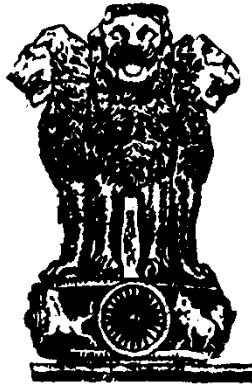


DIS. 41
1,200

GOVERNMENT OF INDIA
**MINISTRY OF INDUSTRY,
AND SUPPLY**



REPORT
OF THE
MACHINE TOOL PANEL

PRINTED BY THE MANAGER, GOVERNMENT OF INDIA PRESS, NEW DELHI, INDIA.
PUBLISHED BY THE MANAGER OF PUBLICATIONS, DELHI, INDIA.
1949

Price Rs. 1 As. 8 or 2s 3d.

CHAPTER I

(1) *Prospects of successful establishment of the Machine Tool Industry in India.*—Some of the persons who responded to our request to give us the benefit of their views, expressed doubts as to the prospects of a successful development of the Machine Tool Industry in India. Their apprehensions are based to a great extent on the lack of facilities in India, which are available in foreign countries in which the machine Tool Industry has been developed, e.g., the inadequacy of the demand for machine tools in the country, non-availability in some cases of raw materials of the right type and specification and of technical experience required to produce efficient machine tools at a competitive price. These points have been discussed in subsequent Chapters of our Report. All that we can say at this stage is that we do not share these apprehensions. However, as the opinions expressed were by persons possessing a fair amount of experience of the manufacture and particularly of the import trade in India we have tried to give a bird's eye view of the development of this Industry in a few of the leading foreign countries. We feel that it would clarify the issues considerably and would facilitate a general appreciation of the problems facing the Machine Tool Industry in India, if some indication, however short, was given of the circumstances in which this industry developed in pre-war period in some of the foreign countries like Great Britain, America, Switzerland and Germany.

(2) *Development of the Machine Tool Industry in Great Britain.*—Great Britain is generally recognised as having been a pioneer in this line; for, primary machine tools—the boring machine, lathe and the shaping machines are said to have been first developed there. The reason is not far to seek. As a result of a few epoch making discoveries in Science and the acquisition of a number of territories, the market for the export of finished articles from England was rapidly expanding towards the end of the 18th Century and the opportunity offered was taken full advantage of by an enterprising people. There was consequently rapid progress towards general industrialisation in the country. Wilkinson's invention of the Boring Machine in the year 1774, materially helped Bolton and Watt in improving their steam engines. Mudsley (1771—1844) "one of the greatest of early Tool Builders", developed the Screw Cutting Lathe in the year 1797. The Slotting and the Planning Machines were invented about 1820. These inventions fully established the utility of machine tools and gave such a general impetus to further development that by the middle of the 19th Century, England had become a leading manufacturer of Machine Tools, particularly after Whitworth had standardised the Screw Cutting threads and had completed the work on primary and general machine tools. From this time, this industry has marched from strength to strength in England with the result that in 1936, the approximate capital invested in British Machine Tools was about 7½ million pounds and the labour employed had increased to about 26,000. It rose to 87,000 in 1942. Approximate Annual Outturn of the machine tools manufactured in 1936 was also about 7½ million pounds—equivalent to 1½% of the total Engineering Industry and 5% of the mechanised engineering trade. The investments had increased to nineteen million pounds in 1939 and to forty-seven million pounds in 1942.

(3) *Development of the Machine Tool Industry in the U. S. A.*—The United States of America started industrialisation a little later than England but that

(2) *Start made in 1941.*—The collapse of France in the West and the subsequent flare up of hostilities in the East imposed a severe restriction on the import of machine tools from abroad. The exigencies of war which had played a great part in the development of this Industry in Germany and also in U. S. A. began to operate in India as well. It was necessary to utilise to the full what scanty resources existed in the country. The Machine tool Control was brought into force early in 1941. Its officers immediately got into touch with firms like, Cooper Engineering Ltd., Satara, Jessop & Co. Ltd. Calcutta and others, who were considering the question of building Machine Tools on a mass production basis and had already commenced manufacture of certain types for special purposes. In addition, efforts were made to interest, in this manufacture, a number of other firms newly started or which had been manufacturing other articles. Majority of these firms were encouraged to begin by building simple types of machines such as centre lathes, shaping and drilling machines, presses, and hacksaw machines. Government licences were freely granted to all firms who expressed their willingness to build machine tools. In the early stages, response from the Engineering Industry was rather unsatisfactory as there was then a general apathy to launch a new enterprise when there was plenty of war work of a remunerative nature to be done. The Machine Tool Control Directorate could however not afford to sit idle. It had to take immediate steps not only to popularise the manufacture but also to rationalise both the output and the purchase just to strengthen the Machine Tool Industry for the great war effort. The production of Machine Tools in India rose to about 150 per month by the end of 1942. They were however low down the scale both in grade as well as in quality. Arrangements were made to import with the least possible delay the necessary Balancing Plant, instruments for inspection equipment required by the leading firms undertaking this manufacture. In addition, a team of about half a dozen machine tool Experts were brought out from England just to help the indigenous Machine Tool Industry with technical advice and guidance. Under the directions of the Director General, Munitions Production (Department of Supply) Test charts for the various types of machinery were framed and specific standard laid down for the Manufacturers so that the products could be conveniently graded according to the accuracy of manufacture. The following leading manufacturers were provided with Government owned Balancing Plants by the Machine Tool Control Directorate :—

1. Messrs. Jessop & Co. Ltd., Calcutta.
2. Messrs. Cooper Engineering Ltd., Satara.
3. Messrs. Mysore Kirloskar Ltd., Harihar.
4. Messrs. India Machinery Co. Ltd., Calcutta.
5. Messrs. Britannia Engineering Co. Ltd., Calcutta.

(3) The total cost of the Balancing Plants supplied came to about Rupees Twentytwo lakhs. In addition, assistance was also given to some firms like Batala Engineering Works Ltd., in obtaining machine tools from U. K./U. S. A. for outright purchases. To cope with the great demand, the Government of India decided at this stage to take over the ordering of all the machines and to handle their distribution in order to rationalise machine tool production in the country. All demands for machine tools including those from Industrial users were collected and bulk orders placed with about 25 firms in the country which were considered by the Machine Tool (Engineering) Adviser as having adequate experience of manufacturing machine tools of the grade required in sufficient numbers. The names of the firms are given in Appendix (H)

(4) *Inspection Organisation set up.*—All the Machine Tools manufactured in the country against bulk orders placed by the Controller were subjected to inspection by the I. S. D. Inspection Directorate under the Controller General of Inspection, M. G. O. Branch, War Department, Government of India. The inspection staff consisted of three Inspecting Officers and thirteen assistants, posted at Calcutta, Bombay and Lahore where manufacture of machine tools had made great progress.

(5) *Machine Tools ordered from Manufacturers in India during the war period.*—During the six years of war from September, 1939 to September 1945, the number of machine tools built in India and supplied through D. G. M. P. came to approximately 20,000 with an average price of above Rs. 3,000 each total Rupees six crores approximately. During the same period the number of machine tools imported by the D. G. M. P. exclusive of those imported direct by the Defence Services, was 28,000 at an average cost of Rs. 12,000 total Rupees thirtythree crores sixty lakhs approximately. Statements Nos. 1 and 2 (Annexed) (Appendices I & J) give details of the machine tools manufacture in the country and imported from abroad, from 1-1-1943 to 5-6-1945.

(6) At the end of the war the firms registered with the Machine Tool Controller, as capable of manufacturing machine tools of various grades were as shown below :—

Number of firms	Grades
11	Grade I Machine Tools.
7	Grade II Machine Tools.
14	Grade III Machine Tools.
183	Ungraded Machine Tools.

There are at present three kinds of Machine Tool Manufacturers in the country :—

- (a) Companies or firms or shops who have come into existence merely to manufacture machine tools. They have no other side shows and are dependent entirely on the success they are likely to achieve in the development of this Industry..
- (b) Engineering firms who primarily manufactured other articles or implements but took up the manufacture of machine tools only as a side line. In case of failure of this side show they have their main line of activity to fall back upon. In fact, some of them have either already decided or are contemplating to do so.
- (c) Small scale enterprises in which the manufacture of machine tool was undertaken on a cottage industry basis by the family either as their sole effort or as a side show in addition to what the family had been manufacturing in the past.

Big firms or small scale manufacturers who have other sidelines to fall back upon are therefore in a better position to go out of the Machine Tool Industry than those whose existence depends upon the preservation and consolidation of the manufacturing capacity they have already built up. The Government should however

encourage both classes of manufacturers and do all it can to assist them in consolidating the development of the war period.

(7) *Development of the Small Tool Industry in India.*—The progress of the Small Tool Industry in India has been more or less on to the same lines as those of the Machine Tool Industry as a whole. Prior to 1937 practically all of India's requirements of small tools were met by imports. One factory was started in this year to manufacture Twist drills, reamers and cutters. When the war broke out the Indian Tool Manufacturers Ltd., Bombay were practically the only firm producing small tools. To improve the output of munitions the question of establishing a large Twist Drill factory in India was considered during the war but the proposal was finally abandoned. The Indian Tool Manufacturers Ltd., who, had then only a small manufacturing capacity, were approached by the Government to undertake the manufacture of twist drills and other cutting tools on a large scale to meet the war requirements. This factory has since increased its output by the installation of additional machinery and equipment and its present capacity is reported to be about 7 lakhs of drills per annum, in additions to the manufacture of other cutting tools like reamers, cutters, etc. Other factories have also sprung up during the war and are either in production or approaching production of cutting tools other than twist drills. The following statement gives the names of some of the principal small tool manufacturers in India and the type of tools manufactured.—

PRINCIPAL SMALL TOOL MANUFACTURERS IN INDIA

Manufacturers	Type of tools manufactured
1. The Indian Tool Manufacturers Ltd. Factory— 101, Sion, Bombay. Office—250, Worli, Bombay	Cutting Tools, e.g. Reamers, Milling cutter and Twist Drills.
2. The Praga Tools Corpn. Ltd. 17, Saifabad, Hyderabad. Deccan.	Engineering Tools, e.g. Jigs and fixtures chasers, vices, Surface plates, bench centres etc. and measuring instruments.
3 The Bharat Tool Mfg. Co. Ltd., Parel, Bombay	Cutting Tools, e.g., Reamers Milling Cutters taps, dies, etc.
4. Mysore Kirleskar Ltd., Harihar	Planning to make Twist Drills and other small tools.
5 The India Works Ltd., Wazirabad, Punjab	Engineering Tools

The figures of consumption and production of twist drills during the year 1944-45 were as follows :—

Consumption	Production
11 lacs*	7 lacs*

For the same period i.e. July 44, to July 45 Government purchases of other small tools were—

Milling Cutters	Reamers	Taps	Dies
39,200*	22,200*	2,08,000* sets	2,700*

*Figures supplied by the Small Tool Manufacturers Association. The Small Tool Manufacturers Association estimates that the consumption of twist drills during the first few years of the postwar period is expected to be about 4 lacs, while the indigenous capacity developed is already about 7 lacs. The country has therefore secured a surplus capacity of nearly 3 lacs of drills per annum.

In course of our discussions with business men directly or indirectly associated with the machine Tool Industry some persons of fairly moderate views and reasoned outlook of life, expressed great regret at not enough having been done by Government during the war to develop the machine Tool Industry in India. They were of the opinion that if the opportunities had been fully utilised, the Machine Tool Industry would have made much more progress. Even if we had the time and material to form an opinion on this issue we consider that not useful purpose would be served at this stage by doing so as we are more concerned with the present and the immediate future. What happened in the past is a matter of history only and is useful to us only to the extent that it facilitates the solution of the present problem.

CHAPTER III

(1) *Fixation of target for the manufacture of machine and small tool for the next five years.*—Whatever opinion one may hold as to the adequacy or inadequacy of the development of machine and small tools industry in the country in war years, it cannot be denied that a nucleus has been established which, if preserved in the formative period can be developed in course of a few years, to meet at least the general requirements of the country. It would therefore be advisable at this stage to estimate even approximately if possible what these requirements are likely to be in another five years and to fix the target of development accordingly. Such an estimate in case of the Machine Tool Industry is however not easy to frame even with any degree of approximation, for machine tools are of various kinds and the number of machine tools required in any particular year will depend to a very great extent upon the Governments, programme of works, new industries developed; also annual replacements of existing tools.

(2) In case of basic industries like steel, cement and sugar etc., the needs in any particular period can be estimated with some degree of approximation and suitable provision made in the target for the year, but in case of machine tools there is in addition to the non-availability of the usual data required, the further handicap of the time taken to produce a new machine tool as the manufacture involves preparatory arrangements, the seasoning of castings, which may take the best part of a year before a new type of machine tool can be produced. Even after manufacture, the new machine tool has to be put through a number of tests for rectification of defects which invariably creep into the first few models. In these circumstances, before a manufacturer undertakes the manufacture of a new type of machine tool he will not only have to be sure of the market for it but will also have to ensure that none of the defects incidental to the experimental manufacture of a new machine tool has been allowed to remain. The manufacture of a new machine tools will therefore have to follow the demand and not to precede it. We have consulted a number of experienced persons in the trade but have not been able to get out of them a satisfactory target of production for the next five years. Prewar figures of imports are no guide at all as some of the industries developed during the war have come to stay and the requirements in the postwar period will in any case be much more than those required in the prewar years. Even figures of import and production during the war years are also not a safe guide for, during this period the war activities created a demand which no longer exists. Against these handicaps there is however the compensating factor that the replacement during the war years were few and far between and that the indigenous industry will have to cater for a market which has been starved for a number of years; and that additional demands are also likely to arise as a result of increasing industrialisation of the country.

(3) Taking into consideration every aspect of the question particularly the inherent limitations on the mass production of a new type of machine tool and the uncertainty of the requirements in any particular year, we are of the opinion that the country would not be very far wrong in aiming at a target of production equal to the average of imports and indigenous production of the past three and half years ending 31st December 1945. We find that during this period about 20,000 machine tools were made in the country and that 28,000 imported, amounting in all to a total consumption of 48,000 machine tools in this period or an average of about 14,000 per year. This figure does not include machine tools obtained direct for various Ordnance and Shell Factories which may be considered a sporadic demand not likely to recur in peacetime conditions.

(4) In view of the time lag in placing a new machine tool on the market, we consider that for 1947-48 a target production of 7,325 machine tools consisting of the items given below will not be an impracticable proposition from the point of view of the manufacturer and would, if attained, keep them more than fully occupied. It would also enable them to put their finances on a sound basis :—

RECOMMENDED TARGET PRODUCTION FIGURES FOR INDIGENOUS MACHINE TOOLS IN 1947-48

Description of Machine Tools	Sizes	Production in the year 1947-48
		Nos.
Lathes all geared head	6½" 7½" 9" 12"	500
Lathes Cone Pulley	4½" 6½" 7½" 8½" 9½" 10½"		1,500
Lathes Capstain	Sizes	15
Shaping Machine	12" 18" 24"	400
Drilling Machines	All types		1,000
Planing Machines	Sizes	100
Milling Machines	Do.	150
Slotting Machines	Do.	25
Grinders Pedestal	Do.	1,000
Woodworking machines	Do.	1,500
Presses Sheetmetal working machines	Do.	-1,500
	Total	7,325

We are further of the opinion that it will not be impracticable to insist on the manufacturing capacity of 1947-48 being steadily increased, by 20 % each year so that production may be doubled by the end of March 1953 and become equal almost to the average of the three and half years requirements mentioned in para. (3) above.

(5) We realise that this target may be considered too optimistic by some persons whose knowledge and experience should commend great respect in such matters. All we can say to them at this stage is that if the growing industrialisation of India is not to rest on unstable foundations, the country must be made to meet general requirements of its machine tools in as short a time as possible and this can only be done if suitable targets are fixed in advance and if the three parties—manufacturers, consumers and the Government seriously put their heads together and ensure its materialisation. There are on the other hand some enthusiasts who consider this target too halting, at least not in keeping with the ambition of making India a leading Machine Tool Manufacturer in the world. We feel that we must sound a note of warning to them. The Machine Tool Industry is highly technical and specialised Industry. The necessary technique of production of machine tools of the latest design and specification to the right standard of workmanship cannot be developed at short notice and no greater dis-service to the Industry can be done at present than insistence on a target of production which might lower the standard of workmanship or specification and thus create among consumers a vague prejudice against, if not positive lack of confidence in the machine tool manufacturers in the country. We have to emphasise this aspect of the question for as explained in subsequent Chapters, we are very apprehensive at this stage of even the wartime production of machine tools being maintained in future on account of the difficulties which have arisen and are very nearly overwhelming this nascent industry in India.

(6) We have not commented on the target of production for the small tools for, as explained in Chapter II we find that extra capacity will be available for some items such as twist drills and reamers and that additional capacity can be developed at comparatively shorter notice when the demands arise.

CHAPTER IV

Problems facing the Machine and Small Tool Industry in the Postwar period

It would have been noticed from Chapter II that in spite of the lack of technical experience, shortage of raw materials and of necessary equipment brought about by war conditions and also of other handicaps incidental to the development of a highly specialised industry, the manufacture of Machine and Small Tools has made some progress in the country but mostly on account of the urgency of the war effort, the growth of this Industry has not been natural and may be likened to that of a Plant reared in a hothouse, under the fostering care, supervision and direction of the Machine Tool Controller. This vital Industry has not yet acquired sufficient strength to stand on its own legs. The problems to be solved are as explained in this Report, many, and varied, but they are not insurmountable in our opinion, if the Government, the consumers and the manufacturers play their respective parts in putting the Industry on a sound basis. It must be remembered that if this Industry goes under, India will have to continue to import Machine tools to meet her requirements and the Industries which cannot function without machine tools will come to a standstill with the stoppage of imports in emergencies. The danger of depending upon the imports of small tools cannot also be over emphasised particularly because no workshop can work without small tools.

(2) Our apprehensions in regard to the collapse of the existing machine Tool Industry in the country, if no effective support is forthcoming from the Government and the consumers are not imaginary. We have already noticed in course of our visits to manufacturing centres that due to a variety of causes

resulting from the withdrawal of emergent powers given to the Machine Tool Controller a number of small scale manufacturers of Machine Tools have already gone out of business and have given up the manufacture. No accurate statistical data was available with local Governments or in the Machine Tool Controller's Office to indicate which firms have discontinued the manufacture of machine tools after the War or the extent of the decrease in the production of machine tools of different grades month by month upto date. We are however, not left with any doubt after our visit to manufacturing centres like Lahore and Betala in the Punjab and after discussing matters with a number of small scale machine tool manufacturers that the decrease could not have been less than 50%. The output of leading machine tool manufacturers in the country however appears from the Statement given below, to have been maintained to some extent upto December, 1945 :—

Period	Machine Tools inspected by the I. S. D. Inspecto- rates		Remarks
	Number	Value Rs.	
1944—			
January	625	3,41,973	
February	589	4,25,338	
March	268	3,89,724	
April	452	3,55,852	
May	387	4,21,055	
June	283	3,07,114	
July	352	3,12,244	
August	822	4,79,436	
September	635	4,03,632	
October	423	5,24,223	
November	620	5,06,285	
December	644	5,60,859	
Total	6,100	50,27,735	
1945—			
January	538	5,14,340	
February	435	4,67,630	
March	474	5,28,036	
April	449	5,71,873	
May	250	5,21,003	
June	342	5,20,704	
July	277	4,84,089	
August	370	4,44,830	
September	278	3,91,868	
October	261	3,38,662	
November	255	5,07,953	
December	164	2,77,947	
Total	4,093	55,68,735	

Figures of the outturn after this date are not available but from the Shops visited the impression gained by us was that a substantial reduction was apprehended in 1946-47. In fact, the position after our visits to Lahore and Batala appeared to be so threatening that the Panel had to make immediately some temporary recommendations to the Government; *vide* Appendix F. Some of the recommendations made were, we gratefully acknowledge, given effect to immediately by the Supply Department, *vide* Planning and Development Department's letter No. IND-19(4)/46 dated 14th March 1946 (reproduced in Appendix G). The position has since eased to some extent. Our recommendations (Appendix F) were in the nature of surface palliatives; real difficulties lie much deeper and affect all grades of manufacturers. They will be briefly explained in subsequent paragraphs.

(3) *Assistance to the Industry during the War.*—Owing to the urgent need of the rapid development of Machine Tool Manufacture, the Machine Tool Controller was entrusted during the War period with full responsibility for providing machine tools required by the Government and the public. All requisitions of machine tools had to pass through him. He therefore knew what was wanted and made arrangements to the best of his resources. The manufacturing capacity in the country was utilised to the full and balance of the tools required were imported. The result was that each indigenous manufacturer received what was called a bulk order in advance and sold all the machines he could manufacture against that Order at a remunerative price. As the market was assured for him in advance, he was relieved of all anxiety in connection with the marketing of his product and was in addition being constantly assisted in raising the grade and general standard of his manufactures by the technicians employed by the Controller and the Indian Stores Department Inspectors. With the termination of hostilities the Bulk Orders have disappeared. The indigenous manufacturers have now to market their own products. The control is now only on imports and here too some loopholes developed in the period between the abolition of bulk orders and the introduction of the control over imports under the new scheme. These loopholes were fully taken advantage of by interested parties and some of the imported machine tools were advertised for sale at a price which was reported to us to have been lower than or approximately the same as in the prewar prices.

(4) *Competition from foreign Manufacturers.*—In any case there is no doubt that the Machine Tool Industry in India will have to face and in fact, has already begun to face a severe competition from foreign manufacturers who have built up considerable financial resources and command very high technical experience and knowledge. They have well established sales and services agencies in India which have been in intimate contact with the consumers for a long time and have rendered good service to them in the past and are expecting therefore continued patronage for their products. The manufacturers of Machine Tools in India suffer from serious handicaps on these counts. They have not yet attained that long established reputation for high quality workmanship which alone creates confidence among the consumers. In fact, some of the manufacturers who are still struggling have not yet been able to get over all their initial handicaps and to produce an article which the consumers could use with the same confidence as they extend to foreign machine tools of tried brands. These difficulties and handicaps are inevitable in the earlier stages of development of any new Industry in an undeveloped country but they are further accentuated in case of the Machine Tool Industry by the fact that the efficiency of a workshop depends entirely upon the efficient performance of

the Machine Tools installed therein and naturally the manager or Foreman of the Shop responsible for maintaining a high standard of production would, if left a free choice, naturally instals in his Shops machine tools made by manufacturers of repute in foreign countries which have stood the test of time and given satisfaction in the past in preference to machine tools made by local manufacturers who came into existence only during the last few years and who could not be said to have acquired that knowledge and consequently the standard of technique which comes only from long experience of the work. We are satisfied that many of the Machine Tools made by the Leading Manufacturers in India are capable of rendering the service expected of them and if any shortcomings still exist they are steadily on the mend. The fact however remains that until the indigenous manufacturers have established their reputation and created confidence among consumers preference for machine tools of foreign manufacture will continue. Similar preference existed for steel, cement and other materials of foreign manufacture when the indigenous products came on the market. It is a natural feeling of the consumer to get the best for the money spent. In case of cement or steel however, tests for determining the comparative efficiency of the indigenous products were easy to make. Consequently the preference for articles of foreign manufacture was shortlived. In case of Machine Tools, the position will be different for the tests are not so easy to make and the durability of machine tools cannot be ascertained till they have been in use for some time. Preference for machine tools of foreign manufacture is therefore expected to last a comparatively longer time and patriotism alone will not be an adequate inducement to users of machine tools in India to discard machine tools of long established reputation in favour of the indigenous product whose utility has not yet been fully established. What has been said regarding the prejudices in respect of Indian made machine tools applies equally to the Small Tools and particularly to Twist Drills and Reamers, which India can produce in sufficient numbers to meet its demands.

