526	4,472	7,150	"	Vingorla	...	219	154	199	
	...	...	...	...	...	"	Other ports	...	28	...	...
	...	...	...	...	...	TOTAL	TOTAL	7,496	7,053	6,890	8,164
	...	...	...	...	...	Negapatam	Rangoon	15,240	2,963	169	363
TOTAL MADRAS	...	...	...	...	...	Tellicherry	Bombay	...	148	53	...
	...	...	...	...	...	Vizagapatam	Calcutta	...	...	...	...
	...	...	...	...	...	"	Rangoon	3,968	25,270	20,022	11,154
	...	...	...	...	...	TOTAL MADRAS	TOTAL MADRAS	52,401	150,856	150,779	93,209

† The ports of destination are not specified.

Detailed Statement of the Number of Passengers (other than Emigrants and Pilgrims) carried on Short Voyages beyond the Province whence they sailed, in Native Passenger Ships, to Ports out of India.

Port of departure.	Port of destination.	NUMBER OF PASSENGERS.				Port of departure.	Port of destination.	NUMBER OF PASSENGERS.			
		1889-90	1909-10	1913-14	1919-20			1889-90	1909-10	1913-14	1919-20
Mergui.	Total, to Ports in India.	187,845	537,646	659,743	451,734	Tondi	Colombo	...	8,774	5,383	...
	Penang	...	903	1,561	...	"	Kangasenturai	...	...	17	...
	Moulmein	Mergui	...	...	...	...	Tricomalee	...	...	11	...
	Penang	...	...	112	754	Ammapatam	Colombo	...	12,160	4,914	...
"	Victoria Point	...	...	...	...	Calicut	"	...	5	1	...
"	TOTAL	...	...	112	754	Cochin	"	...	4	2	...
						Tellicherry	"	...	1	...	...
						TOTAL	TOTAL	...	8,774	5,401	...
Rangoon	Amoy	...	3,494	5,365	...	Cuddalore	Singapore	...	...	419	391
"	Penang	...	68	...	47	"	Pennag and Singapore.	...	378	...	...
"	Singapore	8	4,803	9,976	730	Danushkodi	Taliamaner	...	...	3,772	...
"	Colombo	9	...	...	...	Cannanore	Ceylon	...	2	...	...
"	Straits	1,200	...	...	...	Madras	Singapore	...	...	...	38,410
"	Hongkong	...	...	58	...	"	Penag and Singapore.	...	6,188	...	...
"	Shanghai	...	...	880	...	"	Colombo	11	...	...	...
	TOTAL	1,217	7,860	16,279	777	"	Galle Straits Settlements	2	...	...	34,100
Tavoy	Penang	...	...	...	115		TOTAL	13	6,188	34,100	38,410
	TOTAL, BURMA	1,217	8,763	17,952	1,646						
Bombay	Abodham	...	...	...	...	Negapatam	Singapore	...	...	59,815	62,617
"	Aden	...	152	75	...	"	Colombo	245	...	...	...
"	Bahrein	...	342	458	370	"	Penang and Singapore.	...	44,526	...	...
"	Bagdad	...	87	...	...	"	Penang	...	...	10,086	...
"	Bandar Abbas	...	350	204	436		TOTAL	245	44,526	69,901	62,617
"	Busreh	6,644	2,507	2,784	1,333	Mangalore	Ceylon	...	3	...	...
"	Bushire	...	463	524	635	Pamban	Colombo	96	3,556	1,611	...
"	Charbar	...	...	14	...	"	Ballicofa	...	68	152	...
"	Colombo	...	...	159	...	"	Jaffna	...	61	529	...
"	Dubai	...	256	404	193	"	Kal Kuda	...	25	...	...
"	Gwadar	...	116	74	...	"	Kaita	...	...	232	...
"	Hanjam	...	...	67	289	"	Kangasenturai	...	107	470	...
"	Jask	...	96	327	2		TOTAL	96	3,812	2,994	...
"	Koweit	...	100	199	216	Tuticorin	Colombo	17,901	125,036	155,848	18,982
"	Linga	...	183	165	102	Cochin	"	...	...	...	2
"	Mahomera	...	219	583	1,014		TOTAL, MADRAS	18,255	200,889	277,352	120,402
"	Muscat	...	374	403	271		Total, to Ports out of India	26,116	230,958	321,995	140,193
"	Pasni	...	25	9	3						
	TOTAL	6,644	5,270	6,448	4,863						
Karachi	Abaden	...	...	...	1						
"	Bahrein	...	846	1,423	945						
"	Bandar Abbas	...	675	664	908						
"	Busreh	...	5,075	4,287	3,833						
"	Bushire	...	1,095	1,913	988						
"	Charbar	...	857	1,051	969						
"	Dubai	...	351	787	418						
"	Gwadar	...	2,259	2,573	494						
"	Hanjam	...	...	207	478						
"	Jask	...	274	220	220						
"	Koweit	...	334	253	443						
"	Linga	...	252	468	239						
"	Mahomera	...	445	3,292	1,783						
"	Muscat	...	1,700	1,970	1,287						
"	Ormara	...	...	51	...						
"	Pasni	...	1,836	1,084	281						
"	Other ports	...	37	...	...				
	TOTAL	...	16,036	20,243	13,232						
	TOTAL, BOMBAY AND SIND	6,644	21,306	26,691	18,145						