



**GOVERNMENT OF INDIA
TARIFF COMMISSION**

**REPORT
ON
The Revision of Conversion Charges for
Bars and Rods and The Fair Retention
Price of Electric Furnace Billets Produced
by the Registered Re-Rollers**

BOMBAY 1958

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Report on the Revision of Conversion
Charges for Bars and Rods and The
Fair Retention Price of Electric
Furnace Billets Produced by the
Registered Re-Rollers 1958.



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SHRI J. N. DUTTA	<i>Member</i>
SHRI R. S. BHATT	<i>Member</i>

SECRETARY
DR. RAMA VARMA



16th May, 1957; Rs. 411 per ton from 8th July, 1957; Rs. 409 per ton from 3rd August, 1957; Rs. 413 per ton from 1st January, 1958; and Rs. 415 per ton from 1st February, 1958 to 31st December, 1960.

- (8) The retention price of electric furnace billets should be adjusted for any changes in the prices of commercial quality mild steel melting scrap, turnings/borings scrap as well as the price of ferro-manganese.
- (9) The units which have come into the category of registered re-rollers by option may approach Government for an examination of their costs, should they find their conversion charges materially different from those recommended by the Tariff Commission, after working for a year on billets.

3. Government have considered the recommendations of the Tariff Commission. The Government accept the recommendations (1) to (4) and (7) and (8).

Recommendations (5) and (6) relate to the conversion charges payable to registered re-rollers from 1st January, 1957 onwards and the adjustments to be made in the event of a change in the statutory price of billets. In view of the improved supply position of billets since 1st July, 1959, Government accept the conversion charges recommended by the Tariff Commission for the period 1-1-1957 to 30-6-1959. From 1st July, 1959 onwards the difference between the price of billets and bars and rods will be retained by the registered re-rollers as their conversion charges. The same conversion charges will be applicable to all units using billet as the raw material.

ORDER

ORDERED that a copy of this resolution be conveyed to all concerned and that it be published in the *Gazette of India Extraordinary*, Part I, Section 1.

S. BHOOHALINGAM,

Secretary to the Government of India.

GOVERNMENT OF INDIA
MINISTRY OF STEEL, MINES & FUEL
(DEPARTMENT OF IRON & STEEL)

New Delhi, the 24th September, 1960.

RESOLUTION

No. SC(C)-2(182)/56.—In their Resolution No. IS(A)-2(102)/56, dated the 12th December, 1956, Government of India said that they were of the opinion that the question whether there should be any revision in the conversion charges for bars and rods and the fair retention prices for electric furnace billets produced by the registered re-rollers from 1st January, 1957 onwards required examination and requested the Tariff Commission to conduct the necessary enquiries in this behalf and submit its report.

2. The Tariff Commission have submitted their report. Their main recommendations are :

- (1) The Iron & Steel Controller should assess the capacity of all registered re-rollers after a thorough technical examination of their existing plant and machinery as early as possible.
- (2) The Iron & Steel Controller should take necessary steps to see that the scrap arisings from controlled sources are properly distributed to the electric furnace owners.
- (3) If, on the balance of payments consideration, usable scrap is allowed to be exported as an incentive for the export of unusable scrap, it should be acquired from uncontrolled sources. This will reserve melting scrap from controlled sources for electric furnace owners.
- (4) Every registered re-roller should maintain adequate records to show yields, defectives, scrap and heat loss and should also take immediate steps to introduce suitable costing system at his works.
- (5) The conversion charges payable to the Registered Re-rollers for untested bars and rods 5/8" and above should be Rs. 122 per ton from 1st January, 1957; Rs. 133 per ton from 16th May, 1957; Rs. 130 per ton from 3rd August, 1957 and Rs. 131 per ton from 1st January, 1958 to 31st December, 1960.
- (6) The conversion charges for bars and rods payable from 1st January, 1958 which was based on billet price of Rs. 477 per ton should be adjusted for changes in the controlled prices of billets when such changes take place in future.
- (7) The fair ex-works retention price payable to the registered re-rollers for electric furnace billets untested category, should be Rs. 369 per ton from 1st January, 1957; Rs. 410 per ton from