(5) *Lack of Standard Specification for manufacture.*—Local Manufacturers are further handicapped by the fact that no standard specifications for their machine tools as in case of steel, cement and a number of other articles are available for guidance and test. Consequently the factual data which normally persuaded a hesitant consumer in the case of steel or cement at the commencement of their manufacture, is not available to the indigenous machine tool industry for pushing its sale. We consider it extremely necessary that the Machine Tool Controller and Development Officer (Tools) should be asked to undertake the compilation of a standard specification to give the consumers some idea of the standards to which Indian Machine Tools are being made. Standard specifications of the nature recommended cannot however be compiled immediately and will in no case be ready in time to afford machine tool manufacturers in India an immediate protection. We have therefore to look for immediate assistance in other directions.

CHAPTER V

RECOMMENDATIONS

(1) The Government of India have in the past protected nascent industries like steel, sugar, matches, etc. by raising the tariffs on the imported articles. It cannot however be ignored that the extent of protection required their case was not difficult to determine. In case of the Machine Tool

Industry, the position is quite different for machine tools are being manufactured in India under different conditions and the cost of production varies not only from tool to tool but for a variety of reasons is not approximately the same even for the same type of machine tool produced in different parts of the country. The Tariff Board can only lay down after taking all aspects of the question into consideration an *average rate* of protection for the machine tool industry as a whole. The result will be that some of the machine tools may receive more protection than what is actually needed while in case of others, the protection may not be adequate to cover the extra cost of production. The manufacturers will perforce be compelled in these circumstances to drop the manufacture of machine tools over which they are likely to suffer loss and concentrate to such of them as are likely to yield the greatest profit. Such an arrangement will obviously retard a healthy development of this vital industry. In addition to what has been mentioned above there are other inherent factors which are likely to nullify to some extent to protection through the raising of tariffs for the danger through dumping at a still lower price by foreign manufacturers will always remain. There is also the consideration that such a Duty will not provide for the initial expenditure involved in the protection of a new machine tool, for example, cone pulley lathes are now being manufactured in India in large numbers, while modern tendency is towards the manufacture of gear head lathes. If Indian manufacturers decide to undertake the manufacture of all gear head lathes or any other type of expensive production lathes they will have to incur considerable initial expenditure on the provision of jigs and fixtures and spread it over the lathes sold in the first few years considerably raising thereby the price of the new product. We came across a case in which a Company has sunk about Rupees two lakhs on jigs and tools and other equipments for making chucks and was expecting to recover this expenditure from its sale over a number of years with the result that the price of the chucks becomes so high that a reasonable increase in tariff could not ensure its sale in India. The Tariff Board will find it very difficult to determine protective duties on individual tools; they can recommend only an average increase in tariffs for the machine tool industry. They cannot also be expected to recommend a tariff barrier sufficiently high to cover the initial expenses of a new machine tool or provide from the very beginning for dumping by foreigners. The position will in short be that if the manufacture of a new and expensive machine tool is to be encouraged with the object of making India self-supporting in regard to all her requirements of machine tools, protection through an increase in tariff on an average basis will not by itself solve the problem. If on the hand the tariffs are unduly raised, the interests of the consumers will suffer and the industry will lose that incentive to progress which can only come through a struggle for existence. Taking all aspects of this case into consideration we come to the conclusion that the only practicable alternative and the one cheapest to the taxpayer as well as to the consumer in the long run will be to adopt two lines of attack, viz.,

- (a) a general average increase in the tariff on imported machine tools to the extent found necessary by the Tariff Board;
 - (b) Adequate price preference through the Machine Tool Development Officer for those indigenous machine tools for which the increase in tariff has not afforded adequate protection.
- (2) *Recommendation.*—We recommend therefore that for the next three years, the Development Officer (Tools) should be entrusted with some of

the powers given to him during the war period. For convenience of reference these powers are summarised below :—

- (a) That the Development Officer (Tools) should fix ceiling prices for each and every kind of machine tool or small tool produced in the country. To facilitate fixation of reasonable ceiling prices, the Panel recommend that the Development Officer (Tools) should be provided with adequate Cost Accounting Staff to check the reasonableness of the prices asked for by individual manufacturers for their tools. But once the Development Officer (Tools) has fixed the price he should be authorised to insist that the indigenous article should not be rejected by consumers—Government or the public—on the score of their comparatively high price. Such a procedure will inevitably involve recourse to control generally so irksome to the Trade. We cannot however over-emphasize that, without an exception being made in this case and the retention of controls on the fixation of prices and obligatory purchase of indigenous machine tools at the reasonable prices fixed, it will be impossible to keep this *vital Industry going ; much less to develop it in the near future.*
- (b) To give licences for the import of tools of foreign manufacture only to the extent of the requirements left over after utilising the indigenous production in the country.
- (c) To ask consumers if necessary, to pay higher price than those of the imported articles and to go to Tariff Board for protection of their industries if the ceiling price of the Machine Tool raises the cost of production of their manufacture to an appreciable extent.
- (d) The Development Officer (Tools) to act as a Liaison Officer between the Consumer and the Producer and to raise the standard of workmanship of tools through the experts whose appointments have been recommended in another place.

(3) We fully realise that objections may be raised in the country particularly from consumers in regard to items (a) to (c) of our recommendations above and that the Government may find itself in a difficult position in adopting the Scheme. We have considered, however all possible objections to such a procedure and have thought over the *pros and cons* of the recommendations which we are making. We see no other alternative and cannot emphasise too strongly that there is no other practical solution of the difficulty.

(3) *Cost Accounting Staff to Assist Machine Tool Controller in fixing reasonable prices of machine tools manufactured in the country.*—We have already explained in previous paragraphs why a uniform increase in Tariff will not adequately protect the industry as a whole on account of the innumerable types and sizes of machine tools involved and the different conditions in regard to the availability of raw material and manufacturing methods in vogue in different parts of the country. We consider it essential that in these circumstances the Machine Tools Controller and Development Officer (Tools) should be provided with adequate cost accounting staff for fixing reasonable prices for the machines and small tools manufactured by the various firms in the country. The price fixed will have to be periodically reviewed to keep the machine tool manufacturers upto the mark. Unless this is done the price preference fixed by the Machine Tool Controller will be merely a matter of guess and not always fair to the consumers. The Panel

recommends therefore that the Government of India should take immediate steps to sanction the necessary Cost Accounting Staff to the Development Officer (Tools) to enable him to undertake this very urgent work.

(4) *Publication of Licences issued by the Government of India for the Import of Machine Tools.*—We noticed in course of our discussion with the Manufacturers and others interested in the Trade some apprehension and in some cases almost a conviction that licences were being issued for the import of machine tools of the type which were already being manufactured in the country and which should therefore have been left over to the indigenous manufacturers to supply. We made a special reference to the Departments concerned in our letter dated the 7th March, 1946 (Appendix F) and had also the benefit of a special discussion with the Director General of Supply, Government of India, on this and other allied issues. We have been assured that under the existing Rules, there is no chance of any licence for the import of machine tools being issued by Government without consulting the Development Officer (Tools) who knows what is available or can be manufactured in the country. We, however, feel that the best way of removing such misapprehensions would be regularly to publish in some recognised Trade Journal or a special Bulletin for the information of indigenous manufacturers, particulars of the licences issued for the import of machine tools by the Government of India. Such an arrangement will keep the indigenous manufacturers regularly posted with full particulars of the machine tools imported under Government licences and will also give them an opportunity of representing their points of view and secure redress either direct or through their area representative on the Machine Tool Working Committee which we have proposed elsewhere in this Report. The Offices of the Controller of Imports and that of the Development Officer (Tools) mainly responsible for the issue of the licences will become extra careful on account of the mistakes made by them gaining full publicity later on through the publication proposed by us. We commend this suggestion specially to Government as it will act as a healthy check not only on the offices of the Controller of Imports and the Development Officer (Tools) but on the manufacturers as well. It would also eliminate all chances of a misunderstanding on this account.

(5) *Creation of an Advisory Panel.*—Since the very creation of the post the Machine Tool Controller has been given an Advisory Panel to give him the benefit of their views on problems arising out of the operation of control and of the development of Machine Tool Industry in India. During the War, the Advisory Panel was faced with the task of providing for the needs of the civil and military requirements of Machine Tools in the country but the position has changed since. The need can be provided out of imports and local manufacture. Both the Government of India and public opinion in the country are now strongly in favour of reduction of imports to the minimum and of increasing the manufacture of machine tools to the maximum possible in the circumstances. The time has therefore arrived to reconsider the existing constitution of the Advisory Panel and to create a new Advisory Panel. After consulting a number of experts, we have come to the conclusion that the object can best be served now by creating an Advisory Panel of indigenous manufacturers :—

- 2 representing the Industries in the Punjab ;
- 2 representing the Industries in the Bombay Presidency
- 2 representing the Industries in the Calcutta (Bengal)
- 1 representing the Industries in the Small Tools Industry in the country.

The Advisory Panel is to hold its Meeting quarterly and should be authorised to bring to the notice of the Development Officer (Tools) any complaint brought to them from areas which they represent. We feel that such an arrangement will keep the Machine Tool Controller in active contact with the Industry as a whole and will also enable him to get an idea of the reactions of the manufacturers to the procedure laid down or to any special policy pursued by him.

(6) *Machine Tool Manufacturers Association.*—The manufacture of machine tools has been undertaken in isolated places in India far removed from one another. Although every place has its own problems, it cannot be denied that there are numerous handicaps and requirements common to the Industry in general. Unless attention is focussed on them from the very start, it would be difficult to secure redress to the extent desired or even considered practicable under the present limitations. From the very inception of its work the Panel had been considerably handicapped in securing agreement on these common requirements and needs of the industry for lack of a representative organisation which could speak on behalf of the Industry as a whole. In view of the difficulties experienced the Panel has come to the conclusion that if the manufacture of machine tools is satisfactorily to develop in the country, the manufacturers must get together and form an Association of their own not only to exchange views and experience but to canalise their common difficulties and handicaps and assist the Government in providing the remedies common to the Industry. We feel that formation of such an Association is an immediate necessity but realise at the same time that it cannot flourish in the present stage of development of the Industry in the country without active support from the Government. We recommend therefore that an Association should be formed immediately by the All India Machine Tool Manufacturers and should receive recognition by Government immediately after it is formed. In the opinion of the Panel, the work of the Association would be considerably consolidated in the earlier stages if its Membership is split into three different classes, viz.,

- (a) "Members" paying entrance fee of Rs. 500 per annum ;
- (b) "Associate Members" paying entrance fee of Rs. 250 per annum.
- (c) "Associate" paying entrance fee of Rs. 100 or Rs. 50 per annum.

The above division is expected to attract practically all classes of Machine Tool Manufacturers in the country.

To give the Association an early start a Sub-Committee be appointed to draft Rules and Regulations and also the procedure for the transact of business of the Association. The draft of the Rules should be circulated to the Members, Associate Members and Associates for expression of opinion and may be finalised at the first meeting of the Association. The temporary Sub-Committee will have to send a circular letter explaining the advantages resulting from the establishment of such an Association and a list asking for the co-operation of all concerned. The question of starting a Magazine on behalf of the Association should be considered at its first meeting. The Panel requests the Government to ask the Development Officer (Tools) to give active encouragement to this Association for the first year or two and to facilitate its formation and development on a sound basis.

(7) *Import of Experts to Develop the Industry.*—If the Machine Tool Industry is satisfactorily to meet the general needs of the country in as short a time as possible, it is essential that the machine tools manufactured should at least be of the same standard of workmanship, durability and of the same price (if not cheaper) as those manufactured by established Makers in foreign countries. The requisite standard of efficiency can, however, be attained either by gradual improvements through the experience gained in course of manufacture—generally a very slow and frequently a very costly process—or by drawing on the experience of specialists who have already acquired the necessary technique. We consider that there is no other alternative available than immediately to engage the services of foreign experts of repute and standing in their own branches of the trade. Their services need not be engaged on a permanent basis. They need not be recruited for more than five years. The high remuneration demanded in consequence should be preferable as it will be cheaper to all concerned in the long run. It should also be specifically mentioned in the terms of the Contract that the experts selected will not only have to train up Indians attached to them but will give whole-hearted assistance to the manufacturers and raise their standard of production to the highest limits possible in the circumstances. Each of the high level experts engaged should have two/three Indians—with some experience of the same or allied technique attached to him for learning the job and for taking over charge when the short term contracts expire. The number attached should never be less than two in any case, preferably three/four to enable the Government to select at the end of the expert's contract the right person out of those trained. In fact as far as we can see there will be plenty of work for the three/four assistants attached to each expert if the Machine Tool Industry develops on the lines we expect. The large salaries to be paid to foreign experts should not be grudged as it will only be a short term expenditure and is expected to yield rich dividends in the long run if the right type of person is selected. We suggest that the experts should be headquartered at Delhi under the supervision and guidance of the Development Officer (Tools). They will have to visit the various factories already established in the country and make suitable suggestions to the manufacturers in regard to the improvements necessary for raising their standard and efficiency of production. These experts will be expected not to make reports to the Government as to what should be done but to get it done in the factories visited. This objective would necessitate halts for days at the factories. The only periodical reports to be made to the Machine Tool Controller will be on the suggestions carried out. The Assistants attached to these experts will sometimes have to be left behind at selected places of manufacture to ensure that the methods suggested are not lost sight of and become a permanent feature of production. We consider a period of five years would be quite ample to introduce upto-date processes and methods of production in the factories already established or to be established. We realise that as these experts will be very expensive, their number should on the ground of economy be kept down to the minimum possible in the circumstances. We have therefore recommended the engagement of only such experts as have been considered to be indispensable for achieving the object in view.

We find that the quality of machine tools now manufactured in foreign countries have improved considerably during the last quarter of a century mostly as a result of the attention paid to improvement in the technique of:—

- (a) Casting and Seasoning
- (b) Heat Treatment ;

(c) machining of components ;

(d) evolution of the most suitable machines for the production of tools and their most economic utilisation.

Indian Manufacturers will have to concentrate on all the four items mentioned above if they have to produce machine tools of a standard superior or at least in no way inferior to that of the imported articles. Their castings will have to acquire proper brinell hardness and will have to be sufficiently seasoned. Some of the parts will have to be specially heat treated. The manufacturer will also have to select the right type of machines and make the most economic utilisation of the equipment obtained.

Unfortunately the indigenous machine tool manufacturers have not sufficient financial resources to engage individually the services of high ranking specialists in these lines. Their outturn is also not sufficient to justify the expenditure involved even if they could spare the necessary finance for it. The employment of these specialists on a co-operative basis by the Industry itself is also not practicable for the manufacturing factories are situated at places far remote from one another and have not developed that community of outlook and interest which alone can make a success of the appointments of these specialists on a co-operative basis. It appears to us in these circumstances that if this Industry is to expand on right lines, employment of the following specialists by the Government appears to be the only feasible solution of the difficulty. The Panel recommends therefore that the four experts mentioned below may be engaged for a period of three years which may be extended to five years if found to be necessary at the end of three years and that it should be definitely stipulated in their terms of contract that they will have to train the Indian assistants attached to them in the technique of the profession and will also develop the right technique in the factories which they are asked to assist. The services of these experts will be very useful to a number of other industries also. They are therefore likely to remain more than fully occupied during their period of employment and will enable India to get over many of the initial troubles in improving the technique of workmanship in the Industries concerned :—

(a) a high level expert in casting and seasoning ;

(b) a high level expert in metallurgy and heat treatment required for the machine tool industry ;

(c) a high level expert in applying correct methods of machining and fabricating the component parts;

(d) a high level expert in efficient utilisation of the equipment provided (Production Engineer).

(8) *Lending Services of German Technicians to the Machine Tool Industry.*
—The Panel has noted with satisfaction that the Government of India intend to import from Germany, technicians and skilled Artisans with specialised knowledge and experience of the processes involved in various industries, if persons with similar qualification and experience are not available from elsewhere. In the opinion of the Panel, this would be a very wise move and would greatly benefit all the new Industries in general and the Machine Tool Industry in particular. The Panel recommends therefore that in order to save time the Machine Tools Development Officer should be asked to collect

requisitions for such technicians from the machine tool manufacturers in the country with whom he is already in close contact and arrange through the proper channel for very early import of such technicians. It is a matter of special urgency to the Industry and will have an important hearing on its future development as well.

(9) *Foreign Training to Indians for further Development of Machine Tool Industry in the Country.*—(a) In times of emergency when foreign sources of supply are cut off, machine tools become the main bottleneck. If they cannot be produced in the country the industrial, potential and consequently the Defence Effort is considerably reduced. It is therefore essential that India should become self supporting in regard to the supply of machine tools at least for her own requirements in as short a time as possible. To achieve this ideal, the technical knowledge and experience available in the country are very inadequate and will have to be considerably improved. Indians will have to be sent abroad to acquire the requisite knowledge and experience of machine tool manufacture in countries where the technique of manufacture has been specially improved.

(b) The existing practice of sending students fresh from college or high schools to foreign countries for technical training is extremely wasteful. It will have to be radically changed if it is adequately and satisfactorily to meet the requirements of the machine tool industry for, majority of the students now being sent for technical training in foreign countries have to waste a considerable portion of their training period in acquiring elementary knowledge and rudiments of the technique already available in the country and which students could learn at much less expense and in comparatively more wholesome environments. There does not appear to be any point in detaching from his country and the society a young man in the most impressionable period of his life when his judgement has not yet ripened simply for the sake of training him in the elements of the profession available in the country and in addition spend about Rs. 250 per mensem on him.

(c) Candidates selected for specialised training in the manufacture of machine tools should therefore be made to spend at least the first two years in India and acquire the rudiments of the profession in some of the important machine tool manufacturing workshops in the country before proceeding abroad. They will be much better qualified than students from college to assimilate the latest methods and practices in vogue and will do so in a much shorter time. Such an arrangement would also reduce the cost of training students and enable more trainees being sent out for the amount available.

(d) In addition to providing facilities to students selected for such training, the Government should also secure through its representatives—Trade Commissioners or His Majesty's Consular Services—facilities for (1) experienced technicians in this branch to visit foreign countries and to specialise in the branches of the Trade in which they are interested and (2) contacts for the topman in the Trade with Machine Tool Manufacturing Shops in foreign countries. The Panel realises the difficulties in securing such contacts and facilities for the students, supervisory and managerial staff as some of the foreign firms would naturally be disinclined to impart the knowledge or to give information which may create successful competition for their products in India. It cannot be ignored however that in spite of the progress made in the country, India will have to import a very large number of machine tools in the postwar period. The business offering will be a very good inducement to many of the leading manufacturers in America and England

to provide the facilities required. If the firms come to know that a refusal of these facilities might mean loss of good business they will think twice before turning down such requests. In prewar years one of the main conditions for the placing of orders by the Government of Japan used to be an undertaking by the Suppliers that they would in return train a number of Japanese students. India may not be able to insist on such a stipulation for the next year or two but should embody it as a part of its general policy as soon as she is in a position to do so.

(e) In short our recommendation is :—

- (i) that candidates for technical training in the manufacture of machine tools should either be selected out of persons who have acquired some knowledge and experience of the profession ; or given preliminary training in Indian Workshops before their departure if they happen to be fresh from college ;
- (ii) facilities should be provided for experienced supervisory staff from the Factories already established in the country to learn in foreign countries the latest technique and practice of the profession ;
- (iii) facilities should be provided for the managerial staff to visit important machine tool shops in foreign countries and for contacts with their management ;
- (iv) machine tool industry should be given appreciable quota out of the Scholarships sanctioned for technical training abroad.

(10) *Supply of Raw Material.*—The Panel's attention has been repeatedly drawn to the pressing question of higher price of many of the basic raw materials which the machine and small tool manufacturers in India are obliged to pay as compared with the rates charged from manufacturers of similar articles in U.K. The following are some of the essential raw materials needed by the Industry. Some of these are of indigenous make but more costly while others have to be imported at a much higher price and unduly raise the price of the finished article.

- (1) Pig Iron.
- (2) Special alloy steel.
- (3) High Speed Tool steel.
- (4) Nonferrous metals such as Gun metal and white metal.

N.B.—Gun and white metal are being manufactured in India at a higher cost on account of high price charged by Government for the basic metals like copper, zinc, lead etc.

Representations were made to the Panel that many of the small tool manufacturers in U. K. are manufacturers of special steel and have been marketing their raw materials and finished goods under a Syndicate. The price of this class of steel has been so regulated as to make it uneconomical for the Indian Manufacturers to produce small tools from the steel purchased from this source. Before the last war, it was possible for the small tool manufacturers in India to obtain special steel at cheap rates from other sources and thus compete successfully with the manufacturers of machine tools in the Syndicate. During the War requirements of small tools in-

increased all round and a large capacity for the manufacture of small tools has been as mentioned before, developed in India. If manufacturers are to supply small tools at a reasonable rate it is essential that high speed steel required should be made available to the Industry out of Government stocks at a price comparable with that paid by the U. K. manufacturers to the Syrdicate.

According to the information placed before the Panel by the Small Tool Manufacturers Association, high speed steel is available in large quantities in the surplus Government stocks. The Panel considers that it would be in the interest of the Country and Government if this steel is released to the small tool manufacturers at the same price as is charged in U. K. from small tool manufacturers in the Syrdicate so that they could produce small tools at a reasonable price compared with that of the imported articles from U. K. As a long term policy the Panel recommends that the Government should actively encourage the manufacture of high speed steel in the country, for, as long as it is not achieved, India will have to depend on supplies of high steel from foreign countries and will be greatly handicapped on occasions when foreign supplies are stopped, curtailed or become more expensive.

(11) *Surplus Machine Tools for Indigenous Machine Tool Industry.*—The machine tool Industry in India is urgently in need of certain types and classes of machine tools for expansion of its factories. Some of the machines are reported to be available in Army surplus stores and it would be of great assistance to the Industry if it could be given special facilities for the purchase of such machines. The Government of India plan for the disposal of machine tools lays down the following priorities for the buyers :—

- (a) Central Government Departments ;
- (b) Provincial Government Departments and Indian States ;
- (c) Public Bodies; and
- (d) Others.

The machine tool industry in India as a buyer of surplus machine tools will therefore fall under the category "Others" and as such will not get any preference over other buyers under this category. The Panel considers that the needs of the machine tool industry should have preference over other buyers [item (d)] and therefore strongly recommends that, other things being equal, the industry as a buyer should get priority over buyers mentioned in (a), (b) and (c) above.

(12) *Depreciation Allowance for Income Tax purposes—Increase of.*—

(a) It has been represented to the Panel that the present rate of depreciation for income tax purposes allowed to the machine and small tool manufacturers is inadequate taking into consideration the heavy work done during the war period with new workmen.

(b) There is also the consideration that some of the machine tool manufacturers in India switched on to this Industry as a result of the Machine Tool Controller's persuasion and promise of assistance by Government in peace time. Had such factories been allowed to continue their normal work, they would have made larger profits during the war with less depreciation of their capital equipment, for the workmen were used to the work.

(c) The Indian machine tool and small tool factories had to work continuously during the period of war and in many cases they had to work even multiple shifts with persons not used to making machine tools. This factor has abnormally reduced the life of the machines installed.

(d) It is reported that in the U.K. the Government are assisting the machine tool industry by (a) refund of E.P.T. and (b) by allowing a higher rate of depreciation allowance than in normal times for income tax purposes.

(e) After careful consideration of the circumstances in which and the great cause for which the indigenous machine tool manufacturers worked in war time, the Panel recommends that concessions not less than those given in the U. K. should be allowed to the indigenous machine and small tool Manufacturers.

(f) The present rate of depreciation allowance in India is 10% for single shift and 15% for multiple shifts. The Panel considers that taking into consideration all the conditions in which the plants had to work, 15% for single shifts and 22.5% for multiple shifts would not be an unreasonable figure to work to from the date the factory commenced war work, if the practice in England is not to be followed.

(g) In recommending the revised rates the Panel has been guided by the consideration that extra expenditures will have to be incurred for repairs and for the purchase of fresh plant and machinery which would normally have not been necessary had the Factories not been employed on special war work.

CHAPTER VI

1. *Assistance required from local Governments in the Development of Machine Tool Industries in provinces.*—We have suggested in previous Chapters what should be done by the Central Government and the manufacturers themselves to place the machine tool industry on a sound basis. There is however a third party in the picture—the local Governments, who could materially assist in the development of this industry in their respective provinces particularly as a Cottage Industry. We are led to emphasise the part they can play as this Industry is one in which freight on the raw material to be procured forms a very small portion of the price of the finished article. In fact, the places where this industry has been established were selected more from the point of view of convenience of the Management than from any other consideration. There is in these circumstances no reason why the manufacture of machine tools could not be taken up at all centres of Industry and Agriculture in the country if the requisite assistance and encouragement are forthcoming from local Governments. There will be a ready market for the tools produced and they would be able to compete successfully—on account of the proximity of the market in comparison with that of machine tools imported from long distances. Such a development would considerably increase the industrial potential of the country as well and should therefore be encouraged by local Governments.

2. The history of development of machine tool industry in Batala in the Punjab is a case in point. About sixtyfive years back there was no industry there. A retired Tahsildar started making cast iron sugarcane crushers in a small Workshop. It was a successful enterprise. A number of other people started doing the same with the result that practically every important house owner in Batala has today a small Workshop of his own in which he is producing some kind of implement in partnership or in association with his co-workers. If Batala has not been able to make greater progress it is because those uneducated manufacturers have been left to their own resources and have had very little technical advice, guidance or assistance from the Governments except during the War time when special

technicians were deputed to improve the general standard of manufacture. But even during this period the amount of assistance received by these small scale manufacturers was very small. We find that in point of practical knowledge or what could be accomplished with the naked eye these workmen are a marvel—at least in no way inferior to those trained in the most up to date workshops in India. Some of them have developed an uncanny instinct for doing the right thing but what they need most is knowledge of the present day technique of workmanship and of the correct specification of the raw materials to be used. They are also seriously short of measuring instruments without which no machine tool of proper alignment or durability could be manufactured.

3. We have already recommended the appointment of specialists in four important branches of the Machine Tool Industry and have also suggested the training of three/four Indians under each of the experts to be appointed. We would strongly urge on the Government of the Punjab to train a few Inspectors in the manufacture of machine tools under the guidance of the Development Officer (Machine Tools) and to post them in places in the Province like Batala where the Industry has already been developed or is likely to be developed on a Cottage Industry basis. These Inspectors should work under the Provincial Directors of Industries and should look up to them for promotion only on the results achieved, i.e., the extent to which they succeed not only in the development of the Industry in the centres of population entrusted to them but also on raising the standard of manufacture. These Inspectors will be educated people and could also act as useful advisers and general guides to the small tool manufacturers in regard to efficient procurement of raw material of the right type and to processing it to the right standard.

(4) In other Provinces where this Industry has so far not made much headway, the Local Government should earnestly consider this question and appoint Development Inspectors to establish this Industry under the aegis of their respective Directors of Industries. Machine Tools are needed in every Province and if interest is taken by Local Governments in the development of their manufacture, there is no reason why their efforts should not succeed for the demand is there and some knowledge of manufacture is also available in the country. We therefore invite the attention of the Local Governments to a special consideration of this aspect of the question.

(5) There is another way in which the Local Governments can substantially assist the Machine Tool Industry already established or likely to be established in their Provinces. Majority of them utilise the Land Acquisition Act for acquiring Land for big industrial enterprises but we came across a number of instances in which the facility was not afforded to small enterprises. In fact, we found that in one or two cases in which the small industrialist had already established his factory, he was prevented from carrying out further expansion over an adjacent plot of land as the owner started demanding fabulously prohibitive prices for it. We suggest that the Local Governments should in such cases come to the rescue of the manufacturer and do what they can to secure for him the land required.

(6) Practically all provinces have some sort of Mechanical Engineering Schools. We recommend that the students who wish to take up the study of manufacture of machine tools should be encouraged, and given facilities for studying this Branch after completing their courses of study in these schools. We are also of the opinion that students who wish to take up the study of

machine tool manufacture should be encouraged during their vacations to work in the Machine Tool Manufacturing Shops already established in the country and that the Local Governments should use their influence in obtaining such facilities for these students.

13. (a) *Machine Tool Manufacture as Cottage Industry.*—In some parts of the Punjab, manufacture of simple machine tools has been fairly well developed on a cottage industry basis. These tools are usually manufactured in small shops run by the head of the family. His co-workers are generally his near relations. Unfortunately the direction and control still remains in the hands of persons who though skilled enough are lacking in technical knowledge with the result that their products do not come up to the proper standards of design, material and performance.

(b) During the War, conditions, were abnormal. Supply was the first consideration and quality had frequently to be sacrificed. The output of these small shops found a ready market and resulted in considerable expansion of this Cottage Industry. With the return of normal peacetime conditions quality of the product has become an important consideration. Consequently this Cottage Industry is bound to receive a serious setback if it is not able to produce machine tools of the required standard. We are convinced that this Cottage Industry as run at present will not be able to survive, much less thrive, unless proper technical assistance and guidance are immediately forthcoming. It has been represented to us and we agree with this view, that this Cottage Industry is capable, if properly organised, of playing an important part in the industrial economy of the province or at least in these parts of the province where it has developed. We cannot too strongly emphasize that the technical assistance and guidance required by the Cottage Industry should be provided by the Local Government to enable it to produce the machine tools or their components to the acceptable standard. We are also of the opinion that apart from the sale of its products direct to the consumer, this Cottage Industry can become a valuable adjunct to large machine tool factories by supplying some of the components required and thus saving the large manufactures and capital expenditure involved in equipping their factory for the manufacture of some components. Technical ability to understand designs, read drawings, technical and commercial knowledge of materials to be employed, their sources of supply, information regarding standards and tolerance and the workmanship required are lacking in this Cottage Industry as run at present: they should be made available to the Industry in the most convenient method. The Panel is of the opinion that local Governments should provide for such assistance and guidance through suitably qualified and experienced Development Inspectors stationed in important centres of the Industry and entrusted with the following duties:

- (a) To offer advice and guidance in regard to the materials to be used for various components and the cheapest and the best methods for their procurement;
- (b) To train workmen to draw and to read drawings;
- (c) To advise and guide in regard to the tolerances to be worked to and the correct methods of manufacture;
- (d) To give any other advice or assistance likely to be helpful to this Trade.

APPENDIX A

D. O. No. P-I(9)/44

GOVERNMENT OF INDIA

DEPARTMENT OF PLANNING AND DEVELOPMENT

SECRETARIAT, NORTH BLOCK,
New Delhi, the 1st March, 1945.

DEAR SIR,

I am directed to state that the Government of India have decided to constitute a number of Industrial Panels to consider and make recommendation to them regarding the development of industries, both existing and new. The recommendations are expected to be so framed as to enable the Government to prepare a detailed phased plan for the 5 years following the cessation of hostilities as the first stage of a 15 years plan of industrial development for the whole country. Factual information would be prepared and supplied, as far as possible, by the Secretaries to the panels and a detailed directive will be issued to each panel indicating the procedure to be followed and the points on which recommendations should be made.

2. One of the panels will be on Machine Tools. The Government of India have decided that you should be invited to be a member of the panel. It is proposed that the panel should consist of the following.

Sir Lakshmipathi Misra, (Chairman),
Sir Dhunjishah Cooper,
Mr. J. Hodkinson,
Dr. Seth,
Mr. Latif,
K. B., A. G. Khan,

and one of the Deputy Industrial Advisers will be Secretary to the Panel.

3. The Government of India will be very glad if you will agree to serve on the panel in the capacity indicated and assist them in preparing a comprehensive plan for the development of the industry. I shall be grateful for an early intimation of your concurrence.

Yours sincerely,

Sd./ (T. M. S. MANI).

Copy to :—

(1) Industrial Adviser,	} with the request that Mr. J. Hodkinson and K. B., A. G. Khan may be asked to serve on the Committee.
(2) Supply Department,	
(3) War Department,	

Sd./ (T. M. S. MANI),

Deputy Secretary to the Government of India.

Issued to :—

- (1) Latif, Esq., Batala Engineering Co., Ltd., Trunk Road, Batala
- (2) Dr. Seth, Indian Sewing Machine Manufacturing Co., 210, Ferozpur Road, Lahore.
- (3) Sir Dhunjishah Cooper,
Cooper Engineering Works, Satara.

Copy to Railway Department (Railway Board) with the request that Sir Lakshmi pathy Misra may be asked to serve to the Committee. (H. M. War Transport has agreed to Sir Misra's serving on the panel).

Sd./ (T. M. S. MANI),

The 6th March 1946.

Deputy Secretary to the Government of India

APPENDIX A DEPARTMENT OF PLANNING AND DEVELOPMENT

General Directive to Industrial Panel

It is the function of panels to make recommendations to Government regarding the development of Industries, both existing and new. These recommendations should be so framed as to enable Government to prepare a detailed phased plan for the five years following cessation of hostilities, as the first stage of a 15 year plan of industrial development for the whole country.

2. In order to assist them to formulate recommendations, panels will be supplied, as far as possible, with factual information prepared by the panel secretaries. In the case of new industries, the information will consist of a general survey of the industry and the importance of starting it in India, the availability of raw material, the power requirements, the demands of the Indian markets and the probabilities of exports. In the case of existing industries the information will naturally be more comprehensive; it will indicate, in addition, the location of existing units, the types of goods produced, the total production under each category and the assistance, if any, given by Government. These items are to be regarded as illustrative and not exhaustive.

Government will give each panel, as a basis, for discussion, the provisional target to be aimed at in the first five-year period and, wherever possible of the target to be reached in 15 years.

3. The recommendations of the panels should cover the following points :—

(1) The scope and extent of development, including the type of products recommended.

(1A) The estimated requirements of capital goods together with such details of those requirements as may be available in India and how much should be imported from abroad.

(2) Whether the industry should be under Government ownership either on grounds of national interest or because private capital is unlikely to take it up, and if so, whether it should be wholly or partly managed by Government.

(3) In the case of industries to be developed other than under State ownership, the capital required for such development, whether the whole of it is likely to be available by public investment and, if not, the extent to which Government assistance may be required.

(4) The extent to which technical advice from abroad may be necessary.

(4A) The availability and the future requirements of technical personnel so as to obtain a clearer indication of the present short-comings and future needs.

(5) The manner and the degree of co-operation with foreign firms considered necessary and desirable, both as regards capital and management.

(6) The location of the industry.

(7) The nature of the assistance required from Government in the form of protective duties, bounties, research grant, expert advice, etc.

(7A) The relative incidence of the import duty on the finished goods in comparison with the duty on the raw materials from which they can be manufactured.

(8) If the industry is to be under private ownership and management what controls, if any should be exercised by Government.

(9) What should be the organisation of the different units of the industry, e.g., should there be an industrial association? Would a cartel be desirable?

(10) The stages by which the industry should be developed.

(11) Should the industry cater for the export market?

(12) Should the industry be developed, as in Japan, on the cottage industry basis and, if so, to what extent?

4. Although, as stated above, the panels may recommend the grant of protection, it will not be their function to consider broad questions of international trade and commercial policy.

5. Joint meetings of the panels should be held, wherever necessary to secure co-ordination particularly where the processes and the products of one industry are connected with those of another.

6. Some of the panels have been drawn broadly and it may be necessary to co-opt members for dealing with specific branches of the industry. Members may be co-opted by the Chairman in consultation with the Industrial Adviser.

7. Before submitting recommendations, panels should consult Provincial Industrial Committees, particularly in the matter of location of industry. They should also, where the circumstances of the case require it, consult Industrial Committees in States or State Governments/Durbars. The recommendations should be submitted to Government through the Industrial Adviser.

No. F-35(1)/45
 GOVERNMENT OF INDIA
 DEPARTMENT OF PLANNING AND DEVELOPMENT

OFFICE OF THE INDUSTRIAL ADVISER

New Delhi, the 3rd April, 1945.

FROM

H. K. Kirpalani, Esq., C.I.E.,
 Industrial Adviser.

TO

All members of Industrial Panels.
 All Secretaries of Panels.

SUBJECT :—General directive to Industrial Panels.

SIR,

I am directed to invite reference to P. & D. Department circular letter enclosing a copy of the general directive for the information of all members of the Panels, and to say that it is desirable that each Panel should in addition to the recommendations covered by the general directive, estimate and report on the capital goods requirements of the industries with which it is concerned together with such details of those requirements as may be available. The Panels are also requested to indicate how much of the estimated requirements can be obtained in India and how much should be imported from abroad. It is hoped that you will give this matter your consideration.

I have the honour to be,
 etc.,

H. K. KIRPALANI,
Industrial Adviser

GOVERNMENT OF INDIA
 DEPARTMENT OF PLANNING AND DEVELOPMENT
 OFFICE OF THE INDUSTRIAL ADVISER

New Delhi, the 12th April 1945.

FROM

H. K. Kirpalani Esq., C.I.E.,
 Industrial Adviser to the Government of India.

TO

All Members of Industrial Panels.

SUBJECT :—Incidence of import Duty.

SIR,

In continuation of this office letter No. F. 35(1)/45/LA dated the 3rd April 1945, I am directed to say that the question of the relative incidence of import duty on finished goods and the raw materials from which they could be manufactured, has been brought to the notice of the Government

of India. The case of import duty on raw materials from the U. K. for the manufacture of textile stores and machinery (thirty per cent) and on the finished goods (twelve and a half per cent) has been cited as an example. In this case however the Government of India had deliberately reduced the import duty on finished machinery several years ago in order to encourage the development of the Textile Industry, and there was then no possibility of India being able to manufacture textile stores and machinery. Now that steps are being taken to develop the manufacture of machinery in this country it is necessary to review the relative incidence of the import duty on the finished goods in comparison with the duty on the raw materials from which they could be manufactured. It is therefore requested that the Panels may examine the case in respect of the items coming under their purview, and have their views recorded in the respective reports.

I have, etc.,
H. K. KIRPALANI,
Industrial Adviser.

No. F. 35(1)/45-1A.

GOVERNMENT OF INDIA
 DEPARTMENT OF PLANNING AND DEVELOPMENT
 OFFICE OF THE INDUSTRIAL ADVISER,

New Delhi, the 12th November, 1945

FROM

H. K. Kirpalani, Esq., C.I.E.
 Industrial Adviser to the Government of India.

TO

All Members of Industrial Panels.

SUBJECT :—General Directive to Industrial Panels.

SIR,

I am directed to invite your attention to items 7 and 7A of para. 3 of the General Directive to Industrial Panels and to enclose herewith explanatory instructions relating thereto for information and guidance.

I have the honour to be,
 Sir,
 Your most obedient servant,
H. K. KIRPALANI,
Industrial Adviser.

Copy forwarded for information to :—

- (1) All Secretaries to Panels.
- (2) The Planning and Development Department with reference to their U. O. No. P-1(38)/45, dated the 8th November 1945.

By order etc.,
V. S. Krishnaswamy,
for Industrial Adviser.

Explanatory instructions on the General Directive to Industrial Panels
(Items 7 and 7A of Para. 3).

One of the points on which panels are expected to make recommendations is the nature of the assistance required from Government in the form of protective duties, bounties, research grants, etc. The question has been raised whether this item calls for a detailed investigation by panels on the degree of protection required and recommendations thereon. What is required from the panel is only a broad indication that protection would or would not be required by an industry and not detailed recommendations which should be left to the Tariff Board to determine. It would not, therefore, be necessary for panels to investigate the costing of individual firms or to make any other elaborate investigation of the conditions of particular firms for the purpose but to base their recommendations on the broad facts of the industries with which they are concerned.

The relative incidence of import duty on finished goods in comparison with the duty on the raw materials from which they can be manufactured is another point on which panels have to make recommendations. So far as this point is concerned Government merely expects that where the panels consider that the relative incidence of import duty on finished goods and their raw material is hampering or likely to hamper Indian industry, they will recommend that the matter be examined by Government. The panels need not themselves examine and make precise recommendations on what rates of import duties might be levied.

APPENDIX B

MACHINE TOOL CONTROL ORDER

New Delhi, the 15th February, 1941.

No. 38—In exercise of the powers conferred by sub-rule (2) of rule 81 of the Defence of India Rules, the Central Government is pleased to make the following order :—

MACHINE TOOL CONTROL ORDER, 1941

1. *Short title, extent and commencement.*—
 - (1) This order may be called the Machine Tool Control Order 1941.
 - (2) It extends to the whole of British India.
 - (3) It shall come into force on the first day of March, 1941.
2. *Definitions.*—In this Order, unless there is something repugnant in the subject or context :—
 - (a) "Machine Tool" includes any mechanical contrivance for cutting, forming, abrading, polishing, or otherwise working or treating wood or metal or plastic materials, such as Bakelite, any standard equipment usually sold therewith, and any machinery ancillary to the operation thereof ;
 - (b) "Machine Tool Controller" means any officer appointed by the Central Government to exercise all or any of the powers of the Machine Tool Controller under this Order ;

(c) "Scheduled Machine Tool" means a machine tool entered in the schedule to this order.

3. *Licensing of import, production, and sale of scheduled Machine Tools:*

(1) No person shall be engaged in—

(a) the import into British India from any place outside India or

(b) the production;

of any scheduled machine tool or any component part thereof—except under and in accordance with a licence granted by the Machine Tool Controller.

(2) Licences for the production of Scheduled machine Tools shall be in Form A appended to this order, and licences for the import of Scheduled Machine Tools shall be in such forms as the Machine Tool Controller may from time to time determine.

(3) The Machine Tool Controller may, for reasons to be recorded in writing, cancel any licence granted under this clause.

(4) No licence for import or production of any machine tool shall be granted except under the condition that the Machine intended to be imported or produced in India shall be marked conspicuously and indelibly in English with the name of the firm manufacturing the machine tool and with the serial or stock reference number of machine tools produced by that firm.

4. *Inspection of premises.*—The Machine Tool Controller, or any officer authorised by him in writing in this behalf may enter upon and inspect any premises in which machine tools are or are reasonably believed to be produced, kept for sale, sold or used.

5. *Supply of Accounts and other information* Every person engaged in the import, production, sale or use of machine tools shall:—

(a) keep such books, accounts or other records relating to his undertaking as the Machine Tool Controller may direct;

(b) produce to the Machine Tool Controller or other officer authorised by him in writing in this behalf, such books, accounts or other records relating to his undertaking as may be demanded by the Machine Tool Controller or other officer as aforesaid

(c) furnish to the Machine Tool Controller such estimates, returns and other information as the Machine Tool Controller may require;

(d) permit the Machine Tool Controller or any officer authorised by him in writing in this behalf, to enter upon and inspect any premises used for, or in connection with, his undertaking.

6. Any Court trying a contravention of this Order may, without prejudice to any other sentence which it may pass direct that Machine Tools in respect of which the Court is satisfied that the order has been contravened shall be forfeited to His Majesty.

" FORM A "

Serial Number-----

Date -----

Licence to produce SCHEDULED MACHINE TOOLS

(Free of all fee)

-----is/are* hereby licensed to produce
 the following scheduled machine tools:—

DESCRIPTION	NUMBER WHICH MAY BE PRODUCED
-------------	------------------------------

2. The premises of the licensee shall be located at the following *place/
 places.

3. This licence is granted subject to the provisions of the MACHINE
 TOOL CONTROL ORDER, 1941.

4. The validity of this licence expires on-----

5. The licensee shall comply with any directions given by the Machine
 Tool Controller as to the types, number and design of the scheduled machine
 tools to be produced from time to time.

(Signed)

Machine Tool Controller.

*Strikeout words which are inapplicable.

THE SCHEDULE

All Machine Tools of the following types including any standard equipment or ancillary machinery usually supplied therewith:—

Section One—

Milling
 Diesinking
 Engraving
 Keyseating
 Broaching
 Oil Grooving
 Splining
 Profile Slotting
 Marking

Section Two—

Metal Cutting
 Cold Saws Hack Saw Machines
 Filing and Sawing
 Band Saw Machines
 Cutting off (Tool & Abrasive)

Section Three—

Testing Machines for Mechanical Workshop and Engineering Laboratory use.

Section Four—

Grinding (excluding small electrical bench and Portable grinders up to 10" wheels and Pneumatic Grinders)
 Honing
 Polishing
 Lapping

Section Five—

Drilling (other than portable electric or portable pneumatic).

Section Six—

Constant and Turret Lathes

Section Seven—

Lathes-General

Section Eight—

Furnaces, electrical, coal, coke, Gas, or oil fired.

Section Nine—

Forging
 Power Hammers
 Drop Stamps
 Riveting (other than portable hand riveters)

Section Ten—

Wire drawing and forming
 Rolling Mills (other than jewellers)
 Bar Reeling
 Bar Turning

Section Eleven—

Thread forming, cutting, rolling or milling

Section Twelve—

Moulding Machines and other machines, foundry use
 Die Casting Machines
 Magnetic Separators

Section Thirteen—

Hydraulic Presses and other machinery for the production of plastic blocks and plastic mouldings (such as Bakelite and other cellulose products)

Section Fourteen—

Sheet Metal Working Machinery (other than and powertypes) including Shears, Punches, Presses, Benders, Brakes, Guillotines Plate Straighteners and Rollers.

Section Fifteen—

Automatic Bar and Chucking
 Machines, single and multiple spindle.

Section Sixteen—

Gear Cutting

Section Seventeen—

Shaping
 Slotting
 Planing

Section Eighteen—

Vertical Boring and Turning Mills
 Horizontal Boring
 Jig Boring.

Section Nineteen—

Special and Standard machines particularly used in Railway Workshops, but not otherwise specified.

Section Twenty—

Oxygen Cutting

Oxy-acetylene Generating
 Plant for welding and cutting
 Electric Welding

Section Twenty-one—

Wood-working machinery other than hand worked or small "Rome
 craft" types.

Section Twenty-two—

Lathe Chucks
 Magnetic Chucks (Electric & Non-Electric)
 Drill Chucks
 Rotary Tables
 Dividing Heads
 Tool Post Grinders
 Milling and Indexing attachments
 Machine Vices.