REPORT ON THE REVISION OF CONVERSION CHARGES FOR BARS AND RODS AND THE FAIR RETENTION PRICE OF ELECTRIC FURNACE BILLETS PRODUCED BY THE REGISTERED RE-ROLLERS

1.1. The first inquiry into the conversion charges payable to Registered Re-rollers for untested bars and rods 5/8" and above and the fair retention price of untested electric furnace billets produced by such re-rollers was undertaken by the Commission in 1952. In a report dated 4th December, 1952, the Commission made the following main recommendations :—

1. The conversion charges payable to the Registered Re-rollers concerned for untested bars and rods 5/8" and above should be Rs. 130 per ton.
2. The additional conversion charges to be allowed to inland units on account of place extras should be 8.35 per cent of the place extras.
3. The fair retention price of untested electric furnace billets produced by the Registered Re-rollers should be Rs. 310 per ton.
4. So long as the present system of place extras on scrap continues, the price of electric furnace billets produced by the J. K. Iron and Steel Company, Kanpur, should be suitably adjusted on account of the place extras on scrap.
5. The conversion charges for bars and rods and the fair retention price of electric furnace billets specified above should remain in force up to 31st December, 1955.

The above recommendations were accepted by Government, *vide* their Resolution (Tariffs) No. 3-T(2)/51 dated 22nd April, 1953. Government also decided that the increased conversion charges for bars and rods and the fair retention price of electric furnace billets should take effect from 1st January 1953 and should remain in force for a period of three years, *i.e.* up to 31st December, 1955. Subsequently, the period was extended by one year, *i.e.* up to 31st December, 1956

1.2. The Commission also made the following recommendations:—

- (a) As the electric furnaces are very old and are being operated at present almost to full capacity, depreciation has been provided at the rate of 9.82 per cent. on the original block as has been allowed in the case of the Tata Iron and Steel Company Ltd. This depreciation has been provided for on the condition that an amount equal to this allowance will be set aside out of the gross profits made every year for the rehabilitation of the electric furnaces.
- (b) The Registered Re-rollers should take steps to institute a proper system of costing at their works as early as possible.

- (c) Since the production of steel in India is increasing and plans are in hand for major expansions in the near future, the desirability of making larger supplies of billets available to the re-rolling industry should be kept steadily in view and the Main Producers should be asked to make due provision for the requirements of this industry in their expansion projects.
- (d) Stricter control should be exercised over the exports of scrap with a view to ensuring that no melting scrap which can be used by the electric furnace industry is allowed to be exported.
- (e) The present system of place extras on scrap deserves re-examination by Government.
- (f) A Committee should be appointed to examine the position and prospects of the re-rolling industry and to suggest suitable measures for its re-organisation.

It was stated in Government's Resolution No. 3-T(2)/51 dated 22nd April, 1953 referred to above that recommendations (c) to (f) were receiving attention. As regards recommendations (a) and (b), Government expressed the hope that they would be implemented by Registered Re-rollers.

2.1. The extent to which the recommendations listed in paragraph 1.2. have been implemented is briefly indicated below :—

**Implementation of
recommendations
made in the last
report (1952)**

Recommendation (a).—We are informed that some of the units have taken steps to rehabilitate their old electric furnaces. For instance, Mukand Iron and Steel Works Ltd., Bombay has stated that it has spent since 1952 about Rs. 7,89,000 for rehabilitation of electric furnaces (including about Rs. 3 lakhs for the purchase of a two ton furnace). The National Iron and Steel Co. Ltd., Calcutta, has replaced an old furnace at an approximate cost of Rs. 3.50 lakhs. The Bhartia Electric Steel Co. Ltd., Calcutta has reserved one lakh of rupees for partial rehabilitation of its electric furnaces, and has placed an order for an electric crane.

2.2. *Recommendation (b).*—Some of the units have claimed that they have taken action to introduce a proper costing system. Of the units visited by our Cost Accounts Officers, it was found that only Mukand Iron and Steel Works Ltd., Bombay, and Bhartia Electric Steel Co. Ltd., Calcutta have introduced some kind of costing system. But even in those cases the cost data furnished were incomplete.

2.3. *Recommendation (c).*—We were informed that it was not possible for the Iron and Steel Controller to allot full quotas to Registered Re-rollers due to demands from quarters which required higher priority.

2.4. *Recommendation (d).*—The general policy has been not to allow export of such varieties of melting scrap as can be utilised in the country. Actual shipments are subject to inspection by the Inspectorate of the Iron and Steel Control. At the public inquiry there was,

however, general complaint that the administrative arrangements made for inspection were not as satisfactory as would ensure shipment of only the permissible types of scrap. It is understood that the Iron and Steel Controller appointed sometime ago a Scrap Investigation Committee to inquire into this and other allied matters and that the report of the committee is under his consideration.

2.5. *Recommendation (e).*—The system of “place extras” was abolished with effect from 22nd March, 1954.

2.6. *Recommendation (f).*—Government appointed a committee (with Shri B. B. Saksena, Joint Secretary, Ministry of Commerce and Industry as Chairman) in July, 1956 with the following terms of reference :—

- (a) study the raw material requirements of the existing electric furnaces, foundries and re-rolling mills in the country and assess the kind of expansion that is possible having regard to the availability of the raw materials in the future ;
- (b) suggest ways and means of improving the efficiency of these units and recommend steps that should be taken to make them economic and independent of any form of subsidy in regard to the prices at which they obtain their raw materials ;
- (c) assess the additional capacity that it may be desirable to set up in the light of the developments which are taking place in other sectors of the economy and the considerations set out in (a) and (b) above ;
- (d) indicate suitable locations for the new units that may be set up having regard to the importance of promoting regional development and other relevant considerations such as transport facilities and raw material supplies ; and
- (e) formulate principles which should govern the examination of the applications for setting up re-rolling mills which have been received in response to the Press Note of the 11th April, 1956.

2.7. The Committee submitted its Report to Government in April, 1957. Government's decisions on this Report were announced in the Resolution of the Ministry of Steel, Mines and Fuel No. PLGB-55(33)/57 dated 13th November, 1957, *vide* Appendix I.

3. The present inquiry into the conversion charges for bars and rods and the fair retention price of electric furnace billets with effect from 1st January, 1957 was undertaken under Section 12(d) of the Tariff Commission Act, 1951, on a reference received from the late Ministry of Heavy Industries. A copy of Government Resolution on the subject is given in Appendix II.

**Present
inquiry**

4.1. On 19th December, 1956, the Iron and Steel Controller, Calcutta was requested to furnish a complete list of the names and addresses of Registered Re-rollers and electric furnace owners to enable the Commission to issue questionnaires. Later, he was requested to furnish a detailed memorandum on the present position

of the re-rolling industry in regard to matters germane to this inquiry. On 4th September, 1957, questionnaires were issued to Registered Re-rollers and electric furnace owners to elicit information in regard to their rated capacity, production cost and financial position. The Steel Re-rolling Mills' Association of India, Calcutta was asked to furnish a memorandum on the industry with particular reference to the issues raised in the questionnaire for producers. A memorandum was also called for from the Iron, Steel and Hardware Merchants' Chamber of India. A list of firms or bodies to which the Commission's questionnaires/letters were issued and from which replies or memoranda were received is given in Appendix III.

4.2. The names of factories visited by the Commission along with the dates of visit are given below :—

Name of the factory	Date of visit	Name of Chairman/Member who visited the factory
J.K. Iron and Steel Co. Ltd., Kanpur	26th December, 1957.	Shri K. R. Damle, <i>Chairman</i> . Dr. S. K. Muranjan, <i>Member</i> . Shri R. S. Bhatt, <i>Member</i> .
Mukand Iron and Steel Works Ltd., Bombay.	24th January, 1958.	Shri K. R. Damle, <i>Chairman</i> . Shri J. N. Dutta, <i>Member</i> . Shri R. S. Bhatt, <i>Member</i> .
Bengal Rolling Mills Ltd., Calcutta	10th February, 1958.	Dr. S. K. Muranjan, <i>Member</i> . Shri J. N. Dutta, <i>Member</i> .
Bhartia Electric Steel Co. Ltd., Calcutta	11th February, 1958.	Dr. S. K. Muranjan, <i>Member</i> . Shri J. N. Dutta, <i>Member</i> .