Section Twenty-three—

Synthetic Graphite and Amorphous
 Carbon Electrodes as used in Electric
 Furnaces for production of Iron Steel
 Ferro-Alloys and non-ferrous metals
 Synthetic Graphite and Amorphous Carbon Electrodes for use in Elec-
 trilytic Processes.
 Carbon Furnace Liner Blocks for use in Electric Furnaces for the Elec-
 tion of Ferro-Alloys.

APPENDIX C

QUESTIONNAIRE

1. What types and sizes of machine tools are now manufactured by your Company?
2. Total production per annum in numbers and value of each of the principal machine tool products of your company,
 - (a) in the year 1937,
 - (b) during the war period (1939-1944)
 - (c) in any other year which the industry considers typical.
3. (a) Location of the factory.
 - (b) The year in which it was established.
 - (c) Please give a brief note of the early attempts made in the manufacture of machine tools, the difficulties encountered and the extent of success achieved.
 - (d) Is the industry localised in one or more regions and if so, are there any special reasons for it?
 - (e) Are there any particular regions where the industry could be suitably localised, taking into consideration the proximity to markets, availability of raw materials, power, labour, etc?
4. Raw materials required for the manufacture of different products including different kinds of steels, ferrous and non-ferrous metals, cutting tools and other ancillary equipment:—
 - (a) Approximate quantities of each kind and type of material used per annum. Clearly indicate against each item, the country of origin and the address of the suppliers.
 - (b) Do you experience any difficulties in obtaining your raw materials? If so, the best method of overcoming them may be stated.
 - (c) Are the present facilities for transportation of raw materials to your factory adequate?
5. Plant and Equipment now employed:—
 - (a) Please give a list of machinery installed in your factory and indicate how many of them are very old, how many are old but fairly in good working order and how many are new.
 - (b) What is the present condition of the plant?
 - (c) Additions and alterations to plant contemplated.
 - (d) Is any difficulty experienced in the upkeep and maintenance of your plant?
6. Labour conditions:—
 - (a) What is the strength of skilled and unskilled labour employed in your factory?
 - (b) What is the strength of supervisory staff employed? How many of them have received specialised training and where they have been trained?

- (c) Do you need any assistance from Government for providing technical experts to advise you regarding the process of manufacture and training of your staff? if so, indicate the precise nature of assistance required.

7. Production and Sales Organisation :—

- (a) What is the post-war consumption of the main products of your factory in India?
- (b) How and where you market them?
- (c) Do you possess your own sales organisation or you employ other firms to sell your products?
- (d) Is there a reasonably constant demand in the market for your products?
- (e) The scope and extent of future developments you contemplate for your industry by way of increased production or for manufacture of other types of machinery not so far manufactured.

8 Please state if in your opinion, it is feasible to develop the manufacture of any basic component parts of your products such as castings and forgings, etc., from a central specialised source or sources, if so, how such manufacture to be organised?

9. (a) What is the amount of capital of your company and how much more do you contemplate to spend on immediate and future developments? What is the Capital expenditure incurred so far on land, buildings and machinery? Figures may please be shown separately against each item of expenditure.
- (b) What amount of foreign capital, if any, is now in vested in your company?
- (c) Are your future capital requirements likely to be met by public investment in India? If not, how do you propose to meet them?

10. Do you need any protection or assistance from Government at present? If so, the same may be specified.

Are you aware of any protection given by Governments in other countries to industries such as yours? If so, please furnish details.

11. Do you desire any Government control of your industry hereafter with a view to assist its general development?

12. Do you employ any expert technical advisers from abroad and will continue to need them here after?

13. In case the future development of your industry depends on technical advice, patents and plants from foreign firms, how do you propose to obtain them?

14. Would you welcome forming an association of indigenous manufacturers using similar raw materials or producing similar products as you own, with a view to have a planned production and marketing?

15. Do you consider it possible for certain types of machine tools to be built under licence with British or American firms which would enable Indian manufacturers to get expert guidance from parent concerns and produce articles to modern designs and of reliable quality?

16. Any other information for the guidance of the Panel will be appreciated.

APPENDIX D

LIST OF INDIGENOUS MANUFACTURING FIRMS VISITED BY THE MACHINE
TOOL INDUSTRIAL PANEL*Bombay Area.*

- (1) M/S Investa Machina Tool & Engineering Co. Ltd. Bombay
- (2) M/S Richardson & Cruddas, Byculla Ironworks, Bombay.
- (3) M/S Cooper Engineering Ltd., Satara Road, Bombay.
- (4) M/S Mysore Kirloskar Ltd., Harihar.

Calcutta Area.

- (1) M/S Britannia Engineering Co., Ltd., Titaghur, Calcutta
- (2) M/S Jessop & Co., Ltd., Dum Dum, Calcutta.
- (3) M/S Maya Engineering Works, Tollygunge, Calcutta.
- (4) M/S India Machinery Ltd., Dassnagar, Howrah.

Lahore Area.

- (1) M/S Indian Sewing Machine Mfg. Co., Lahore.
- (2) M/S Gangaram Hariram Co., Ltd., Lahore.
- (3) M/S Modern Machines Ltd., Lahore.
- (4) M/S Noon Engineering Works, Lahore.
- (5) M/S Oriental Machine Mfg. Co., Lahore.
- (6) M/S Batala Engineering Co., Ltd., Batala.
- (7) M/S Shadi Works, Ltd., Batala.
- (8) M/S England Foundry Works, Batala.
- (9) M/S Modern Machines, Batala.
- (10) M/S Nagina Foundry, Batala.
- (11) M/S Kaycee Industries Ltd., Lahore.

APPENDIX E.

PROCEEDINGS OF THE INFORMAL MEETING OF THE MACHINE TOOLS PANEL
HELD AT NEW DELHI ON THE 26TH & 27TH APRIL 1945.

A preliminary meeting of the Machine Tools Panel was held at New Delhi on the 26th and 27th April 1945 under the Chairmanship of Sir L. P. Misra. The following persons attended the meeting :—

Sir D. Cooper,

Cooper Engineering Works, Satara.

Mr. Seth,

Indian Sewing Machine Manufacturing Co. Ltd., Lahore.

Mr. J. Hodkinson,

Machine Tool Controller, Supply Department.

Mr. Krishna Swami,

Assistant to Industrial Adviser.

The other members of the Panel could not attend owing to illness or other reasons.

2. At the outset it was made clear that this meeting was exploratory and was convened mainly for the purpose of obtaining the preliminary views of the members on the prospects of the Machine Tools industry in India in the post-war period.

3. To begin with, Sir D. Cooper suggested that, while the goal of post-war planning should be that India should aim at self-sufficiency in the manufacture of machine tools, a start should be made immediately to collect complete data relating to the machine tools already manufactured in India (quantities and types names of manufacturers, etc.), and that the machine Tool Controller should be in a position to undertake this work immediately— as a supplement to Dr. Thomas's Report on "Metallurgical and Engineering Industries (Recent Developments)". As a preliminary to further discussion he also suggested that the Panel should start with definite targets for three periods ; for the first five years from the sixth to the tenth year and from the eleventh to the fifteenth year after the termination of the war.

4. Mr. Seth proposed that all the information now in possession of the Machine Tool Controller should be made available to the members of this Panel as early as possible. It was also suggested by the Chairman that arrangements should be made for supplying each member of this Panel with a copy of Dr. Thomas's Report.

5. It was suggested generally that Indian manufacturers should, for a few years after the war, concentrate on the manufacture of those machine tools which have been manufactured successfully in India. The question of the protection necessary for the industry by way of a duty on imported machine tools or by a corresponding subsidy or bounty was also discussed ; and it was arranged that the members of the Panel should consider the matter and put up their recommendations at the forthcoming meeting of the Panel to be held at Bombay on the 26th and 27th July 1945.

6. Mr. Hodgkinson stressed the need for the training of designers of machines and the education of labour ; and in the course of the discussions that followed, it was suggested that there would in due course be need for an Office forming part of the Government of India to advise the various industrialists proposing to manufacture machine tools in regard to the design of plant types of machine tools, etc. suitable for Indian conditions. Whether or not the present organisation of the Machine Tool Controller can be adapted and utilised later on as a central co-ordinating agency for post-war planning was also discussed. Mr. Hodgkinson promised to consider the matter and put up his proposals in due course.

7. The Machine Tool Controller undertook to prepare, for the information of the Panel, a preliminary report reviewing the pre-war manufacture of machine tools in India (by types and quantities) the production during the war period and the particular lines on which post war expansion is immediately practicable. The review would bring out inter alia the proportion of indigenous production to the imported machine tools prior to the war and during the war period.

8. Sir D. Cooper referred to the arrangements under which a few British manufacturers have of late been placing at the disposal of Indian manufacturers of machine tools their drawings and designs of machines and also expert advice as and when necessary ; and he suggested that this kind of co-opera-

tion extended at this juncture by British manufacturers has great possibilities which can help in the post-war expansion provided that full facilities are given by Government for the import of plant and machinery for the manufacture of machine tools. He promised to submit in due course his considered recommendations on this matter to the Chairman.

9. Sir D. Cooper stressed the fact that if the present Machine Tools industry is to survive after the war in the face of foreign competition, it is necessary as a first step for the Machine Tool Controller or other co-ordinating agency employed by Government to place bulk orders on Indian manufacturers for those types of machine tools which can be manufactured in India—so as to shut out, as far as possible, imports of those machine tools for which capacity already exists in India ; and he suggested that the Machine Tool Controller is the proper authority to prepare a complete list of machine tools (showing quantities and designs) which can keep the principal Indian manufacturers at their existing level of producing during say 1946-47. A suggestion was also made that Indian industrialists as well as Government Departments who require machine tools of a particular type are to be compelled to buy machine tools of indigenous manufacture whenever the Machine Tool Controller can direct them to Indian manufacturers producing that particular type (up to the requisite standard and specifications) and that the parties who refuse to buy Indian makes should not be granted licences for the import of machine tools of those types. It was also emphasized by Sir D. Cooper that the Indian manufacturers should be given bulk orders well in advance of the beginning of every accounting period. Sir D. Cooper promised to send a note to the Panel on this point and also as regards the minimum price at which Indian manufacturers can sell their machine tools in comparison with the imported machine tools—in the 5 year following the end of the war.

10. It was finally arranged.

(a) that a formal meeting of the Panel should be held at Bombay on the 26th and 27th July 1945. (The place and time of the meeting will be intimated to the members in due course)

(b) to invite to the meeting one or two representatives of:—

1. The Chamber of Commerce, Bombay.
2. The Indian Merchants Chamber of Commerce, Bombay.
3. The Maharashtra Chamber of Commerce, Bombay.
4. The Director of Industries, Government of Bombay.

(c) to invite separately the representatives of the principal Machine Tool Manufacturers at Bombay (e.g. the invests Machine Tools and Engineering Co. Ltd, Bombay; The New Standard Engineering Co. Bombay, etc.) and of some of the chief importers and also the head of the Machine Tool Controller organization of the Supply Department stationed at Bombay.

11. Finally it was decided to issue a brief press communique in the first week of May, 1945, inviting the attention of the public. Trade Associations, etc. to the forthcoming meeting of the Machine Tools Panel at Bombay on the 26th and 27th July 1945.

Minutes of the Second Meeting of the Machine Tools Panel held on the 26th & 27th July 1945 at Sudāma House, Ballard Estate, Bombay.

The following persons attended the meeting on the forenoon of 26th & 27th July, 1945:—

Sir L. P. Misra, Chairman.

Sir Dhanjishah B. Cooper,

Cooper Engineering Works, Satara,

Mr. S. L. Kirloskar,

Director, M/S Kirloskar Bros. Ltd., Kirloskarwadi.

Dr. Seth,

The India Sewing Machine Manufacturing Co. Lahore.

Mr. C. M. Latif,

M/S Batala Engineering Co. Batala (Punjab).

Mr. Hodkinson,

Machine Tool Controller, Supply Department.

Khan Bahadur A. G. Khan,

Chief Controller of Purchase (Munitions), Supply Department.

Mr. Innes,

Regional Inspector of Machine Tools, Bombay.

Mr. V. S. Krishnaswami,

Deputy Industrial Advisor, Department of Planning & Development.

The minutes of the preliminary meeting of the Panel held at New Delhi on the 26th & 27th April 1945 were confirmed.

26th July 1945 (forenoon)

The recommendations in Mr. Hodkinson's "Pamphlet on Machine Tools and the Post-war Industry" were first taken up for discussion. The Panel recorded its thanks to Mr. Hodkinson for his comprehensive pamphlet which was placed on the record of the meeting—as a starting point for further consideration and discussion.

It was explained at the outset by Mr. Hodkinson that, as the pamphlet was only meant to be a guide for further discussion, he did not include therein any recommendations regarding the casting processes required for the manufacture of machine tools. He held that, under the present conditions of manufacture in India the casting processes should, to begin with, be entrusted to the foundries which are separate from the factories making machine tools. He also pointed out that in U.S.A. and U. K. foundries do not generally form part of factories making machine tools.

There was general agreement in regard to the recommendations in Mr. Hodkinson's preliminary survey. The members had no comments to offer on the first portion of the pamphlet dealing mostly with factual data.

Training of labour.

In regard to the "Training of Labour" Mr. Hodkinson explained the difference between the British & American methods of apprentice training, namely, that while specialisation in operating a particular type of machine tool

(e.g. lathes) is the keynote of the American system, the practice in U.K. is generally to give allround training to the workmen so that most of the skilled workers are conversant with the working of different types of machine tools. Bearing in mind the present conditions in India the members were not in favour of specialisation on the American model but preferred to leave it to the manufacturers to train their own labour in the manner they like best.

Inspection of Machine Tools.

Mr. Hodgkinson suggested that the Machine Tool manufacturers should themselves be responsible for sticking to specifications and, that in addition, the Government may have their own Inspection staff wherever necessary. In the discussion that followed it was considered whether it is necessary to continue after the termination of the war the present system of grading of machine tools which has been a feature of war-time conditions. It was agreed generally that it would be in the interests of the experienced manufacturers who have already proved their worth in maintaining high standards of accuracy to continue to do so after the war.

Mr. Latif suggested that the manufacture of machine tools in India should be continued after the war by a few specified manufacturers approved by the Government of India and that inefficient producers should not be encouraged to continue the manufacture of machine tools. As regards the survival of the indifferent manufacturers who, during the war have not produced machine tools upto the requisite standard, it was considered that no special action is necessary on the part of Government to eliminate such manufacturers who; it was explained by the Chairman, would drop out in the normal course or change over to other lines of manufacture.

As regards the system of inspection now in vogue Khan Bahadur A. G. Khan explained that in addition to the manufacturers' own Inspection Staff the purchasers' inspectors are also entitled to carry out inspection of machine tools during manufacture and assembly and after completion of the assembly. There was general agreement on his suggestion that there should be full inspection of the product the choice being left to the purchaser to buy machine tools with the degree of tolerance that would suffice for his purposes.

Designs.

As regards designs of machine tools it was urged by Mr. Kirloskar that instead of trying to evolve new indigenous designs, the Indian Manufacturers should, for the present, copy intelligently the latest foreign designs available. The Members endorsed this objective as suitable for the first five-year period after the termination of the war. It was also suggested that Indian manufacturers should try to obtain by reasonable negotiations with foreign manufacturers—the original drawings of machine tools before attempting to copy the designs. It was stressed by Mr. Kirloskar that the manufacturers should have full freedom in this respect and that there should be no Government control or interference in regard to the copying of foreign designs.

The Chairman anticipated considerable difficulties in adopting Latif's suggestion that the Government of India should arrange with the foreign manufacturers that import will be allowed of those types of machine tools only which are not produced in India.

Standard and standardisation.

It was also considered, at the instance of Mr. Kirloskar, whether the standard designs of machine tools should be fixed with reference to the market demand or whether standard designs should be laid down by the Manufacturers' Associations. It was explained that the latter alternative permits of large scale production and the lowering of the cost of manufacture in the long run. The recent experience in the U.S.S.R. was quoted as an example. Mr. Kirloskar was requested by the Chairman to consider the proposal further and put up practicable proposals for standardisation with a view to mass-production at low costs.

Marketing and propaganda.

The Meeting endorsed Mr. Hodkinson's recommendation that the Government of India should institute a propaganda campaign in favour of Indian-made machine tools. The Members were not in favour of the Government purchasing the entire output and re-selling it to the market, nor were they in favour of reviving the system of Government placing "bulk-orders" on the Indian manufacturers which has already ceased. After reviewing the several systems of marketing in vogue (for example, Cement) the Meeting finally agreed that the manufacturers should build up their own agency for marketing supplemented by Government assistance in the shape of propaganda.

Sir D. B. Cooper's "Note on the manufacture of Machine Tools in India".

The Panel thanked Sir D. B. Cooper for his valuable "Note on the Manufacture of Machine Tools in India" which was placed on the record of the meeting as a basis for future consideration.

Arising out of Sir D. B. Cooper's note the Panel was of the opinion that for the development of the Machine Tools Industry a definite target for the post-war period should be fixed after taking all the aspects of the question into consideration including the release of machine tools from the Defence Services. They considered that for the first two years of the post-war period the production should be kept at the level of the average of the last three years, *i.e.*, 1942-43, 1943-44, 1944-45 and that in the third year it should increase by ten per cent going upto 50% in the 7th year. The Panel was also of the view that if the Machine Tools industry is to be established on sound lines, the release of machine tools by the Defence Services should be strictly controlled and should be so adjusted as to absorb the capacity of the indigenous industry already established in India.

As regards the proposed (a) "arrangement with foreign firms of repute for the supply of technical data and information, say, on a royalty basis and the loss of experts for the required period"; and (b) import of "machinery for the production of these tools from England and America", recommended by Sir D. B. Cooper, it was considered that Government is not now in a position to render active help for ensuring that for any orders placed abroad for machinery for the manufacture of machine tools, the manufacturers should agree to give technical advice as a pre-condition of purchase. The consideration of this proposal had therefore to be postponed.

As regards the proposed release of machine tools imported and manufactured in India which would be declared surplus after the cessation of hostilities, it was agreed generally that the Government's plan as explained by Mr. Hodkinson was acceptable. This plan envisages that all machines

likely to be helpful to the Machine Tool Industry and any other major industry which the Government of India intend to develop will be advertised by the Government of India for sale at predetermined prices which will be attractive to the users and will form an incentive to such industries to re-equip or expand their workshops.

With reference to Sir D. B. Cooper's suggestions *re*: the training of personnel for the Machine Tools industry it was explained by the Chairman that Government had already taken steps for the training of personnel abroad. The Panel wished to impress on the manufacturers already established in India the need for adopting a long-term plan for training personnel for various requirements.

Location of Machine Tools Industry

The recent announcement by the Government of India on the regionalisation of industries, in general, came up for discussion at the meeting. As regards the Machine Tools industry, in particular, the Members were in favour of the Licensing Authority granting licences keeping in view the proper distribution of this industry all over the country, the engineering experience, the standing of the firm applying for licence and its financial and technical capacity.

Manufacture of small Tools

It was generally agreed at the meeting that the manufacture of small tools forming component parts of machine tools should develop side by side and keep pace with the expansion of machine tools manufacture.

On the afternoon of the 26th July the Panel met the representative of the principal Machine Tools manufacturers and importers of machine tools at Bombay and also of the Small Tool Manufacturers' Association, Bombay. The Chairman explained to the representatives the various difficulties now confronting the Machine Tool industry in India and invited their suggestions for the expansion of this industry and of the allied industries manufacturing small tools.

The representative of Messrs. Alfred Herbert & Co. (India) Ltd. emphasized the inferiority of the machine tools produced in India during the war and stated that as the India-made machine tools are yet to reach the standard of efficiency of the British and American makes, all the industries in India showed unmistakable preference for foreign machines. The response to the Chairman's query as to how this state of affairs can be remedied, Mr. Ayre suggested that the remedy lay in the Indian manufacturers developing their, "Inspection" side and getting more efficient supervision throughout the stage of manufacture.

The representative of Messrs Richardson & Cruddas had no special points to mention except that the few Indian manufacturers who have been producing machine tools up to a high standard of efficiency should be encouraged after the war by every possible means.

Mr. Meswani (of the Acme Engineering Co., Ltd., Bombay), a representative of the Indian Merchants' Chamber of Commerce furnished figures to demonstrate to the Panel the wide difference in the cost of raw materials required for Engineering industries prevailing in the U.K. and in India. The figures quoted by Mr. Meswani are shown in the enclosure. It was agreed generally at the Meeting that if this difference in price is not removed, the Indian Machine Tools industry cannot hope to survive after the termi-

nation of the war. It was also suggested at the meeting that in regard to the basic materials used in the manufacture of machine tools there should be no difference between the price charged to the public and the price charged for Government purposes.

The representative of the Investa Machine Tools and Engineering Co., Bombay, referred to the difficulties in securing the right type of machines for the manufacture of machine tools and adequate supervision, and explained that the success hitherto achieved by this Company was mainly because of the co-operation obtained by them from Messrs. Alfred Herbert & Co. (India) Ltd. and the advice received from the Machine Tool Engineering advisers during the war.

The representative of Messrs Batliboi* stated that the various special "attachments" forming parts of machine tools are not produced in the U.K. are to be obtained only from the U.S.A. He promised to submit a detailed note to the Panel giving a list of such attachments which must, for some time after the war, continue to be imported from the U.S.A.

The representative of Messrs. Kirloskar Works, Harihar emphasizes the shortage of raw materials (including coke) at the Harihar works and the growing shortage of wagons. The Chairman, however, explained that the shortage is a passing phase only and may be ignored from the point of view of long-term planning.

Some of the other representatives came up with complaints regarding lack of transport, coal etc., and wished to know what the Government of India propose to do with the machine tools imported during the war under Lease/Lend arrangements *vide infra*.

Small Tools Manufacturers' Association

The representative of this Association (Mr. Nivatia) put forward the view that the development of the Small Tools industry which includes cutting tools (and abrasives), engineering and hand tools can best be considered by the Machine Tools Panel and that their interests would be safeguarded adequately if a Sub-panel for this industry is set up as part of the Machine Tools Panel. As an alternative it was suggested that two representatives of this Association, one to represent cutting and engineering tools and the other to represent hand tools, be co-opted on the Machine Tools Panel.

It was suggested by the representative of Messrs. Alfred Herbert & Co. (India) Ltd. that there was tremendous scope for the expansion of the Small Tools industry, which will have to be developed as an independent industry—in accordance with the practice already prevalent in U.K. and the U.S.A. where the Small Tools manufacturers are generally affiliated to the producers of alloy steel.

In the discussion that followed, it was pointed out by the Chairman that a separate Panel for small tools is not necessary and that it should suffice if two representatives of the industry are co-opted as members of the Machine Tools Panel for considering the development of cutting and engineering tools, both of which are closely allied to the Machine Tools industry. It was decided that a complete list of cutting and engineering tools should be prepared by these two members and confirmed by the Machine Tools Controller in the first instance.

*Subsidiary to M/S Kirloskar Works, Harihar.

As Hand Tools have little bearing on the Machine Tools Industry, it was decided to drop this item altogether. It was also informally pointed out that hand tools are already being considered by the Iron and Steel Panel (Minor) as part of Hardware, Domestic Tools, etc.

The representative of Messrs. Bharat Tool Manufacturing Co., drew the attention of the Panel to the fact that licences for the import of alloy steels for manufacturing small tools are not now issued by the Steel Import Controller and that the Panel should review the position regarding the availability of alloy steels for the purpose. The representative promised to submit a note to the Panel on the subject.

27th July 1945 (forenoon)

The Chairman explained to the meeting that the most difficult part of the agenda centred round the consideration of the immediate or interim protection necessary for the Machine Tool industry by way of a duty on imported machine tools or by a corresponding bounty or subsidy to the indigenous Machine Tool industry.

In the discussions that followed Khan Bahadur A. G. Khan held the view that the question of determining the extent of protection should not be tackled by this panel, but by a separate body suitably constituted—somewhat similar to the Tariff Board set up in the past for examining the claims to protection of various industries.

Mr. Innes, Regional Inspector of Machine Tools drew attention to the need for raw-materials being supplied to the Machine Tool industry in India at the U.K. prices, and also urged the retention of the Machine Tool Engineering Advisers recently imported into India for the training of skilled labour during the war. It was, however, held by the Panel that as these Advisers are not "designers" in any sense, the present men are not required if, as explained by the Machine Tool Controller, they are anxious to get back to their parent firms in the U.K. It was placed on record at the meeting that men of a better type are required for stimulating the Machine Tool industry in India after the war.

Control over the imports of Machine Tools in the Post-war period

Sir D. B. Cooper was strongly of the opinion that the import of machine tools in the post-war period should be made under a system of licences, and that licences should be granted to that extent only as would ensure that the machine tools produced in India are absorbed in the various industries before imports are allowed. In other words, machine tools are to be imported only after the production capacity of India has found an outlet. In the discussion that followed it was finally decided that the import of machine tools into India should be allowed only under a rigid control—keeping in view the production capacity of India and the actual requirements of the country from time to time. It was further decided that the Machine Tool Controller should act on the advice of a Committee formed by the manufacturers in India.

Release of surplus Machine Tools

As regards the surplus machines to be released by the Government of India to the market the Panel approved of the proposal that the release should be made by Government in such way that the normal development of the Machine Tools industry is not interfered with in any way.

Publicity Re: Licences granted by the Machine Tool Controller for the import of Machine Tools from abroad

It was proposed at the Meeting and accepted by the Members that whenever licences are granted for the import of machine tools from abroad full details including the description of the machines covered by all such licences, should be made available to the public as soon as possible by the Machine Tool Controller or by the Licensing Body, if any, to be set up for the purpose, by publication in the *Indian Trade Journal* and other commercial bulletins of wide circulation.

Government orders for Machine Tools

As regards the purchase of machine tools by Government it was decided at the meeting that, other things being nearly equal, preference should be shown to Indian manufacturers of machine tools, and that full consideration should be given to the difference between the price of raw materials in the U.K. and the corresponding prices in India.

Claims of the Machine Tools Industry for protection or subsidy

The discussions at this meeting relating to the question of protection or subsidy were only preliminary, and it was proposed by the Chairman that the matter would be discussed further at the forthcoming meeting to be held at Calcutta on the 7th—9th January 1946. The Chairman also requested the Members to send to him whatever written statements on the subject they could submit on the matter.

27th July 1945 (afternoon)

The discussion with the representatives of the several Chambers of Commerce and Trade Associations on the afternoon of the 27th July 1945 were confined mostly to the question of protection or assistance to the Machine Tools industry. The Chairman explained to the representatives the need for safeguarding the interests of consumers adequately in every scheme of protection subsidy, and enquired what the Chambers and Associations had to say to the proposal to protect this industry. The representatives promised to consult their members and submit their recommendations to the Chairman in due course.

These minutes only record the discussions that took place at the meeting at which no final decision was taken on matters relating to the development of the Machine Tools industry. As the Panel Members themselves are not in a position to come to any final decisions until they go round the country and obtain the views of all principal persons interested in the Machine Tools industry, the views recorded in these minutes are not to be treated as final at this stage.

NEW DELHI,

Dated September 4th, 1945.

(V. S. KRISHNASWAMI)

*Secretary,
Machine Tools Panel.*

Enclosure

With reference to para. 3(f) of my note dated 28th May, 1945, I present herewith a note prepared by Mr. Meswami of the Acme Engineering, Bombay, and as presented to the D.G.M.P. Calcutta on 15th May, 1945, to show the great difference in the cost of raw material required for engineering works prevailing in U.K. and in India. This difference must be removed if Indian industry is to survive.

(Sd). D. B. COOPER
27-7-1945.

THE INDIAN HUME PIPE CO. LTD

Construction House,
Ballard Estate, Bombay,
1st June, 1945.

OFFICE NOTE

At the meeting in Calcutta which was held on the 15th May, 1945, it was pointed out to D.G.M.P. that as the foreign material is coming in freely and is likely to do more so, it is desirable that the prices of basic materials should be brought in at the level of what are current today in U.K. It was pointed out that prices in U.K. are as under :—

<i>Brass</i>	<i>U. K.</i>	<i>INDIA</i>
Ingots 60/40	Rs. 532/- per ton	Rs. 2600/- per ton
Sheets	Rs. -/9/- per lb.	Rs. 21/- per lb.
Wire Extruded	Rs. -/10/- per lb.	Rs. 2/8/- per lb.
Extruded bar & Section <i>Copper</i>	Rs. -/6/6 per lb.	Rs. 2/2 per lb.
Ingots	Rs.	Rs. 150/- per cwt.
Sheets	Rs. 1400/- per ton	Rs. 6160/- per ton
Rods & Bars	Rs. 1400/- per ton	Rs. 6160/- per ton
Wire	Rs. -/9/- per lb.	Rs. 2/4 per lb.
<i>Gun Metal</i>		
Ingots	Rs. 1020/- per ton	Rs. 3260/- per ton
<i>Tin</i>	Rs. 4200/- per ton	Rs. 22400/- per ton
<i>Zinc</i>	Rs. 364/- per ton	Rs. 960/- per ton

Re : Ferrous materials :—Steel prices for plates @ Rs. 315/- per ton.

	<i>U. K. Prices.</i>	<i>Indian Prices</i>
Rods		Rs. 360/- to Rs. 415/- per ton
Wire		Rs. 500/- to 525/- per ton
Structural		
Steel	Rs. 206/- per ton	Rs. 270/- per ton
Pig Iron	Rs. 90/- per ton	Rs. 110/- per ton
Coal	Rs. 36/- per ton (Best grade)	Rs. 39/- per ton in Bombay
Coke	Rs. 216/- per ton	Rs. 57/- per ton in Bombay
Plates	Rs. 216/- per ton	Rs. 315/- per ton

In Land and lease steel billets are available in Bombay at Rs. 150/- per ton. Steel tubes ready galvanised are obtainable at about Rs. 350/- per ton which includes freight insurance, etc.

In India steel sheets for Government work are supplied at Rs. 200/- per ton while for industrial purposes we have to pay about 50% more charges.

Pig iron in Bombay at about Rs. 110/- per ton F.O.R. Bombay.

Railway freight also has been increased by 12½% during the war.

All these factors are against the development as well as continuation of the production in this country, and unless Government helps us in obtaining articles at considerably cheaper rates than what are current to day there seems to be very little hope for producing finished articles at prices which we can compete with imported articles inspite of freight, duty and other things.

For instance, we are attaching herewith a statement of prices of some of the materials for which we got quotations very recently for delivery at Bombay. Particulars given below:—

(1) Brass rods 1/2"	0-11-9 per lb
(2) Hinges section 1" x 3/32"	0-15-6 "
(3) 3/4 Hexagcn Rod & 5/8" x 3/52	0-12-6 "
(4) 1" x 1" x 3/8" Angle section	0-15-0 "
(5) Flat strip 1" x 3/16"	0-14-0 "
(6) No. 6 Round wire	0-13-3 "
(7) 1" x 9/16" x 1/16" channel section	1-4-0 "
(8) Galvd. chain Re. 1/- per Rft. (Basic Rate of brass rods 7d. per lb.)	
(9) Diesel Engine	225/0/0 per H. P.

Minutes of the third Meeting of the Machine Tool Panel held on 7th, 8th, 9th and 10th January 1946 in the Conference Room of the D.G.M.P. at Calcutta.

The following persons were present:—

- | | |
|--|--|
| (1) Sir L. P. Misra,
Chairman of the Machine Tool Panel. | |
| (2) Sir Dhanjichah B. Cooper,
Cooper Engineering Works, Satara. | <i>Member of the Machine Tool Panel.</i> |
| (3) Khan Bahadur A. G. Khan, C.I.E.
Deputy Director General (Disposals). | Do. |
| (4) Mr. J. D. S. Muirhead,
Machine Tool Controller. | Do. |
| (5) Dr. P. N. Seth,
The Indian Sewing Machine Mfg., Co.,
Lahore. | Do. |
| (6) Mr. K. Iyer,
C/O The Small Tool Manufacturers Association,
Bombay. | Do. |
| (7) Mr. Creighton (on invitation),
Chief Controller+ of Purchase (Munitions)
D.G.M.P., Calcutta. | Do. |

- (8) Mr. P. C. Mukherji (on invitation), do-
Deputy Director General (Engineering) Member of the Machine
D.G.M.P., Calcutta. Tool Panel.
- (9) Mr. S. S. Iyengar, Secretary machine
Deputy Industrial Adviser, Planning & Devel- Tool Panel.
opment Deptt. New Delhi.

1. *Confirmation of the Minutes of the previous Panel Meeting.*

The minutes of the second meeting of the Panel held at Bombay on the 26th and 27th July 1945 were considered and duly confirmed.

2 (a) *Consideration of the report dated November 1944 of the United Kingdom Machine Tool Mission.*

The report was considered. The Panel noted with interest that Sir William Stanier had also emphasised that the Machine Tool Industry in India was in its infancy; the Panel trusts that, as such, the indigenous industry would receive special assistance and protection from Government, and encouragement from Indian Industrialists.

(b) *Further discussion on Mr. Hodgkinson's Pamphlet.*

Mr. Muirhead explained that he accepted the figures given in the pamphlet but pointed out that the classification of firms manufacturing machine tools into different grades shown in the pamphlet was not a permanent one, but would be subject to alterations in the light of the investigations made from time to time by the Machine Tool Controller.

3. *Machine Tool Control.*

The Panel noted with satisfaction that the post of Machine Tool Controller was being retained by the Industries and Supplies Department, and that he would also take over the duties of the Development Officer for machine, small, hand and cutting tools.

The Panel considered that his duties in the post-war period would be of an exacting and a very responsible nature. The Panel, therefore, recommended that if he was to function properly, the status of the post should be raised to that of the Joint Secretary to the Department so that his views and decisions may carry adequate weight not only with the Government of India but also with the manufacturers in the country.

Further, the Panel considered it necessary that some assistance should be given to the Machine Tool Controller in regard to the cost accounting of the manufactures of indigenous firms, so that in case of high prices being quoted for an indigenous article, he may be in a position to satisfy himself as to the reasonableness of the price quoted.

4. *Materials required for the fabrication of Machine Tools.*

After further discussion on this subject, it was considered essential for the healthy development of the Machine Tool industry, Government should provide adequate facilities to the indigenous machine tool and small tool manufacturers in the procurement of raw materials of the proper grade

and quality and lay down standards of specification for materials, tolerances, workmanship, and performances for machine tools for the guidance of manufacturers.

To ensure a steady and healthy development of the Machine Tool industry, the Panel recommended that the Machine Tool Controller and/or the Development Officer, Machine Tools, of the Office of the Directorate General, Industries and Supplies Department, should prepare.

- (i) Specifications for machine tools of various types being manufactured in India ;
- (ii) draw specification for materials, tolerances, workmanship and performances comparable with those adopted by reputable manufacturers abroad.

The Panel also recommended that the Development Directorate to be set up should assist the indigenous machine and small tool manufacturers in the procurement of raw materials of the required quality at a price comparable with that paid by similar tool makers in the United Kingdom. The Panel stressed that should any difficulty arise in the procurement of these materials, it would be the duty of the Development Directorate to take it up with the authorities concerned.

5. *Import of Machinery from abroad.*

- (a) *Machine Tools* : Mr. Muirhead, the Machine Tool Controller explained that so long as the price charged for the indigenous machine tools remains reasonable, there would always be ample justification for the Government to prefer locally manufactured machine tools and prevent dumping of foreign products. He considered that the question of determining what was a reasonable price for an indigenous machine tool of Grade I quality would be one for the Tariff Board to decide in its deliberations as to what amount of preference was to be given by Government to indigenous manufacturers in the next few years, until they were in a position to bring their prices down.

The Panel recommended that the Machine Tool Controller should be invested with necessary powers to examine and check the accounts of the producer. If the indigenous manufacturer paid no attention to the suggestions of improvement made by the Machine Tool Controller and kept the price unduly high, the Machine Tool Controller will always have to issue licence for import from abroad.

(b) *Small Tools* :

- (i) In regard to the import of small tools the Panel after discussion decided that in all cases of applications for import from abroad, the Development Officer in charge of Machine Tools should inform the Deputy Chief Controller of Imports, the sources from which indigenous products could be obtained. To ensure that this is done in future, the Development Officer, Tools, will advise the chief Controller of Imports of the amount of indigenous production, indicating at the same time, roughly, the total needs of the country, and it will then be for the C.C.I., to license imports accordingly under advice to the Development Officer, Tools.

ii) The Panel further invited the attention of the Chief Controller of Imports, and the Deputy Chief Controller of Imports, Calcutta, to the fact, that the manufacture of the following metal cutting, wood working, and hand tools had either been sufficiently developed or was likely to be developed in the near future to acceptable qualities :—

- (a) Drills,
- (b) Reamers,
- (c) Taps,
- (d) Dies and
- (e) Grinding wheels.

(iii) The Panel, therefore, recommended that

- (a) before any import licences were issued by the D.C.C.I., he should take into account the needs of the country and the production capacity available in the country, as reported to him by the Development Officer, Tools, and would licence to that extent as cannot reasonably be met from indigenous production. The Development Officer, Tools would also take steps to bring to the notice of the users, the capacity available in the country.
- (b) the Chief Controller of Imports should publish in the Indian Trade Journal, full particulars of the import licences granted during the previous week, for metal cutting, wood working and hand tools, etc.
- (c) the manufacturers of the above mentioned tools would be entitled to representations they may have to make, in connection with import licences issued, either direct to the Officer-in-charge of Machine Tool Development or through the Advisory Committee members of their area.

6. *Disposal of surplus Machine Tools.*

At the request of the Chairman, Khan Bahadur A. G. Khan, Deputy Director General (Disposals) indicated to the Panel that the Disposal Plan prepared by the Machine Tool Controller for the disposal of surplus machine tools was under consideration in the office of the D.G. (Disposals) and would be issued after it had been finally approved by the Disposals Board.

Mr. Muirhead, the Machine Tool Controller, was requested to outline as to how he proposed to put the surplus machines in the market and whether he had taken into consideration the manufacturing capacity of the country. Mr. Muirhead explained that releases would depend upon the approximate consumption in the country and indigenous production. For example if the consumption turned out to be 400 in a fixed period and the production was only 100 for the same period, the interest of the indigenous manufacturers would be adequately safeguarded if the releases were kept round about 300. On further enquiry regarding the method that would be adopted for fixing the price of the surplus machine tools, Mr. Muirhead stated that the price would be based on the U. K. export price list issued by the Ministry of Supply and that the prices quoted in the release list would be taken into consideration minus the depreciation at the time of release to the public. He mentioned that the surplus machine tools were generally used ones but in a serviceable condition.

The Chairman pointed out that in view of the high prices prevailing in war time, the import price at the time of sale should be taken into consideration except in the case where there was a general pointer, that the imported price was in reality, the dumped price. The Panel recommended that the Machine Tool Controller should periodically (preferably every quarter) review the prices of surplus machine tools released for sale in the light of the prevailing import prices.

Sir D. B. Cooper intimated that if this particular point was noted, a lot of trouble could be avoided. Mr. Muirhead stated that the U. K. price was as on 15th July 1945 and dumping was not in view at that time. As the Government was controlling the disposal, he thought that dumping of surplus stores would not occur. The Chairman stressed that the consumption in India should be ascertained as it was absolutely necessary that disposal plus production should never exceed consumption. Sir D. B. Cooper suggested that surplus machinery which had been in use for nearly 30 years should be scrapped. This practice was adopted in the United Kingdom and other countries and there was no reason why the same practice should not be adopted in India. The Chairman remarked that there appeared to be no objection to scrapping old machines of the type already manufactured in India but there would be no point in scrapping machines which were not fabricated in this country.

Khan Bahadur A. G. Khan stated that the Disposal Plan would pay due regard to internal economy, and production and should not affect prejudicially the indigenous industry. With regard to the channel of disposal of balancing plant, the Disposals Plan provided for the holding contractors to exercise their first option for the purchase of the machinery held by them provided this first option was provided in the contract. As for the other machines, the Disposal Board had laid down that stores should be offered in order of priority to Central and Provincial Governments, semi-government Departments, Native States, Public Bodies and Indian Civil Demands.

In the light of the discussions mentioned above, the Panel recommended that in the disposal of machinery which are likely to be of assistance to Machine Tool manufacturers, Government should give preference to any other industrial purchaser of surplus machine tools so as to assist the output of machine tools in the country.

7. Protection to the Machine Tool Industry.

The Panel was of the opinion that it was not possible to indicate at this stage, the extent of protection required for any class of machine tools manufactured in this country, as it would depend on the action taken by the Government on the recommendations of the Panel and on the policy outlined by the Development Directorate's representatives indicated in the minutes of the Special meeting of the Machine Tool Plan held in the morning of Monday, the 7th January 1946.

8. Discussion on the Memorandum submitted by the Small Tool Manufacturers Association.

The Chairman stated that in view of the creation of the Development Directorate, and the retention of the post of the Machine Tool Controller and after the explanations given by the representatives of the Supply Depart-

ment clarifying the general line of action in regard to the development of small tool industry; the issue raised in the memorandum was not a live one at this stage.

Mr. Iyer, the representative of the Small Tool Manufacturers Association agreed with this view.

9. *Feasibility of utilising surplus capacity and equipment of Ordnance Factories for the manufacture of Machine Tools.*

The Panel desired that the note on this subject as compiled by the Supply Department should be circulated to all the members of the Panel for information.

10. *Interview with the representatives of the manufacturers and importers of Machine Tool in Bengal.*

The Panel met representatives of manufacturers and importers of machine tools in Bengal at a special meeting held in the Conference Room of the D.G.M.P. on the 8th January 1946 (afternoon).

The following persons were present :—

1. Mr. Deardon of M/S Jossop & Co., Ltd., Calcutta.
2. Mr. Mitchel of M/S Alfred Herbert (India) Ltd., Calcutta.
3. Mr. Choudhury of M/S India Machinery Ltd., Howrah.
4. Mr. Dalmahoy of M/S Britannia Engineering Co. Ltd., Titaghur.
5. Mr. Kovos of M/S Maya Engineering Works, Calcutta.
6. Mr. Kapoor of M/S Jay Engineering Works, Ltd., Calcutta.
7. Mr. Louis of M/S Francis Klein & Co., Ltd., Calcutta.
8. Mr. R. C. Knight of M/S William Jacks & Co., Ltd., Calcutta.
9. Mr. Hodgkinson } of M/S Associated British Machine Tool Makers
10. Blake } Ltd., Calcutta, and
11. Johans of M/S Machine Tools (India) Ltd., Calcutta.

The minutes of the discussions are recorded in APPENDIX a attached.

11. *Interview with the representatives of the Chambers of Commerce.*

The Panel met representatives of the Bengal Chamber of Commerce, the Indian Chamber of Commerce and the Muslim Chamber of Commerce at a special meeting held in the Conference Room of D.G.M.P. on the 9th January 1946 (afternoon).

The following persons were present :—

- (1) Mr. P. F. S. Warren,
Chairman of the Bengal Chamber of Commerce.
- (2) Mr. Jalan,
Representative of the Indian Chamber of Commerce.
- (3) Mr. Shaukat Omar,
Representative of the Muslim Chamber of Commerce.

The minutes of the discussions are recorded in APPENDIX b attached.

12. *Visits to the premises of Machine Tool Manufacturers in Calcutta*
[9th January 1946 (forenoon)].

The Panel members visited the premises of the following machine tool
[10th January 1946 (forenoon)] manufacturers :—

1. Messrs Britannia Engineering Co., Ltd.,
Titaghur, Calcutta.
 2. „ Jessop & Co., Ltd., Dum Dum, Calcutta.
 3. „ Maya Engineering Works, Tollygunge, Calcutta.
 - and 4. „ India Machinery Ltd., Dassnagar, Howrah.
13. *Steps to be taken to establish the Machine Tool and Small Tool Industries in this Country.*

As a result of the discussions among the members with the manufacturers, chambers of commerce, and representatives of the D.G.M.P., the Panel recommended that—

- (a) the Government of India, Department of Commerce should consider the advisability of issuing an addendum to their Press Communique at as early a date as possible for including machine tools and small tools in the list of industries already published in the Government of India, Commerce Department resolution No. 218-T, dated 3rd November, 1945.
- (b) the facilities available for training workmen and trade apprentices in some of the Ordnance Factories may be further improved by Government and fully utilised by the Trade.
- (c) for the quick and healthy development of the Machine Tool and Small Tool industries in India, experienced specialists in the following branches should be engaged on short term contracts to assist the manufacturers to develop the industry on proper lines and raise the standards of manufacture in their respective branches upto the required quality :—
 1. A specialist in foundry practice fully conversant with the technique of casting with ferrous and non-ferrous metals,
 2. A specialist in Metallurgy with special experience in the heat treatment of metals required for the fabrication of machine tools,
 3. An expert Machinist fully conversant with the latest methods of manufacture of precision machine tools, cutting methods, drives (including hydraulic and electronic ones) and setting of tools, and
 4. A specialist in Metrology fully conversant with the development of administrative and inspection methods, capable of imparting instructions to the inspectors in the use of various latest precision instructions.

NOTE.—The Panel was of the opinion that the experts mentioned above would not only substantially help towards the development of the Machine Tool industry to the required standard, but would also be of invaluable help to other industries for which a sound knowledge of foundry practice, metallurgy, machining, metrology was essential. The above mentioned specialists should be of a very much better type than the Machine Tool Advisers previously appointed by the Government of India under the Machine Tool Controller.

- (d) surplus Ordnance Factories where facilities existed might be utilised for the manufacture and supply of castings and forgings for the use of machine tool manufacturers all over the country.
 - (e) the present arrangement for inspection both on behalf of the purchaser and manufacturer should in the general interest of the industry be further improved and strengthened and if necessary, some of the inspectors employed by Government should be sent abroad for refresher course to study the latest methods.
 - (f) to facilitate development of this very vital industry, the land required either for new factories or for the expansion of the existing ones should be acquired for the machine tool manufacturers by the local Governments.
 - (g) the present rate of depreciation allowed for income-tax returns was inadequate for a healthy development of the indigenous machine tool industry. More provision should be permitted in the income-tax returns for depreciation.
14. The Panel decided to hold the next meeting at Lahore from the 4th to the 7th March, 1946.

Sd. (S. S. IYENGAR),
Secretary, Machine Tool Panel.

APPENDIX a

Minutes of the Special Meeting of the Machine Tool Panel with the representatives of Manufacturers and importers of Machine Tools in Bengal.