4.3. The Commission selected 6 units for estimating the cost of production of bars and rods and 3 units for estimating the cost of production of electric furnace billets. The names of units, names of Cost Accounts Officers who examined the costs and the dates of their visits to the respective factories are given below :—

Name of the Factory	Date of visit	Name of C.A.O./R.O.
Bhartia Electric Steel Co. Ltd., Calcutta.	19-6-57 to 1-7-57 & 5-7-57 to 10-7-57.	Shri P. M. Menon (A.C.A.O.)
Bengal Rolling Mills Ltd., Calcutta.	2-7-57 to 10-7-57	
J. K. Iron and Steel Co. Ltd., Kanpur.	13-7-57 to 23-7-57	

Name of the Factory	Date of visit	Name of C.A.O./R.O.
Mukand Iron and Steel Works Ltd., Bombay.	11-6-57 to 18-6-57 and 29-10-57 to 6-11-57.	Shri S. R. Mallya (R.O.)
Mukand Iron & Steel Works Ltd., Bombay.	29-10-57 & 30-10-57 & 3-1-58 and 7-1-58 to 9-1-58.	Shri P. M. Menon (A.C.A.O.)
Delhi Iron & Steel Co. Private Ltd., Ghaziabad.	18-7-57 to 24-7-57.	Shri S. R. Mallya (R.O.)
Shree Maharaja Steel Mills Private Ltd., Kapurthala.	28-7-57 and 29-7-57	Shri S. R. Mallya (R.O.)

4.4. We held discussions with the representatives of Registered Re-rollers and electric furnace owners on 3rd March, 1958. A list of those who attended the discussions is given in Appendix IV. We also held separate discussions with the representatives of the units selected for cost investigation on 4th and 5th March, 1958.

5. Details of the price arrangements which were in force up to the end of 1952 are given in paragraph 4 of our last Report (1952). From 1st January, 1953 conversion charges payable to the Registered Re-rollers for untested bars and rods, 5/8" and above were fixed at Rs. 130 per ton by us. Adjustment in the conversion charges was later made according to changes in the price of billets. Actual conversion charges paid from time to time during the period from 1st January, 1953 to 31st December, 1956 are given below together with the controlled price for untested billets :—

(Rs. per ton)

Period	Price for untested billets		Bar price	Basic conversion rate for Registered Re-rollers
	Statutory price	Price for Registered Re-rollers		
	Rs.	Rs. As.	Rs.	R. As.
1-1-53 to 28-2-54	286	265 8	393	127 8
29-3-54 to 31-3-55	286	265 8	400	131 8
1-6-55 to 30-3-55	292	272 0	400	128 0
1-7-55 to 30-9-55	320	300 0	430	130 0
1-10-55 to 30-4-56	385	365 0	505	140 0
1-5-56 to 10-6-56	385	368 0	505	137 0
11-6-56 to 31-12-56	407	390 0	530	140 0

N.B.—The system of place extras on billets was in vogue up to 10th June, 1956. Inland Re-rollers were, on that account, paid additional conversion charges.

From 1st January, 1957, the Iron and Steel Controller has allowed provisionally the following conversion charges pending our recommendations :—

(Rs. per ton)

Date	Price for untested billets		Basic conversion rate	
	Statutory price	Price for the Registered Re-rollers	Bar Price	for Registered Re-rollers
	Rs.	Rs.	Rs.	Rs.
1-1-57	407	407	530	123
9-3-57	411	411	530	119
16-5-57 onwards	477	477	600	123

As regards electric furnace billets produced by Re-rollers, the retention price was fixed at Rs. 310 per ton with effect from 1st January, 1953 in accordance with our recommendations in 1952. That price remained in force up to 31st March, 1956. Since then there were three revisions consequent upon changes in the controlled price of scrap and the rate of excise duty. The retention price of electric furnace billets from 1st April, 1956 is given below :—

	Rs. per ton
From 1-4-1956 to 28-9-1956	323.00
From 29-9-1956 to 15-5-1957	346.70
From 16-5-1957 to date	385.70

NOTE.—The retention price from 1-1-1957 is provisional subject to adjustment on the basis of the Government's decision on the Commission's recommendations on the subject.

6.1. At the time of the last inquiry there were 17 Registered Re-rollers. Their annual installed capacity on single shift basis was estimated at 95,724 tons and their production during the first nine months of 1952 was 50,176 tons. In connection with the present inquiry, the Iron and Steel Controller has informed us that the number of Registered Re-rollers has increased to 61, though it should be noted that 41 of them were recognised as Registered Re-rollers only in 1957.