Mr. Deardon of Messrs. Jessop & Co., Ltd., Calcutta intimated that—

(a) For the time being, we are mainly concentrating on a useful range of high class, all geared, screw cutting and surfacing lathes, but we have produced a wide variety of other machine tools in the past, notably during the war, and we are always ready to extend our activities in light of circumstances.

(b) The industry already enjoys a certain degree of protection in virtue of customs duty and freight charges, and with prices at their present level, we have grounds for believing that we can successfully meet overseas competition, but should this increase in severity without any compensating fall in indigenous costs, we might well find ourselves at a disadvantage.

(c) In general, we are inclined to deprecate substantial protection as such, since it is apt to promote unhealthy development in the sense of inefficient management, poor designs and low standards, and instead, we favour a policy of preferential treatment in respect of Government purchases, strictly dependent on quality, which would provide an adequate measure of encouragement without entirely vitiating the invigorating stimulus of overseas competition.

(d) Consequently, we do not contemplate asking for any special assistance at this stage, though we recognise that changing conditions may sooner or later render it necessary to do so.

(e) Not merely as a result of the war, but starting more than ten years ago, we have spent a great deal of time and money in building up our share of the business, which now engages a large part of our technical and material resources, and while we should obviously have to seek an alternative outlet for our potentialities if it were to become unremunerative for any reason, in the same way as we have more than once been impelled to turn to new lines on former occasions this is not to be construed as implying that we would lightly surrender our hardy won position.

2. Mr. Mitchell of Messrs. Alfred Herbert (India) Ltd., Calcutta intimated that Messrs. Britania Engineering Co., Ltd., for whom they are selling agents do not need any special assistance from Government. They will continue to manufacture centre lathes when given a licence to manufacture. He was of the opinion that the indigenous manufacturer of machine tools had an advantage of 15 to 25% (according to size of the machines) in his favour even as things stood at present, owing to difference in freight, insurance, etc., which should enable him to hold his own. If there was a decrease in price as a result of general deflation or from other causes, they should also operate in India as well and the Indian manufacturers should be able to bring the prices down to the same extent. He desired that the indigenous manufacturers should not be moolly-coddled by Government. If there was dumping of foreign products which adversely affected the development of the local indigenous industry, the Government should take necessary steps to alleviate the situation. Mr. Mitchell was of the opinion that Messrs. Britania Engineering Co., Ltd., would be able to hold their own and that no special Government protection was needed by them.

3. Mr. Choudhury of Messrs. India Machinery Ltd., intimated that their firm experienced considerable difficulties in getting the correct grade and quality of raw materials *viz.*, pig iron, special steels, etc. He requested that the Government should insist upon the producers *viz.*, Messrs. Tata Iron and Steel Co. and Burn & Co. to supply to the correct specification the raw materials indented to them. The Chairman assured that this difficulty would not arise in future as the manufacturers of the raw materials referred to above had now given him an assurance that they were ready to meet any demand for pig iron or steel alloys and if there was any cause for a complaint, the firm should immediately contact the management of manufacturers of raw materials who would promptly set things right.

4. Mr. Koves of Messrs. Maya Engineering Co. explained that his firm did their utmost and harnessed their entire resources in manufacturing machine tools for augmenting the war effort. He desired that Government should not permit the import of machine tools of the types already manufactured in India. He further desired that the Machine Tool Controller should examine the accounts of the indigenous machine tool manufacturers and fix up a reasonable price for their products and if those prices were acceptable to both the parties and machines were available at those prices in the country, no foreign machines should be allowed to come into India. He also intimated that his firm were badly in need of a suitable piece of land for building a modern factory as their present premises were found to be inadequate to meet their present needs. He suggested that the Government should use their good offices in acquiring for them a suitable piece of land at a reasonable price.

5. Mr. Louis of Messrs. Francis Kolin & Co., Ltd., was of the opinion that protection for India Machine Tool industry would be like a two-edged sword, because India would soon be involved in a race towards industrialisation with Europe. Since India was a huge sub-continent, the needs for machine tools would be vast and the import of machine tools from abroad would be inevitable. Hence, he did not favour placing an embargo on machines imported from foreign countries.

6. Mr. Hodgkinson of Messrs. Associated British Machine Tool Makers Ltd. stated that from the import points of view, he thought that the question of dumping of foreign machine tools was only a bogey and did not merit too much attention being paid to it.

He considered that it would be fallacious to assume that the cost of the indigenous machine tools increased appreciably owing to the higher prices the local manufacturer had to pay in the purchase of imported raw materials. As a matter of fact, 80% of the raw materials employed in the manufacture of machine tools was cast iron and India was actually producing castings for machine tools much cheaper than the manufacturers in England.

Khan Bahadur A. G. Khan stated that Mr. Hodgkinson might be able to indicate whether raw materials required by the manufacturers of machine tools obtainable in India would cost more than the cost of raw materials obtainable by manufacturers of machine tools abroad.

Mr. Hodgkinson was of the opinion that the India manufacturers should be able to produce machine tools, which embodied raw materials of foreign make, at a price comparable to the price of Foreign raw materials in view of the advantageous differentials such as duty, freight, insurance, etc. and the

fact that machine tools castings could be produced much cheaper in India than in the U. K. even taking into account the higher prices to be paid in India for imported steels; in short the difference in the price of imported steels to Indian manufacturers was more than compensated by their lower price paid for castings and the transport and customs costs which had to be paid on imported machine tools.

7. Mr. Jehans of Messrs. Machine Tools (India) Ltd., intimated that it was difficult to obtain the right type of raw materials in this country which is a handicap for establishing further improvements in the machine tool industry. He agreed that technical advice in the shape and form as contemplated by the Panel was quite essential.

In regard to foreign competition, he was of the opinion that the indigenous industry had a chance of survival if the manufacturers paid due regard to quality of their product commensurate with the cost.

APPENDIX b

Minutes of the Special Meeting of the Machine Tool Panel with the representatives of the Chambers of Commerce in Bengal.

The Chairman of the Panel explained to the representatives of the Chambers of Commerce, the object of the Government of India in setting up the Panel and enquired if they could give any indication of any handicaps from which the Machine Tool industry was suffering at present and whether they desired that the Panel should make any special recommendation for the removal of such handicaps.

The Bengal Chamber of Commerce.

Mr. P. F. S. Warren expressed that—

(a) For the time being, we are mainly concentrating on a useful range of high class, all geared, serow cutting and surfacing lathes, but we have produced a wide variety of other machine tools in the past, notably during the war, and we are always ready to extend our activities in light of circumstances.

(b) The industry already enjoys a certain degree of protection in virtue of customs duty and freight charges, and with prices at their present level, we have grounds for believing that we can successfully meet overseas competition, but should this increase in severity without any compensating fall in indigenous costs, we might well find ourselves at a disadvantage.

(c) In general, we are inclined to deprecate substantial protection as such, since it is apt to promote unhealthy development in the sense of inefficient management poor designs and low standards, and instead, we favour a policy of preferential treatment in respect of government purchases, strictly dependent on quality, which would provide an adequate measure of encouragement without entirely vitiating the invigorating stimulus of overseas competition.

(d) Consequently, we do not contemplate asking for any special assistance at this stage, though we recognise that changing conditions may sooner or later render it necessary to do so.

(e) Not merely as a result of the war, but starting more than ten years ago, we have spent a great deal of time and money in building up our share of the business, which now engages a large part of our technical and material resources, and while we should obviously have to seek an alternative outlet for our potentialities if it were to become unremunerative for any reason, in the same way as we have more than once been impelled to turn to new lines on former occasions, this is not to be construed as implying that we would lightly surrender our hardy won position.

The Indian Chamber of Commerce.

2. Mr. Jalan representative of the Indian Chamber of Commerce desired that in order to encourage the industry, necessary assistance should be given to acquire capital goods for the manufacture of small tools. He desired that the importation of balancing plant needed by the machine tool manufacturers should be given priority. Their object was to retain what they had and to improve what they developed and to achieve further development. This object could only be fulfilled if the necessary machines, technical staff and the technical advisory help were available. They felt great difficulty in getting technicians. The few that are available are already employed in the country. If they wanted to bring technicians from abroad, it was very difficult to get priority passages for them.

He agreed with the Chairman's suggestion that the Government should set up a Department of technicians who should be in a position to advise and improve the quality of outturn and render every kind of assistance to the manufacturers in technical matters. Mr. Jalan further suggested that in addition to this help, an inspection department should be set up in order to give security to the consumers and infuse confidence in them. He was informed by Khan Bahadur A. G. Khan that necessary Government inspection organisation already existed. The firms like TATAS and SCOB were already availing of the inspection facilities offered by Government.

Mr. Jalan requested that the Panel should firstly recommend to the Tariff Board that the indigenous products should be adequately protected.

Secondly, the Government should indicate the total annual consumption of all kinds of tools and this information should be made available to the public.

Thirdly, the Government should provide adequate priority facilities for obtaining raw materials which are in some cases not manufactured in India.

Mr. Jalan desired that the Government while purchasing stores for their requirements should give preference to indigenous products. He further desired that the question of depreciation should also be considered. *The rate of depreciation should be increased and E.P.T. should be reduced.* The expenses incurred in regard to research should be counted against depreciation. The present rate of depreciation was quite inadequate for the healthy development of indigenous industries.

The Muslim Chamber of Commerce.

3. Mr. Shaukat Omar representative of the Muslim Chamber of Commerce explained that their Chamber had connections with machine tool makers in Batala, Forozpore, Sialkot, Lahore and Jullunder and some of their members were the selling agents of the manufacturers

in the Punjab. The work in the Punjab area was being done on a cottage industry basis and the machine tool was capable of being dealt with in that fashion. He was personally aware of some of their difficulties. These small scale manufacturers are not large enough to organise private internal inspection nor are they in a position to employ very expensive technicians unlike the cases of large machine tool makers. The casting that are made are not suitable for machine tools although they may be quite suitable for agricultural implements. He desired that all manufacturers should be certified by Government and classified into grades so that they may create confidence in the public and this would prove a lever for improving the products. His own view regarding the machine tool industry on a cottage industry basis was a very gloomy one. He sincerely thought that this industry will have to be written off unless something drastic was done. He anticipated greatest difficulty in inducing the purchaser of machine tools to buy Indian products. They should be very happy if the cottage machine tool industry could be developed so as to produce first class machines. He advocated exercising full control over the industry for raising the standard of production which would create the necessary confidence in the public. As regards licensing of manufactures and imports, he desired that the control should continue. He advocated that the Government should select firms to manufacture particular types of machine tools, for instance, one group of makers should be selected to make shaping machines, another group to manufacture lathes, and so on. But the present attempt of small tool makers to try to make all types of machine tools should be restricted. In the case of small scale manufacturers, the licensing should be for machine tools of particular sizes so that firms may specialise and thereby raise the quality and make the industry survive. He strongly advocated that the quality must be raised and the public confidence must be augmented, and to achieve this object, we should adopt rigorous inspection by Government as the small manufacturers were not in a position to organise works inspection. A certain amount of assistance was also necessary for obtaining good castings and the licensed machine tool makers should be forced to get their castings at a proper price from correct sources.

He further desired that Government should make necessary arrangements to get a batch of about 4 experts, one expert designer, one expert in foundry practice, one expert in methods of machining and one expert fully conversant with inspection procedure. This should constitute the Control Technical Advisory body in the Machine Tool industry.

NOTE.

The Chambers of Commerce have confirmed the above views expressed by their representatives. The Bengal Chamber of Commerce have done so subject to the following proviso:—

- (a) that any encouragement given to the consumption of indigenous machine tools in preference to the imported article must be subject not only to the quality consideration mentioned by Mr. Warren but also to the cost of the indigenous article not being disproportionate; and
- (b) that the Chamber strongly oppose any use being made of the war-time Import Trade Control Regulations to grant tariff or other protection to the indigenous industry until it is shown by a Tariff Board enquiry that such protection is necessary and justified.

Minutes of the Special Meeting of the Machine Tool Panel held in the morning of Monday the 7th of January, 1946 at 10-30 A.M. in the Conference Room of the D. G. M. P. at Calcutta.

The following persons were present :—

1. Sir L. F. Misra, Chairman of the Machine Tool Panel
2. Sir Dhanjishah B. Cooper Cooper Engineering Works, Member of the Machine Tool Panel.
Satara
3. Khan Bahadur A. G. Khan, C.I.E., Deputy Director General (Disposal) Ditto.
4. Mr J. D. S. Muirhead, Machine Tool Controller Ditto.
5. Dr. P. N. Seth, The Indian Sewing Machine Manufacturing Co., Lahore Ditto.
6. Mr K. Iyer, C/o The Small Tool Manufacturers Association, Bombay Ditto.
7. Mr. Creighton, Chief Controller of Purchase (Manufactures) D. G. M. P., Calcutta (On invitation)
8. Mr. P. C. Mukherji, Deputy Director General (Engineering), D.G.M.P., Calcutta Ditto.
9. Mr. S. S. Iyengar, Deputy Industrial Adviser, F. & D. Department New, Delhi Secretary, Machine Tool Panel

The following recommendations contained in Demi-official letter No. ME, dated the 15th October 1945, from Sir L. P. Misra, Chairman, Machine Tool Panel addressed to Mr. Kirpalani, Industrial Adviser, Planning and Development Department were discussed at a special meeting held on the morning of the 7th January 1946 by the Machine Tool Panel with Messrs. Creighton, P. C. Mukherji and Muirhead.

(i) For the Development of Machine Tool industry in India, a definite target for the post-war period should be fixed after taking all the aspects of the question into consideration including the release of machine tools by the Defence Department. It was suggested that for the first two years of the post-war period, the production should be kept at the level of the average of the last three years, *i.e.*, 1942-43, 1943-44 and 1944-45, and that in the third year, it should increase by 10 per cent. going up to 50 per cent. in the 7th year.

(ii) The import of machine tools in the post-war period should be made under a system of licences, and that licences should be granted to that extent only as would ensure that the machine tools manufactured in India are absorbed in the various industries before imports are allowed. With this end in view, it was suggested that a start should be made by the Machine Tool Controller acting on the advice of a Committee which includes the representatives of the principal manufacturers of machine tools in India.

(iii) If the machine tool industry is to be established on sound lines in India, the release to the market of the surplus machine tools (imported under Lease/Lend arrangements) by the Defence Services should be strictly controlled in such a way that the normal development of the Machine Tool industry is not interfered with in any way. It was also agreed that all the surplus Lease/Lend machines likely to be helpful in developing the Machine Tool Industry should be advertised by the Government of India for sale by auction—manufacturers being given a preference in the general interests of development of this industry.

Whenever orders for machine tools are placed on foreign manufacturers by the Machine Tool Controller, full details including the description and prices of all imported machine tools should be made available to the public as soon as possible by the Machine Tool Controller or by the Licensing Body, if any to be set up by the Government of India for the purpose, by publication in the Indian Trade Journal and other commercial bulletins of wide circulation.

(v) As regards the purchase of machine tools by Government, it was proposed that, other things being equal, preference should be shown to Indian manufacturers of machine tools, at least to the extent of the difference between the prices of raw materials in the U. K. and the corresponding prices in India.

(vi) As regards the need for the immediate or interim protection necessary for the Machine Tool industry by way of duty on imported machine tools or by a corresponding bounty or subsidy to the indigenous machine tool industry, the discussions hitherto held were only preliminary. The matter will be discussed further at the forthcoming meeting to be held in January, 1946.

Messrs. Creighton, Mukherji and Muirhead were in general agreement with the recommendations made in items (ii), (iii), (iv) and (v). They intimated that the Machine Tool Controller (Mr. Muirhead) was also to act in future as the Development Officer for the Machine Tool industry in the Development Division of the Directorate General, Industries and Supplies.

It was agreed (a) that the representation of the indigenous manufacturers should be further increased in the Machine Tool Controller's Advisory Committee by appointing two representatives from the Punjab, two from Bombay and South India and two from the Calcutta area. The following names were recommended for the consideration of the Department:—

- | | | |
|--|---|------------------------------|
| 1. Mr. C. N. Latif, M/s Batale Engineering Co., Batale
(Panjab) | } | From Punjab. |
| 2. Dr. P. N. Seth, M/s India Sewing Machine Mfg Co.,
Lahore | | |
| 3. Sir Dhanjishan B. Cooper, M/s Cooper Engineering
Works, Satara | } | From Bombay and South India. |
| 4. Rao Bahadur Jam bhakar, M/s Mysore Kirloskar, Ltd.,
Harihar | | |
| 5. Mr. Bihraon Gupta | | |
| 7 Mr. P. F. S. Warren, M/s Jessop & Co., Ltd., Calcutta | } | From Eastern India. |

(b) all the licences issued by the Machine Tool Controller for the import of machine tools should be published in the India Trade Journal and that if any manufacturer had any representation to make in this connection, he should do so either direct or preferably through the member of the Panel in his area.

(c) The Advisory Committee would be competent to raise such issues at their quarterly meetings.

(d) That in regard to drills, reamers, taps, dies, cutters, grinding wheels, files and rasps, whose manufacture had either been fairly established during the war period or was likely to be developed in the near future, the licences issued for import should also be published in the Indian Trade Journal and that the members of the Advisory Committee of the Machine Tool Panel should be authorised to discuss representations received from the manufacturers of the above tools in connection with import licences issued.

Draft Minutes of the Meeting of the Machine Tool Panel held on the 4th, 5th, 6th and 7th March 1946 in the Y. M. C. A. Hall at Lahore

The following persons were present :—

- | | |
|---|--|
| 1. Sir L. P. Misra, M/s Hindustan Motors Ltd.
8, Royal Exchange Place, Calcutta. | Chairmen of the Machine
Tool Panel. |
| 2. Sir Dhanjishah B. Cooper, M/s Cooper Engineering Works,
Satara, Bombay Presidency | Member of the Machine Tool
Panel. |
| 3. Dr. P. N. Seth, M/s The Indian Sewing Machine Mfg. Co.,
Ltd., Lahore | Ditto. |
| 4. C. M. Latif, Esq., M/s Batala Engineering Co., Ltd.,
Batala (Punjab) | Ditto. |
| 5. S. G. Nevatia, Esq., Chairman, Small Tool Manufac-
turers Association, Bombay | Ditto. |
| 6. S. S. Iyengar, Esq., Deputy Industrial Adviser, Planning
and Development Department New Delhi | Secretary, Machine Tool Panel. |

1. *Confirmation of the Minutes of the Previous Panel Meeting.*

The minutes of the third meeting of the Panel held at Calcutta on the 7th to 10th January 1946 were considered. The following amendments proposed by Sir D. B. Cooper were accepted by the Panel and the minutes were duly confirmed.

(i) *Page 2, Para. 2 (b), lines 6 and 7 :—*

Sub-heading : Further discussion on Mr. Hodgkinson's Pamphlet.

Read :—“ Mr. Muirhead explained that he accepted the figures given in the pamphlet but pointed out that the classification of firms manufacturing machine tools into different grades shown in the pamphlet was not a permanent one, but would be subject to alterations in the light of the progress made from time to time ”

In lieu of :—“ Mr. Muirhead explained that he accepted the figures given in the pamphlet but pointed out that the classification of firms manufacturing machine tools into different grades shown in the pamphlet was not a permanent one, but would be subject to alterations in the light of the investigations made from time to time by the Machine Tool Controller ”.

(ii) *Page 4, Para. 5 (a) Machine Tools ”, line 5—*

Main heading : “ Import of Machinery from Abroad ”.—

Read :—“ The Panel did not entirely agree with the above and recommended that the Machine Tool Controller should be invested with necessary powers to examine and check the accounts of the producer ”.

In lieu of :—“ The Panel recommended that the Machine Tool Controller should be invested with necessary powers to examine and check the accounts of the producer.”

(iii) *Page 7, Para. 6, Main heading : “ Disposal of Surplus Machine Tools ”*

Read :—“ In the light of the discussions mentioned above, the Panel recommended that, on the advice of the Machine Tool Controller, preference should be given to manufacturers of Machine tools in the sale or disposal of such machinery as is likely to be of assistance to them in the development of their manufactures ”

In Lieu of:—" In the light of the discussions mentioned above, the Panel recommended that in the disposal of machinery which are likely to be of assistance to Machine Tool Manufacturers, Government should give preference over any other industrial purchaser of surplus machine tools so to assist the output of machine tools in the country "

2. (a) *Consideration of letter dated 15th January 1946 from K. D. Jalan-Esq. representative of the Indian Chamber of Commerce addressed to Sir L. P. Misra, Chairman of the Machine Tool Panel.*

The Panel noted the letter and will give it, its best consideration.

(b) *Consideration of Memorandum dated 11th October 1945 from the Honorary Secretary, Small Tool Manufacturers Association Bombay, addressed to the Secretary to the Government, Commerce Department, Government, of India, New Delhi, and the Memorandum dated 27th October 1945 from Messrs. The Indian Tool Manufacturers, Ltd., Bombay, addressed to the Secretary to the Government of India, Commerce Department.*

Mr. S. G. Nevatia informed the Panel that since the case had already been referred to the Commerce Department, Government of India, his intention for circulating the copies of the memoranda to the members of the Panel was to bring the subject matter to their notice.

(c) *Consideration of further representation made by the small Tool Manufacturers Association, Bombay for the inclusion of representative from their trade on the Machine Tool Controller's Advisory Committee.*

The Machine Tool Panel recommended that a representative of the Small Tools should be included in the Machine Tool Controller's Advisory Committee and Mr. Nevatia's name might be considered against this representation.

3. *Consideration of the Note of Mr. S. S. Iyengar, Deputy Industrial Adviser, Secretary, Machine Tool Panel on the position of the Indigenous Machine Tool Industry in pre-war days, the progress made during the war-period and the difficulties confronting the Industry in the post-war period.*

Sir D. B. Cooper stated that he appreciated the technical note put up by Mr. S. S. Iyengar and that he would have appreciated it more, if the author had incorporated in his note the bright aspects of the progress made by the leading Machine Tool Manufacturers and the success achieved in building Grade I machine tools in the country.

Mr. S. S. Iyengar assured that the issue raised by Sir. D. B. Cooper was being fully and amply covered in the provisional report of the Machine Tool Panel which was under compilation at present.

The Chairman thanked Mr. S. S. Iyengar on behalf of the Panel for the note put up.

4. *Interview with the representatives of the Manufacturers of Machine Tools in the Punjab.*

The Panel met representatives of manufacturers of machine tools in the Punjab at a special meeting hold in the Y.M.C.A. Hall on the afternoon of the 4th March 1946.

The following persons were present :—

1. Mr. N. Sharif Choudri of M/s Batala Engineering Co., Ltd., Lahore,
2. Mr. R. L. Uberioi of M/s Modern Machines Ltd., Lahore.

3. Dr. M. T. Ahmed of M/s Water Power Engineering Co., Lahore.
4. Mr. M. A. Mirza of M/s Precision Manufacturing Co., Qadian.
5. Mr. Mohd. Shafi of M/s Unique Engineering Co., Gujranwala.

The minutes of the discussions are recorded in Appendix A attached.

5. Interview with the representatives of the Chamber of Commerce and the Director of Industries, Government of the Punjab.

The Panel met representatives of the Northern India Chamber of Commerce, the Punjab Chamber of Commerce, the Indian Chamber of Commerce and the Director of Industries, Government of the Punjab, at a special meeting held in the Y. M. C. A. Hall on the afternoon of the 5th March 1946.