6.2. *Assessment of capacity of the re-rolling industry.*—The first assessment of capacity of the industry was made in 1941, by Shri A. Samad, then Assistant Chief Metallurgist to the Government of India. He estimated that the capacity of 38 mills then established in the country excluding the mills now known as Secondary Producers was

60,000 tons per annum on single shift basis. A re-assessment was made by Government in 1946 with the assistance of the Steel Re-rolling Mills' Association. There were 20 registered mills and 72 un-registered mills in operation and the capacity was fixed at 175,614 tons per annum on single shift basis. Subsequent to this re-assessment several mills improved their plant and machinery and some even made additions to their capacity. Indeed, in 1955 claims were made by a number of re-rolling mills that their capacity was much higher than that assessed in 1946. Thereupon the Iron and Steel Controller issued a questionnaire on technical data in order to ascertain the factual position relating to the capacity of each unit. The response to the questionnaire was not satisfactory and it also came to the notice of the Iron and Steel Controller that certain re-rolling mills, had, subsequent to the despatch of their replies, installed additional capacity, some without proper sanction. The Saksena Committee was seized of the position and it approved, for the purpose of assessment of capacity of individual units, a revised questionnaire, which was circulated by the Iron and Steel Controller. As the scrutiny of the replies from the re-rolling mills could not be completed by the time the Saksena Committee submitted its report, it accepted, on a provisional basis, an estimate of capacity as on 1st November, 1956 by the Iron and Steel Controller. According to this estimate, the capacity of re-rolling mills of the various categories including Secondary Producers was about 700,000 tons per annum on single shift basis.

Actual production of the Registered Re-rollers was 83,349 tons in 1953, 109,872 tons in 1954, 120,306 tons in 1955, 181,307 tons in 1956 and 177,731 tons in 1957.

6.3. We realise that a number of factors have to be taken into account in determining the capacity of a re-rolling mill. We, however, feel that a fresh reliable assessment of the capacity of the re-rolling industry should be made as early as possible. This is necessary in order to determine whether there is scope for further expansion of capacity both quantitatively and qualitatively, to plan production by various units, and to arrange for supply of raw materials. We recommend, therefore, that the Iron and Steel Controller should assess the capacity of all Registered Re-rollers after a thorough technical examination of their existing plant and machinery as early as possible.

6.4. *Electric furnace billets.*—As regards electric furnaces, there were five electric furnace owners who were also Registered Re-rollers at the time of the last inquiry. Their annual capacity was estimated at 42,000 tons, and their production for 1952 (nine months only) was 28,128 tons. During the course of the present inquiry, the Iron and Steel Controller has informed us that there are now 7 Registered Re-rollers who have their own electric furnaces. The capacity of these 7 electric furnace owners is stated to be 91,520 tons. Actual production of the five electric furnace owners namely, National Iron, Bharti Electric, J. K. Iron, Mukand Iron and Krishna Steel was 42,199 tons in 1953, 52,839 tons in 1954, 53,346 tons in 1955, 57,551 tons in 1956 and 57,183 tons in 1957. The two units namely, Singh Engineering

Works and Hindustan Iron which installed electric furnaces in 1957 produced 1,645 tons (July-December, 1957) and 3,179 tons (March-December 1957) respectively. The production figures of individual Registered Re-rollers relating to (a) bars and rods and (b) electric furnace ingots/castings are given in Appendices V and VI respectively.

7.1.1. *Billets*.—At the time of the last inquiry the position regarding the supply of billets was that the quantity allotted to the Registered Re-rollers from production of the main producers was the maximum available then because imports were limited owing to high prices of foreign billets. We had, there-

Raw materials fore, recommended that since plans for major expansions of the steel works of the Main Producers were taken in hand, they should be asked to make due provision for the requirements of the re-rolling industry in their projects. These plans of expansion are still in progress and in the meantime demand for billets from various quarters in the country has increased. In this circumstance it was not possible for the Iron and Steel Controller to allocate the normal quantities of billets to Registered Re-rollers from indigenous sources. However, from 1955 to 1957 increased supplies of billets were available from imports and the Iron and Steel Controller has endeavoured to meet the requirements of the industry by ensuring an even flow of supplies during this period. The allocation of billets to Registered Re-rollers, numbering about 20, who were in the original list, is given in the following table :—