The following persons were present :—

1. Mr. F. G. Stapleton, Representative of the Northern India Chamber of Commerce;
2. Mr. Shibrāj, Representative of the Indian Chamber of Commerce;
3. Mr. Kishan Chand, Representative of the Punjab Chamber of Commerce; and
4. Mr. B. A. Kureshi, I.C.S., Director of Industries, Government of the Punjab.

The minutes of the discussions are recorded in Appendix B attached.

*6. Visits to the premises of Machine Tool Manufacturers in the Punjab (5th and 6th March 1946) :—*The Panel members visited the premises of the following machine tool manufacturers in Lahore :—

1. M/s. Indian Sewing Machine Mfg. Co., Lahore;
2. M/s. Gangaram Hariram Co., Ltd., Lahore;
3. M/s. Modern Machines, Ltd., Lahore;
4. M/s. Noon Engineering Works, Lahore;
5. M/s. Oriental Machine Mfg., Co., Lahore;
6. M/s. Batala Engineering Co., Ltd., Batala;
7. M/s. Shadi Works, Ltd., Batala;
8. M/s. England Foundry Works, Batala;
9. M/s. Modern Machines, Batala;
10. M/s. Nagina Foundry, Batala; and
11. M/s. Kaycee Industries Ltd., Lahore.

7. Raw Materials required for the fabrication of Machine Tools and Small Tools.

The Panel was of the opinion that one of the main difficulties facing the Machine Tool and Small Tool Industries in the country was, the difficulty of obtaining the raw materials for the manufacture. Some of these materials were brought to India under "Lease and lend" and had now been taken over by the Government in large quantities. It was being released to manufacturers at the price purchased by Government which was much higher than the current United Kingdom prices for the same material.

The Panel recommended that raw materials which were urgently required for the manufacture of machine tools and small tools should be supplied to the manufacturers at prices comparable with that prevailing at present in the United Kingdom. For example, high speed tool steel and non-ferrous metals such as copper, zinc and tin originally purchased under "lease and lend" at a high price might now in the general interests of the country be released to the manufacturers in sufficient quantities and at prices comparable with those in force in the United Kingdom at the present time.

8. *Protection to the Machine Tool Industry.*

The Panel reviewed the present state of affairs in the Machine Tool Industry and was of the opinion that the position had gone steadily from bad to worse. The situation as far as the Panel was able to gather from its visits to the various places in the Punjab was, that in consequence of the abolition of the Machine Tool Control and the procedure in force during the control period for the purchase of locally made machine tools, the whole scheme of future development had got into a melting pot. The ceiling-prices originally fixed by the Machine Tool Controller for different types of machine tools were no longer operative. On the other hand, the importers were busy in booking orders, in some cases, at what appeared to us as a low price with the result that the machine tools and small tools manufactured in the country were lying unsold. The manufacturers in some cases had either closed down or were on the point of closing down permanently the building of machine tools in their shops. The Panel feared that if this state of affairs was allowed to continue for a few months more, the indigenous Machine Tool Industry would suffer irreparable damage. The Panel therefore stressed that this problem was of utmost importance. The Panel had recommended during the meeting held at Calcutta in January 1946 that the licences for import of machine tools should not be issued by the Chief Controller of Imports without previous consultations with the Machine Tool Controller and the Development Officer (Tools). It was now understood that the Machine Tool Controller was placed in a difficult position for the ceiling prices originally fixed by him were no longer operative with the removal of control and he had not the necessary machinery at his disposal to revise the prices which might appear to him to be reasonable in the present condition both for saving the Industry and protecting the consumer.

The Panel recommended that the Machine Tool Controller and the Development Officer (Tools) should be given the necessary staff to set up an organisation for fixing the prices of machine tools and small tools manufactured in the country. During the intervening period, he should be authorised by the Government of India to retain the ceiling prices previously fixed and not to issue licences for import of such machine tools and small tools as were being manufactured in the country up to the required standard laid down by him.

The Panel trusts that the Government would give this matter immediate attention for they were firmly of the opinion that if the present state of affairs was allowed to continue and action was delayed for some time even the development which had taken place in the Machine Tool Industry would be completely frustrated and the object for which the Machine Tool Panel had been set up would be completely defeated.

in view of the extreme seriousness of the situation, the Panel desired the Chairman to represent this position personally to the Industrial Adviser, Director General (Industries and Supplies) and the Hon'ble Member, Planning and Development Department.

The advance letter addressed in this connection by the Chairman Tool Panel to the Industrial Adviser, Government of India, is shown in Appendix C, attached.

9. The Panel decided to meet at Mussoori on the 6th to 15th June, 1946.

(S. S. IYENGAR),
Secretary, Machine Tool Panel.

APPENDIX A

Minutes of the Special Meeting of the Machine Tool Panel with the representatives of Manufacturers of Machine Tools in the Punjab.

Mr. M. A. Mirza of Messrs. Precision Manufacturing Co., Qadian, stated that his firm were manufacturing flashlight torches, small tools such as chisels-chasers, hammers, pipe cutters, etc., ceiling fans and spot welding machines. Their capital investment was about Rs. 5,00,000 and they employed about 50 workmen in their factory.

He intimated that light and simple small tools could be made on cottage industry basis.

2. Dr. Ahmed of Messrs. Water Power Engineering Co., Ltd., Lahore informed the Panel that his firm were manufacturing power presses of capacity up to 30 tons, and hydraulic presses of capacity up to 120 tons.

He intimated that it would be extremely difficult to manufacture these presses on cottage industry lines.

He desired that Government should make necessary arrangements to provide expert technical advice to the manufacturers of machine tools in the country.

3. Mr. R. L. Uberoi of Messrs. Modern Machines, Ltd., Lahore, stated that it was not possible to build machine tools on cottage industry basis but hand tools like screw drivers, hammers, wrenches, etc. could be manufactured on cottage industry lines.

He was of the opinion that unless Government protection was accorded to the Machine Tool industry, it was very difficult for the indigenous Machine Tool Industry to survive foreign competition.

4. Mr. Mohd. Shafi of Messrs. Unique Engineering Co., Gujranwala, stated that wood working machinery which their firm were manufacturing could be built on cottage industry basis. He advocated that the control on manufacture should be removed.

APPENDIX B

Minutes of the Special Meeting of the Machine Tool Panel with the Director of Industries, and the representatives of the Chambers of Commerce in the Punjab.

Director of Industries, Government of the Punjab.—Mr. B. A. Kureshi, I.C.S., Director of Industries of the Punjab Government stated that the industrial expansion in the Punjab was handicapped for want of electric

power. The Kangra Valley scheme for generating power to the extent of 1 lakh K. W. costing about Rs. 5 crores was held up for want of necessary plant which was not immediately available. The local Government had in all five schemes for generating electricity in the Province and when these are completed in about 6 to 7 years time, the Province would be in an ideal position to develop the various indigenous industries in the Province.

The Punjab Government had acquired about 800 acres of land in the vicinity of Lahore, out of which 500 acres were set apart for housing of labour and 300 acres were earmarked for factory sites and the area would be supplied with electric power. The authorities were also contemplating to establish a standby power generating plant at Shalimar having an output of 10,000 K. W.

Mr. Kureshi stated that the position of the engineering industry in the Province was as follows :—

60 per cent. of the registered factories in the Punjab were using electric power.

The figures for 1944 showed :

Lahore—562 workshops employing—2,223 workers.

Amritsar—112 workshops employing—1,000 workers.

The registered engineering workshops manufacturing machine tools in the Punjab :—

These came under two categories, viz.—

(1) Exclusively Engineering Workshops ;

(2) Metal Workshops.

In 1939 :

78 Engineering workshops employing... ..workers.

71 Metal workshops employing 3,465 workers.

In 1944 employing... ..worker.

240 Engineering workshops employing—14,363 workers.

160 Metal workshops employing.....workers.

The total number of workers employed in all the registered factories in the Punjab was 1,47,732. Those Engineering workshops constitute about 40 per cent. of the total industry in the Province.

The Director of Industries favoured the development of the Machine Tool Industry in the Provinces by organising and establishing about half a dozen machine tool manufacturing firms on a big scale. These bigger firms would utilise the manufacturing capacities of the small scale manufacturers in the Province by subletting contracts for the manufacture of component parts of machine tools. We considered that the mushroom growth of small scale manufacturers of machine tools in the Province and the unhealthy and cut throat competition which existed amongst them, were detrimental to the development of indigenous Machine Tool Industry on a sound healthy footing.

Representative of the Punjab Chamber of Commerce.—He was strongly of the opinion that if these industries which were now languishing for want of support were to derive any benefit from the Tariff Board set up by the Government of India responsibility for ascertaining what protection was needed must rest with the Tariff Board. They should call upon the Commerce Department and intimate to them immediately regarding the industries which were in urgent need of protection as a temporary measure. If they found on receipt of such information that the work involved would be very heavy, they should immediately approach the Government of

India for increasing their cadre and set up provincial representatives to study and work out the cases on behalf of the Tariff Board within a certain time limit.

Mr. Kishan Chand, representative of the Punjab Chamber of Commerce stated that the lathes manufactured by Messrs. Mysore Kirloskar Ltd., were found to be really good in actual use. But the lathes manufactured by Messrs. Gangaram Hariram did not give a satisfactory service value.

He suggested that every effort should be made to develop and perfect the Machine Tool and Small Tool Industries and manufacture simple type of machine tools such as drilling machines, etc. for which there was a great potential market in the country.

Government protection was necessary to stop imports of such machine tools which were successfully manufactured in the country.

APPENDIX F

MACHINE TOOL PANEL

Camp—Lahore, the 7th March 1947

From

Sir L. P. Misra,
Chairman, Machine Tool Panel,
Camp—Lahore.

To

The Industrial Adviser,
Planning and Development Department,
Government of India, Secretariat,

New Delhi.

SIR,

SUBJECT:—*Machine Tool and Small Tool Industry.*

I have honour to state that the state of affairs in the Machine Tool Industry is going from bad to worse steadily. In fact, it has deteriorated very much since the Panel met in January at Calcutta. The position as far as we have been able to gather from our visits to the various places in Punjab is that in consequence of the abolition of the Machine Tool Control and the procedure in force during the control period for the purchase of locally made machine tools, the whole scheme of future has got into a melting pot. The ceiling prices originally fixed by the Machine Tool Controller for different types of machine tools are no longer operative. On the other hand, the importers have been busy in booking orders, in some cases, at what appeared to us very low prices with the result that the machine tools and small tools manufactured in the country are lying unsold. The manufacturers, in some cases, have either closed down or are on the point of closing down permanently, the manufacture of machine tools in their shops. The Panel fears that if this state of affairs is allowed to continue for a few months more, the Industry will suffer irretrievable damage. The Panel, therefore, stresses with all

the emphasis at its command, the urgency of the problem. The Panel recommended during the meeting held at Calcutta in January 1946 that the licences for the import of machine tools should not be issued by the Controller of imports without previous consultations with the Machine Tool Controller and the Development Officer (Tools). We are given to understand that he is at present in a very difficult position, for the ceiling prices originally fixed by him during the control period have disappeared with the removal of the control and that he has not got the machinery at his disposal to revise the prices which may appear to him to be reasonable in the present condition both for saving the Industry and protecting the consumer.

The Panel recommends that the Machine Tool Controller and Development Officer (Tools) should be given the necessary staff to set up an organisation for fixing of prices of machine tools and small tools manufactured in the country. During the intervening period, he should be authorised by the Government of India to retain the ceiling prices fixed and not to issue licences for import of such machine tools and small tools as are being manufactured in the country up to the required standard laid down by him.

The Panel trust that the Government will give this matter immediate attention; for they are firmly of the opinion that, if the present state of affair is allowed to continue and action is delayed for some time even the development which has taken place in the Machine Tool Industry would have been completely nullified and the object for which the Machine Tool Panel has been set up, would be completely frustrated. In view of the extreme seriousness of the situation, the Panel desired the Chairman to represent this position personally to the Industrial Adviser, to the Director General (Industries and Supplies) and the Hon'ble Member, Planning and Development Department.

I have the honour to be,

Sir,

Your most obedient servant,

L. P. MISRA,

Chairman, Machine Tool Panel.

Copy forwarded to :—

S. A. Venkataraman, Esq., C.I.E., I.C.S.,

Director General (Industries and Supplies), New Delhi.

for necessary action. Under instructions of the Panel, the undersigned proposes to discuss the position with him.

Copy forwarded to :—

H. V. R. Iengar, Esq., C.I.E., I.C.S.,

Joint Secretary, Planning and Development Department,

New Delhi.

APPENDIX " G "

GOVERNMENT OF INDIA

DEPARTMENT OF PLANNING AND DEVELOPMENT

BY AIR MAIL

No. Ind 19(4)/46.

Secretariat (North),
New Delhi,
the 14th March 1946.

DEAR SIR,

Will you please refer to this Department telegram of even number, dated the 11th March, 1946, inviting you to attend the inter-departmental meeting on the 19th March 1946 at New Delhi to consider the question of immediate assistance that can be given to the Machine Tool Industry? The meeting will take place in Honourable Member, Planning and Development's Room No. 128-A, North Block, Imperial Secretariat. I am sending herewith a copy of the note which will form the basis of discussion at the above meeting.

Yours sincerely,
C. R. NATESAN,
Assistant Secretary.

Sir Lakshmipathi Misra,
C/o Hindusthan Motors Ltd.,
8, Royal Exchange Place, Calcutta.

Note for discussion at the inter-departmental meeting proposed to be held on Tuesday, the 19th March, 1946, at 3 p.m. in H. M. P. & D's Room No. 128-A, North Block, Imperial Secretariat, New Delhi.

SUBJECT :—*Immediate assistance to be given to the Machine Tool Industry.*

The Chairman of the Machine Tool Panel set up by the Planning and Development Department has brought to the notice of Hon'ble Member, Planning and Development Department the precarious condition of the Machine Tool Industry in India. According to him its position has deteriorated in the last few months, and is deteriorating from day to day in consequence of the abolition of the Machine Tool control. He discussed this question with the Hon'ble Member on the 8th March, 1946; and it was decided that this Department should call an inter-departmental meeting, on the date mentioned above, to discuss the question of what immediate assistance could be given to the Machine Tool Industry in India, in order to maintain, and if possible, to accelerate the development which took place during the war.

2. The Chairman of the Machine Tool Panel has, on its behalf, made certain recommendations towards this and from time to time. These are summarised below in four broad categories. It is obvious that these categories are closely inter-related, and often overlap, but it is felt that it will assist discussion on them, if they are considered under the four heads given below.

3. Interim recommendations of the Machine Tool Panel.

(A) Target for development.

A definite target for the post-war period should be fixed, after taking all aspects of the question into consideration, including the release of machine tools by the Defence Department. The target suggested is:—

(i) For the first two years post-war period, production should be at the level of the average for the last three years, that is, 1942-43, 1943-44 and 1944-45.

(ii) In the third year, an increase by 10%, and so on, to reach a target figure of 50% increase in the seventh year.

(B) Establishment of internal and external controls.

(i) The import of machine tools should be permitted *only* under a system of licences, and the licences should be granted only to meet demand, which cannot be met by Indian production.

(ii) When orders for machine tools are placed on foreign manufacturers by the machine tool Controller, full details, including description and the prices of the machine tools proposed to be imported, should be made available to the public by publication in the Indian Trade Journal, and other trade papers.

(iii) The release to the market of surplus machine tools (imported under Lease/Lend arrangements) by the defence services should be done in such a way as to cause, not only the least injury to the development of indigenous manufacturers, but to help its development. For this purpose, all surplus Lease/Lend machines likely to help in the development of the industry should be advertised for sale by auction, and manufacturers should be given preference in acquiring them.

(iv) The present arrangements for inspection, both on behalf of the purchaser and the manufacturers, should be improved and some of the inspectors employed should be sent abroad to study the latest methods.

(v) An organization for fixing prices of machine tools and small tool manufactured in the country should be set up.

(C) Direct assistance to the industry.

(i) Preference should be shown to Indian manufacturers in purchases made on behalf of the Government, other things being equal at least to the extent of the difference between the prices of raw materials in the U. K. and the corresponding prices in India.

(ii) The Government should provide facilities to indigenous manufacturers for the procurement of raw materials of the proper grade and quality, at prices comparable with those paid for such material in the U. K.; and to lay down standards of specification for raw materials, tolerances, workmanships and performance of machine tools for the guidance of manufacturers.

(iii) The Government (Commerce Department) should issue an addendum to their Press Communique including machine tools and small tools in the list of industries published in their Resolution No. 218-T, dated the 3rd November, 1945.

(iv) The facilities for the training of workmen and trade apprentices in Ordnance Factories should be extended, and brought to the notice of the industry.

(v) Experienced specialists in the following branches should be engaged on short term contracts to assist the manufacturers, and to raise the standard of production ;

(1) A specialist in foundry practice, fully conversant with the technique of casting with ferrous and non-ferrous metals ;

(2) A specialist in Metallurgy, with special experience in the heat treatment of metals, required for the fabrication of machine tools ;

(3) An expert Machinist full conversant with the latest methods of manufacture of precision machine tools cutting methods, drives (including hydraulic and electronic) and setting up of tools, and

(4) A specialist in Meteorology fully conversant with the development of administrative and inspection methods, capable of imparting instruction to the Inspectors in the use of the latest precision instruments.

Note: It is suggested that these experts would not only help materially in the development of this industry, but also other industries which require knowledge of foundry practice, metallurgy, machining and meteorology. The specialists should be of a much higher calibre than the Machine tool adviser previously appointed by the Government to assist the Machine Tool Controller.

(vi) Where facilities exist in surplus Ordnance Factories, they should be utilised for the manufacture and supply of castings and forgings on behalf of the manufacturers.

(vii) Land required either for new factories or for the expansion of the existing, should be acquired for the manufacture by the Provincial Governments.

(viii) More provision should be made for depreciation in income tax returns.

(ix) Raw materials urgently required by the manufacturers should be supplied to them at a price comparable to those prevailing in the U. K. e.g.; high speed tool steel and non-ferrous metals such as copper, zinc and tint originally purchased under lease/lend at high prices, should in the interest of the industry be released in sufficient quantities, at prices comparable to those prevalent in the U. K. at present.

(D) *Machine Tool Controllers Organisation.*

(i) The Machine Tool Controller should in the matter issuing import licences be guided by an Advisory Committee which should include representatives of the principal manufacturers.

(ii) The post of Machine Tool Controller should be made permanent and he should also take over the duties of the Development Officer (Tools). To enable him to function efficiently the status of the post should be that of a Joint Secretary to the Government.

(iii) The Machine Tool Controller should be given staff to enable him to :—

- (a) Cost account the prices quoted by the manufacturers.
- (b) Prepare specifications for machine tools of various types manufactured in India.
- (c) Draw specification for materials, tolerances, workmanship and performances comparable with those adopted by reputable firms abroad.
- (d) Set up an organization for fixing the prices of machine tools and small tools manufactured in the country. Until such time as this was done he should be authorised by the Government to

retain the ceiling prices fixed, and not to recommend licences for the import of tools indigenously manufactured, provided the latter are up to the standard prescribed by him. He should also be invested with powers to examine and check the accounts of manufacturers in order to control them in the interest of the consumers. If the prices quoted were exorbitant, he should be authorised to permit imports.

(iv) On receipt of application for import the Machine Tool Controller should inform the Deputy Chief Controller of Imports the source from which indigenous products can be obtained. He should keep the latter informed of the amount of indigenous production, and indicate roughly the total needs of the country.

(v) The Machine Tool Controller should periodically (preferably every quarter) review the prices of surplus machine tools released for sale in the light of the prevailing import prices.

4. It may also be mentioned that the Batala Engineering Company, Punjab, had in December, 1945, made five specific requests for assistance to the industry. Out of these four are covered by the above recommendations, while the fifth is for the grant of a subsidy to the manufacturers. This was sent to the Commerce Department who were requested to forward it to the Tariff Board for investigation by this Department's U. O. note, No. Ind. 19(4)/46, dated the 7th February, 1946. We understand that the matter has not yet been referred to the Tariff Board, and that the Commerce Department propose to bring it up before the Inter-departmental meeting shortly. It is suggested that this matter may also be considered at this meeting.

5. The agenda for the meeting will therefore be :-

(a) Discussion of the immediate steps necessary for granting assistance to the Machine Tool Industry.

(b) Any other connected subject brought up at the meeting.

Sd. (B. F. H. B. TYABJI),

Deputy Secretary to the Government of India.

APPENDIX 'H'

LIST OF FIRMS WHO HAVE BEEN GRANTED LICENCES TO MANUFACTURE MACHINE TOOLS TO GRADE I, II, III, and UNGRADED LIMITS

Name of firms	Grade
1. M/s India Machinery Co., Ltd., Dossnagar, Howrah	I
2. M/s Britannia Engineering Co., Ltd., Titaghur	I
3. M/s Alfred Herbert (1) Ltd., 13/3 Strand Road, Calcutta	I
4. M/s Cooper Engineering Co., Ltd., Satara Road, Satara	I
5. M/s Mysore Kirtloskar Ltd., Harihar, Mysore State	I
6. M/s Maya Engineering, 36A, Russa Road, Calcutta	I
7. M/s Indian Sewing Machine Manufacturing Co., Ltd., Dhani Ram Road, Lahore	I
8. M/s Richardson & Cuddes, Byculla Iron Works, Bombay	I
9. Investa Machine Tools Engineering Co., Ltd., Clerk Road, Pais St. Bombay II	I

Name of firms	Grade]
10. M/s Jesson & Co., Ltd., Calcutta	I
11. M/s Batala Engineering Co., Ltd., G. T. Road, Batala	I
12. M/s Hind Machines Ltd., 184, Jogendra Nath Mukerjee Road, Howrah	II
13. M/s Horcos Engineering Works, Shambazar, Calcutta, Paul Street	II
14. M/s Atlas Works Ltd., 119, Ripon Street, Calcutta.	II
M /s Shedi Works, G. T. Road, Batala	II
16. M/s Practical Engineering Co., 333-385, Aurther Road, Bombay	II
17. M/s M. Ahmed Din & Bros., 159, Hussain Para, Amritsar.	II
18. M/s Jay Engg., Co., Ltd. 183A, Prince Anwar Shah Road, Rollygunge, Calcutta	II
19. M/s G. G. Dandekar Machine Works Ltd., Bombay	II
20. M/s Hind Machines Ltd. Howrah	III
21. M/s Ganga Ram Hari Ram, Jail Road, Lahore Cantt.	III
22. M/s Victor Grane & Co., Sialkot City	III
23. M/s Jay Engineering Works, Tollygunge, Calcutta	III
24. M/s Oriental Engineering Works, Railway Road, Lahore	III
25. M/s S. L. Dutt, 42/1/2, Murari Pukur Road, Calcutta	III
26. M/s Kundan Lal & Sons, Ludhiana	III
27. M/s Unique Engineering Works, Gujranwala, Punjab	III
28. M/s New Standard Engineering Co., Ltd., 222, Bellasis Road, Bombay 8	III
29. M/s Noor Engineering Works, 92, Railway Road, Lahore	III
30. M/s Perfect Machinery Works, 7, Brandreth Road, Lahore	III
31. M/s Maya Engineering Works Ltd., Calcutta	III
32. M/s Keymer Baghshaw & Co., Ltd., 22, Strand Road, Calcutta	Ungraded.
33. Amar Singh & Sons, Jullundur City	Do.
34. M/s Ambala Engineering Works, 3, Cooper Road, Lahore	Do.
35. M/s Alladin Virjee Nathani, Darukhana, Mazagaon, Bombay 10	Do.
36. M/s Ahmed Bukah & Bros., Brandreth Road, Lahore	Do.
37. M/s Allah Din Mohd, Din, Railway Road, Lahore	Do.
38. M/s M. Abdul Subhan & Sons, Achli Gate, Batala	Do.
39. M/s M. Ahmed & Sons, 1, Brandreth Road, Lahore	Do.
40. Mistri Mohd. Abdullah Abdul Wahid, Outside Sheikhpura Gate, Gujranwala, Punjab	Do.
41. M/s Asiatic Engineering Co., Ltd., Kalpi Road, Cawnpore	Do
42. M/s Aryan Engineering Works Ltd., National Bank Buildings, Mission Row, Calcutta	Do.
43. M/s Mohd. Afzal & Bros., Brandreth Road, Lahore	Do.
44. Rai Sahib J. P. Agarawalla, Liluah	Do.
45. M/s H. R. Mohd. Ali & Sons, Engineering Works, Inside Lahore Gate, Amritsar	Do
46. M/s Allah Buksh & Sons, G. T. Road (Opp. Jail), Jullundur City.	Do.
47. M/s Ahmed Hossain & Sons, Bazar No. 7, Ferozepur Road, Lahore	Do.
48. M/s Atma & Co., 164, Ferozepore Road, Lahore	Do.
49. M/s Alfound Suppliers, Motinagar, Lucknow	Do.
50. M/s Asiatic Pencil Factory, G. T. Road, Amritsar.	Do.
51. M/s Asiatic Oxygen & Acetylene Co., Ltd., 8 and 9 College Square, Calcutta	Do.
52. M/s Arim Tin & Steel Works, 135, Canning Street, Calcutta	Do.
53. M/s Biswanath Agency, 7, Clive St., Calcutta	Do.
54. M/s Battan Singh & Sons, Gorya, N.W.R.	Do.

Name of firms	Grade
55. M/s Bengal Metal & Machinery Syndicate, P. 39, Mission Row Extn., Calcutta	Ungraded.
56. M/s M. Badar Uddin & Co., 86, Railway Road, Lahore	Do.
57. M/s Bhole Welding & Eng. Co., Kutchery Gate, Peshawar	Do.
58. M/s Bishen Singh & Sons, Gorya, N.W.R.	Do.
59. M/s Bharat Iron & Metal Works, Ladowali Road, Jullundur City	Do.
60. M/s Bosco Machines, 38/2/Elgin Road, Calcutta	Do.
61. M/s Bhooi Eng. Works, Opp., M.A.O. College, Amritsar	Do.
62. M/s Badhwar & Co., Canal Bank, P.O.F.C. College, Ferozepur Road, Lahore	Do.
63. M/s Batra Stationery Works (Shahdara), Thornton Road, Lahore	Do.
64. M/s British Engineering Works, Wasanpura, Lahore	Do.
65. M/s Climax Engineering Co., Gujranwala	Do.
66. M/s Central Foundry, G. T. Road, Batala	Do.
67. M/s Chemical Industries & Engineering Co., 2/1, Barrackpore Trunk Road, P. O. Baranagore, Calcutta	Do.
68. M/s Commercial Eng. Works, 18, Beadon Road, Lahore	Do.
69. M/s P. S. G. & Sons., Charity Industrial Institute, Coimbatore, South India	Do.
70. M/s Capital Engineering Works, 10 Bull Road, Lahore.	Do.
71. M/s P. N. Dutt & Co., 3A, Raja Kali Kissen Lane, P. O. Hatkhola, Calcutta	Do.
72. M/s Dominion Machinery Corporation, Brandreth Road, Chowk Dagarar, Lahore	Do.
73. M/s Doluhar Ltd., Bhupen Roy Road (Behala, 24-Perga)	Do.
74. M/s Daud Foundry, Lukkar Mandi, Batala	Do.
75. M/s R. B. Daulat Ram & Sons, Ludhiana (Pb.)	Do.
76. M/s Dayanand Technical Institute, Hans Raj Nagar, Jail Road, Lahore	Do.
77. M/s M. Din Mohd. & Sons, Beadon Road, Lahore	Do.
78. M/s Deccan Engineering Ltd., Madhav Nagar, Budhgaon	Do.
79. M/s Dewan & Co., 4, Montgomery Road, Lahore	Do.
80. M/s Engineering Enterprises, Bhadra, Ahmedabad	Do.
81. M/s England Engineering Works, G. T. Road, Batala	Do.
82. M/s O. K. Electric Works Ltd., G.P.O. Square, The Mall, Lahore	Do.
83. M/s Eastern Knitting Machine Co., Brandreth Road, Lahore	Do.
84. M/s M. Fazal Mohd. & Sons, Chahar Bagh, Phagwara Gate, Jullundur City	Do.
85. M/s Farmer Foundry & Iron Works, G. T. Road, Batala	Do.
86. M/s General Engineering Works, Moulviganj, Lucknow	Do.
87. M/s General Engineering Co., Deshmukhwadi, Poona 2.	Do.
88. M/s Ghulam Quader Fazal Din, G. T. Road, Batala	Do.
89. M/s Haji Ghulam Hussain & Sons, Roorkee	Do.
90. M/s Golden Engineering Co., Lyallpur	Do.
91. M/s Gresham & Co., 139, Kandla Kashaan Street, Bazar Fatepuri, Delhi	Do.
92. M/s Gujjar Singh Sadhu Singh & Bros., Dallewal, P.O. Bara Pind, Jullundur	Do.
93. M/s G. R. Sandhu & Co., 3, Brandreth Road, Lahore	Do.
94. M/s Guru Nanak Engineering Works, G. T. Road, Bagh Mamin, Batala	Do.
95. M/s Green Electrical Works, 53, General Patters Road, Madras	Do.
96. M/s Superintendent, Gun Carriage Factory, Jubbulpore	Do.
97. M/s Haji Fazar Karim, Thakur Singh Gate, Gujranwala	Do.

Name of Firms	Grade
98. M/s Hindustan Engineering Works, Batala	ungraded
99. M/s M. Mohd. Hussain & Sons, Bazar No. 7, Compound No. 163, Ferozepur Cantt.	Do.
100. M/s Hariina Engineering Works, 69/1, Belgachia Road, Calcutta	Do.
101. M/s Mohd. Hayat Mohd. Buksh & Bros., Dil Mohd. Road, Lahore	Do.
102. M/s Harish Chand & Co., Brandreth Road, Lahore	Do.
103. M/s Hafiz Elahi Baksh Ghulam Hussain, G. T. Road, Batala	Do.
104. M/s Hydraulic & Agricultural Industries, 88, Meleod Road, Lahore	Do.
105. M/s Hanuman Engineering Works, 13, Syed Salley Lane, Calcutta	Do.
106. M/s H. R. Mohd. Ali & Sons, Inside Lahori Gate, Amritsar	Do.
107. M/s M. Hidayet Ullah & Sons, Kh. Dil Mohd. Road, Lahore	Do.
108. M/s Howrah City Engineering Co., 75 Panchanantola Road, Howrah	Do.
109. M/s Mistri Ilam Din & Sons, Railway Road, Lahore	Do.
110. M/s Indian Engineers Corporation, Canal Bank, Outside Chatiwind Gate, Amritsar	Do.
111. M/s Mistri Ibrahim & Sons, Summudri Road, P. O. Gojra, District Lyallpur	Do.
112. M/s Ind. Electric Works, Mazagoan, Bombay 10	Do.
113. M/s Imperial Foundry & Iron Works, Achli Gate, Batala	Do.
114. M/s Indian Works, Wazirabad, Punjab	Do.
115. M/s Indo French Products Ltd., 5, Fairlie Place, Calcutta	Do.
116. M/s Indian Machine Tool Manufacturing Co., Ltd., Calcutta	Do.
117. M/s B. M. Industries, Amritsar Coal Supply Co., Chowk Moni, Amritsar	Do.
118. M/s India Ammunition Syndicate Ltd., P. O. Box 321, Lahore	Do.
119. M/s St. Joseph's Asylum Industrial Workshops, P. O. Kankanad, South Kanara	Do.
120. M/s Kashy Khana Works, Ltd, Railway Road, Lahore	Do.
121. M/s M. Khuda Buksh & Sons, Morque Dalgar, Brandreth, Road, Lahore	Do.
122. M/s R. Kashyap & Bros., 60, Dil Mohd. Road, Lahore	Do.
123. M/s Karim Bux & Sons, Achli Gate, Batala	Do.
124. M/s Khala Foundry, G. T. Road, Batala	Do.
125. M/s Mistri Karim Buksh, Railway Road, Batala	Do.
126. M/s Kusum Engineering Co., Ltd., Wardley House, 25, Swallow Lane, Calcutta	Do.
127. M/s Kem Engineering Works, 7, Convent Road, Calcutta	Do.
128. M/s G. L. Khanna & Sons, 37, Brandreth Road, Lahore	Do.
129. M/s Luxmi Vijoy Brass & Iron Works, Gheekanta Road, Ahmedabad	Do.
130. M/s Lal Singh Thaker Singh, Station Gorya, V. & P. O. Boparsi Khurd, Jullundur	Do.
131. M/s Modern Machinery Works, Railway Road, Batala	Do.
132. M/s M. A. S. & Co, Badamibagh, Lahore	Do.
133. M/s Modern Foundry Works, Jullundur City	Do.
134. M/s Metal Spraying Products, 119, Ripon Street, Calcutta	Do.
135. M/s Modern Machines Ltd., 50, Lawrence Road, Lahore	Do.
136. M/s Metropole Works, Veres, Amritsar	Do.
137. M/s Mohar Din & Sons, Empress Garden Road, Jullundur City	Do.
138. M/s M. A. Mumtaz & Co., Firdous Nagar, Mayo Road, Lahore	Do.
139. M/s Machine Tool Manufacturers, Shahdara, Delhi	Do.

1	2
140. M/s Malik Electric Works, 15—17, Victoria Road, Mozagaon, Bombay	10 ungraded
141. M/s Mechanical Workshop, Railway Road, Batala	Do.
142. M/s Malik Engineering Works, Kh. Dil Mohd. Road, Lahore	Do.
143. M/s M. Mohd. Din & Sons, Montgomery	Do.
144. M/s Mohd. Tufail & Bros., Railway Road, Batala	Do.
145. M/s Malik Bros., 40, Meeroad Road, Lahore	Do.
146. M/s S. S. Marathe, Reubens, Bombay	Do.
147. M/s Masseys, Rayapuram, Madras	Do.
148. M/s Moula Bakh & Bros., Prop. National Machinery Works, Bazar Tokarian, Amritsar	Do.
149. M/s Metro Engineering Works 335E, Bellasis Bridge Road, Shaftee Mansion, Tardeo, Bombay	Do.
150. M/s Modern Mechanical Works, Brandreth Road, Lahore	Do.
151. M/s Malwa Mechanical Workshops Kachery Road, Lahore	Do.
152. M/s M. C. Mowjee & Co., 46, Ezra Street, Calcutta	Do.
153. M/s Nagina Foundry, Railway Road, Batala	Do.
154. M/s Noon Dia Ghulam Mohd., Brandreth Road, Lahore	Do.
155. M/s Moradabad Metal & General Trading Co. Civil Lines, Moradabad	Do.
156. M/s Naraindas Industries Ltd., The Mall, Lahore	Do.
157. M/s National Electric Works, United Motors Buildings, Avanshi Road, Coimbatore.	Do.
158. M/s Nawab Bros., Raj Bhawan Buildings, 64, Beadon Road, Lahore	Do.
159. M/s Noon Mohd. & Sons, Railway Road, Lahore	Do.
160. M/s N. N. Sethi & Bros., Badamibagh, Lahore	Do.
161. M/s Noon Foundry, Jaranwala, Punjab	Do.
162. Oriental Buildings & Furnishing Co., Cannought Circus, New Delhi	Do.
163. M/s Prem Maha Vidyalaya, Vrindaban, U. P.	Do.
164. M/s Pioneer Engineering and Scales Co., (Regd.) 9, Bantra East Lane, Kadam Tala, Howrah	Do.
165. M/s Paul's Engineering Co., 207, Bulbilious Road, Howrah	Do.
166. M/s Punjab Engineering Works, G. T. Road, Batala	Do.
167. M/s Perfect Ex-Poller Cage Manufacturer, Chowk Dalgaran, Lahore	Do.
168. M/s Precision Manufacturing Co., Qadian, Punjab	Do.
169. M/s 'Peco' Engineering & Manufacturing Works, 2A, Khaamahal Street, Calcutta	Do.
170. M/s Power Tools Company, Maharaja Road, Sialkot City	Do.
171. M/s Peepul Iron & Steel Industries Ltd., La-Toucha Road, Cawnpore.	Do.
172. Quraishi Engineering Works, Outside Mochi Gate, 59, Circular Road, Lahore	Do.
173. M/s R. K. D. Sott. & Co., 115, Chandni Chowk, Delhi	Do.
174. Royal Engineering Works, Dil Mohd. Road, Lahore	Do.
175. M/s Roy's Machinery & M. I. Corporation Ltd., 104, Ultadanga Main Road, Calcutta	Do.
176. M/s Regal Engineering Co., 21A, Canning Street, Calcutta	Do.
177. M/s Royal Foundry, Batala	Do.
178. M/s Royal Engineering Works, Lyallpur (India)	Do.
179. M/s Reliable Engineering Works, Beadon Road, Lahore	Do.
180. M/s Royal Mechanical Works, Montgomery	Do.
181. M/s Rully Metal Works, Patherkuna, Relieve Road, Ahmedabad	Do.
182. M/s Robert Hudson (I) Ltd., 12, Mission Row, Calcutta	Do.

183. M/s Rohilkhand Industries Ltd., Nainital Road, Bareilly, U. P.	ungraded
184. M/s Steel Sheet Rolling Works, Badliwala, Lahore	Do.
185. M/s Sagar Engineering Works, Ram Gali No. 1, Brandreth Road, Lahore	Do.
186. M/s Satyug Industries, 85, Railway Road, Lahore	Do.
187. M/s Sher Mohd. & Sons, Brandreth Road, Lahore	Do.
188. M/s Sultan Foundry (Regd.) G. T. Road, Batala	Do.
189. M/s S. Tahal Singh Chansu Singh, Khalsa College, Lyallpur	Do.
190. M/s Sind Engineering Works, Opp. New Police Lines, Shikarpur, Sind	Do.
191. M/s Sint Engineering Works, Jaranwala, Lyallpur	Do.
192. M/s Shyam Iron Works, Shikarpur, Sind	Do.
193. M/s Shivaji Works Ltd., P. O. Tikokarwadi, Sholapur	Do.
194. M/s Standard Machinery Co., 86B, Clive Street, Calcutta	Do.
195. M/s Siemens (India) Ltd., 51/2, Hazra Road, Ballygunge, Calcutta	Do.
196. M/s Sabri Enterprize Works, Mohd. Nagar, Mayo Road, Lahore	Do.
197. M/s St., Vicent's Industries, Calicut, Malabar Coast, S. India	Do.
198. M/s Sabri Engineering Works, Railway Road, Ferozepore, Cantt.	Do.
199. M/s Shah Din Maraj Din, 85, Dil Mohammad Road, Lahore	Do.
200. M/s Supercrafts Ltd., 163, Kasba Road, P. O. Dhakuria, 24 Parganas	Do.
201. M/s Star Industries, 61A, Girish Park North, Calcutta	Do.
202. M/s New Standard Engineering Co., Ltd., 222, Bellasis Road, Bombay 8	Do.
203. M/s Steel & General Mills Co., Ltd., Moghalpura, Lahore	Do.
204. M/s Standard Industries, Chowk, Misgaban, Galwali Gate, Amritsar	Do.
205. M/s Simplex Manufacturing Co. Ltd., 25, Faiz Bazar, Daryaganj, Delhi	Do.
206. M/s T. E. Thomson & Co. Ltd., 9, Esplanade East, Calcutta	Do.
207. M/s Tata Aircraft Ltd., 102/1 Clive Street, Calcutta	Do.
208. M/s United Engineering Works, Baghanpura Road, Gujranwala	Do.
209. M/s Simson & Co., Madras	Do.
210. M/s Water Power Engineering Co., Brandreth Road, Lahore	Do.
211. M/s Western Iron Works Co., Facing Race Course Mahalaxmi Bridge, Bombay 11.	Do.
212. M/s Zaminder Foundry (Regd.) G. T. Road, Batala, Punjab	Do.
213. M/s Zam Zam Machinery Traders, Railway Road, Batala	Do.
214. M/s A. Jaffer Datto, 100, Upper Duncan Road, Bombay	Do.
21. M/s Parshottam Kheraj, Muland, Bombay.	Do.

STATEMENT No. 1

Appendix "I"

DIRECTORATE GENERAL OF MUNITIONS PRODUCTION, TOOLS DIVISION, (MACHINE TOOL CONTROL)

TABLE II.—Classification of Machine Tools ordered by country of origin and type of machine from 1-1-43 upto and including the week ending 5-6-1945.

	Centre Lathes	Capstan & Turret Lathes	Milling Machines	Drilling Machines	Grinding Machines	Screwing Machines	Welding & Cutting Machines	Wood Working Machines	Furnaces	Automatics	Boring Machines	Testing Machines	Forging Machines	Sheet Metal Working Machines	Gear Cutting and Grinding Machines	Metal Sawing Machines	Planing, Shaping and slotting Machines	Rolling Mills & Wire Drawing & Forging Machines	Specialty Machines	Others	Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
India	4486	383	157	2212	938	198	814	1630	259	5	46	38	798	1190	19	1026	1110	52	3E	584	15972
U. K.	434	220	208	431	828	79	253	184	54	12	51	83	109	231	4	75	61	20	13	125	3011
U. S. A.	436	123	151	177	313	64	87	29	12	11	38	17	57	263	9	27	66	11	5	81	1995
Unknown i.e., or U.S.A. . .	155	158	70	76	144	58	99	320	8	1	30	6	90	68	5	19	95	5	16	71	1477
Totals	5511	884	586	2890	1723	399	1253	2163	333	29	165	139	1054	1752	43	1147	1833	73	40	862	22455

NOTE (1) These statistics do not include (i) Machine Tools ordered for Ordnance Factory Projects, and (ii) Machine Tools for the Army, the Air Force, the Directorate General, Aircraft, and Oil Companies after August 1943.

(2) The statistics for India include Machine Tools ordered against which Machine Tools imported into India prior to 1st January 1943, have been expensed.

STATEMENT No. 2

Appendix "J"

DIRECTORATE GENERAL OF MUNITIONS PRODUCTION, TOOLS DIVISION. (MACHINE TOOL CONTROL)

TABLE III—Classification of Machine Tool Orders by endentor and type of machine from 1-1-43 up to and including the week ending 5-6-1945

	Centre Lathes	Capstan & Turret Lathes	Milling Machines	Drilling Machines	Grinding Machines	Screwing Machines	Welding & Cutting Machines	Wood Working Machines	Furnaces	Automatic ^a	Boring Machines	Testing Machines	Forging Machines	Sheet Metal Working Machines	Gear Cutting and Grinding Machines	Metal Sawing Machines	Planing, Shaping and Slotting Machines	Rolling Mills & Wire Drawing & Forming Machines	Foundry Machines	Others	Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
(a) Army, Navy, Airforce	285	50	42	566	329	50	144	613	76	...	18	15	472	147	3	600	182	6	4	246	3858
(b) Munitions Production	566	114	38	270	236	23	107	168	58	7	9	21	316	434	2	87	75	5	3	135	2669
(c) Aircraft Manufacture & Repairs.	110	48	42	84	122	2	17	64	15	2	7	18	9	49	..	11	26	4	0	15	664
(d) Shipbuilding and Repairs and Port Authorities	225	10	15	75	86	14	110	76	6	17	1	30	41	3	10	40	3	1	1	34	767
(e) Transport	549	105	66	278	144	24	193	64	25	4	45	8	51	77	5	53	121	9	65	1976	...
(f) Technical Training Centres.	112	3	13	61	66	7	28	13	3	...	2	10	1	14	...	31	46	...	...	6	404
(g) Communication Services	45	132	17	60	21	30	5	12	9	...	...	...	13	12	...	6	6	...	9	5	387
(h) Miscellaneous Government Departments.	85	14	13	70	30	7	84	21	21	1	1	4	2	55	...	12	11	21	1	16	419
(i) Utility Services	56	2	5	20	12	1	13	1	1	...	1	...	2	1	...	2	6	1	1	...	125
(j) Iron and Steel Works and Rolling Mills.	186	6	15	82	49	17	58	21	11	6	14	15	18	61	4	29	76	2	2	34	701
(k) Non-Ferrous Industry	90	1	3	24	12	2	21	8	14	...	...	...	...	13	1	3	11	4	...	2	209
(l) Bolts, Nuts, Rivets & Screws	48	...	9	12	17	42	3	...	2	...	...	...	12	2	...	4	6	1	...	13	171

(m) Heavy Engineering and Constructional Industry.	173	13	8	67	34	9	34	27	3	...	3	...	3	39	...	26	36	2	...	12	587
(n) Food	199	5	5	67	11	2	22	58	7	...	...	...	...	20	1	14	51	2	2	10	475
(o) Chemicals	150	5	7	46	21	2	52	12	10	...	...	1	6	28	1	19	46	...	...	12	465
(p) Textile Industry	356	35	18	100	21	6	49	58	13	2	2	...	3	36	2	19	96	...	...	9	820
(q) Electrical Industry	248	41	16	95	53	6	37	20	6	...	...	5	11	61	3	20	47	4	1	23	697
(r) Machine Tool and small Tool. manufacture	523	93	63	189	121	23	55	36	23	1	18	21	16	91	8	59	146	10	17	45	1540
(s) Hand Tools Hardware Agricultural Industries.	415	14	12	152	54	17	34	51	6	2	1	7	18	50	6	34	116	7	2	33	1031
(t) Scientific and Surgical Instruments.	128	9	5	35	18	...	7	5	3	...	...	...	3	8	...	5	20	...	...	14	260
(u) Coal, Mica & Oil	75	2	2	30	24	4	21	20	3	...	1	...	...	1	2	...	6	21	2	45	258
(v) Timber & Saw Mills	87	...	3	35	10	13	8	614	...	...	...	...	1	12	1	6	19	1	1	9	817
(w) Metal Boxes, Contain- ers Drums and Mann- ing.	100	4	2	60	24	18	27	18	1	...	...	...	5	160	...	18	45	4	2	23	500
(x) Other Civil Industries	501	26	21	148	70	6	45	132	10	1	4	2	5	117	4	25	101	...	3	23	1244
(y) Under Allocation	193	62	101	270	138	79	64	24	8	3	13	9	56	216	4	47	34	2	31	33	1412
Total	5511	834	686	2896	1723	399	1253	2163	833	29	165	139	1054	1752	48	1147	1333	78	100	862	22455

NOTE.

NOTE (1) These statistics do not include (1) Machine Tools ordered for Ordnance Factory Projects and (ii) Machine Tool Ordered for the Army, Air Force, the Directorate General, Aircraft, and Oil Companies after August 1944.

(2) These statistics include Machine Tools ordered against which Machine Tools imported into India prior to 1st January 1943 have been supplied.



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