				(In tons)
Year	Indigenous	Imported	Total billets supplied	
1955	131,934	58,300	190,234	
1956	59,187	131,193	190,380	
1957	56,453	136,380	192,833	

In addition to the above, 80,864 tons of billets, consisting of 60,027 tons from indigenous sources and 20,837 tons imported were allotted to 41 Registered Re-rollers who were taken on the list in 1957. During the discussion at the public inquiry we were informed that though the overall supply position for the industry as a whole may be regarded as fairly satisfactory, at least so far as the original Registered Re-rollers were concerned, there were grounds for complaint in regard to allotments to individual units. It was represented that the Iron and Steel Controller takes into account the installed capacity of individual units as assessed in 1946 for purposes of allotment of billets whereas some of them have already expanded their capacity. Further, with limited supplies of billets available, he has to plan indents of works of high priority on selected re-rollers and arrange to supply billets accordingly. It would, therefore, seem that the allotment of billets

is made at present not strictly in conformity with the installed capacity of individual units but according to the programme of production planned on individual units.

7.1.2. As regards supplies of billets in future, we have been informed by the Iron and Steel Controller that according to his estimate the total requirements of 61 Registered Re-rollers are approximately as follows :—

		Tons per annum
(a) Original Registered Re-rollers	20	158,000
(b) Opted Registered Re-rollers	41	72,000
		<hr/> 230,000 <hr/>

It is expected that in 1958-59 the indigenous billets supply will improve as a result of the progress in the expansion programmes of the Main Producers. The anticipated availability of billets for that year is approximately 458,000 tons including imports of 30,000 tons. Of this quantity, it is estimated that 224,000 tons will be available for the Registered Re-rollers as compared with their estimated requirements of 230,000 tons. For the subsequent two years, it is not possible to visualise the situation owing to the uncertain position both regarding imports as well as the extent of indigenous supplies of billets. By 1960-61, however, the position is expected to improve when the Bhilai and Durgapur plants go into production.

7.2.1. *Scrap, Borings and Turnings.*—The main raw materials required by Electric Furnace Owners are melting scrap, steel borings and turnings. In our last report we had recommended that strict control should be exercised over exports of scrap with a view to ensuring that no melting scrap which could be used by the electric furnace industry was exported. We have been informed by the Iron and Steel Controller that in framing the export policy for scrap from time to time, due regard was paid to the above recommendation. He has furnished the following figures of export of scrap since 1955 :—

	Tons
1955	120,892
1956	174,286
1957	97,418
1958 (upto 10th March, 1958)	4,112

It appears that exporters in the latter half of 1957 represented that they were unable to ship Nos. 2 and 3 quality sheet cuttings as overseas buyers, especially, in Japan and Western Europe, were reluctant to take them. They were, however, willing to consider the purchase of such scrap from India if heavy melting scrap was also made available to them. The arisings of No. 2 and No. 3 sheet cuttings are considerable and there being hardly any capacity in the country to utilise them,

exports are for the time being the best means of their disposal. In order to give impetus to the export of such scrap which would otherwise be wasted, Government have permitted, with effect from January 1958, export of 1 ton of heavy melting scrap for every 5 tons of unusable scrap. We are informed that even with this incentive the export of Nos. 2 and 3 quality sheet cuttings during the first half of 1958 was only 1/5th of the tonnage shipped during the corresponding period of last year.

7.2.2. The controlled prices of scrap of commercial quality and borings and turnings since January 1956 were as follows:—

SCRAP OF COMMERCIAL QUALITY

	Rate in Rs. per ton
From 1st January to 23rd March, 1956	60 ex-site
From 24th March to 28th September 1956	75 ex-site
From 29th September, 1956 onwards	100 ex-site

(In the case of exporters the price is Rs. 115 per ton plus road transport charges.)

BORINGS AND TURNINGS

	Rate in Rs. per ton
From 1st January to 23rd March, 1956	15 ex-site
From 24th March to 28th September, 1956	15 ex-site
From 29th September, 1956 onwards	25 ex-site

(In the case of exporters the price is Rs. 40 per ton plus road transport charges.)

It was represented to us that the market prices of scrap and steel borings and turnings were much higher than their controlled prices. The market price of commercial quality scrap was reported to be Rs. 140 per ton as against the controlled price of Rs. 100 per ton. Similarly borings and turnings are stated to be selling at Rs. 75 per ton against their controlled price of Rs. 25 per ton. Prices in overseas markets being much higher, they exert considerable pressure on internal prices as well as on demand for export. It was also mentioned that stockists found it profitable to allow scrap and turnings and borings to rust and thereafter to export them rather than supply the materials to electric furnace owners at controlled prices. The representatives of electric furnace owners also stated that the present arrangements for inspection of scrap before export were not satisfactory and that large quantities of melting scrap were being exported as unusable scrap. They stated that although they together with the Inspector of the Iron and Steel Control are required to inspect, before export, the materials intended for shipment, it was not possible to exercise proper check because what was available for inspection were heaps of 10 to 40 tons loaded on barges.

7.2.3. The main sources of melting scrap are the Railways, major engineering undertakings and port trusts. The Iron and Steel Controller has stated that excluding the Railways all controlled sources have been advised from October, 1956 to make direct supplies to electric furnace owners in specified proportions and with reference to their locations. In regard to Railways, the above procedure was in force up to the beginning of 1957. The Railway Board then imposed a ban on the supplies of scrap. We are informed that the Railway Board has now agreed to resume supplies provided the scrap supplied by the Railways is allowed to be converted into rolled sections and castings required by the Railways, in preference to other demands. This arrangement has been agreed to. According to the Iron and Steel Controller the estimated arisings of melting scrap from controlled sources are, on an average, between 80,000 and 95,000 tons a year. The current arisings from all sources including uncontrolled sources are about 200,000 tons a year. The ratio of arisings from controlled sources to uncontrolled sources appears to be of the order of 45 to 55. The uncontrolled sources are relatively small engineering concerns, sugar, jute and textile mills and small workshops.

7.2.4. The points at issue are (a) whether the electric furnace owners are getting adequate quantities of melting scrap and (b) whether it is desirable to allow melting scrap usable in the country to be exported as an incentive for the export of unusable scrap. On the first point there is no doubt that electric furnace owners are at times facing difficulties in obtaining adequate quantities of scrap at controlled prices and that in order to keep their furnaces in operation they have to buy scrap in the open market at higher prices. Production of steel ingots and liquid metal for castings by Registered Re-rollers having electric furnaces has remained steady over the last three years as will appear from the following :—

Year	Production tons
1955	53,346
1956	57,551
1957	57,183

The representative of J. K. Iron observed that since electric furnace owners have often to make purchases of scrap at market prices the existing control over scrap prices be lifted. His view was that prices in the internal market would then find their level and better scrap would become available to the industry. It has, however, not been possible for us to examine this suggestion in all its bearings in the absence of adequate data. It is, however, essential that sufficient and regular supplies of scrap should be available to electric furnace owners at a reasonable price. Since 45 per cent. of scrap arisings originates from controlled sources it should be possible to solve, in a large measure, the present difficulties of supply, if better liaison was established

between controlled sources and electric furnace owners. The Iron and Steel Controller, in consultation with electric furnace owners, should also examine whether new sources of scrap supply could be brought under control. We recommend that the Iron and Steel Controller should take necessary steps to see that scrap arisings from controlled sources are properly distributed to the electric furnace owners. The balance of their requirements will have to be obtained from uncontrolled sources, for which furnace owners themselves will have to take necessary steps. In regard to the second point, in the absence of sufficient information, it is difficult to express any opinion whether we have any surplus usable scrap which could be exported with unusable scrap. We suggest that if on balance of payments considerations usable scrap is allowed to be exported as an incentive for export of unusable scrap it should be acquired from uncontrolled sources. This will reserve melting scrap from controlled sources for electric furnace owners.

8.1. We have examined the data collected by our Cost Accounts Officers regarding the costs incurred by six units, namely, Mukand Iron and Steel Works, Bombay, Bhartia Electric Steel Co., Calcutta, J. K. Iron & Steel Co., Kanpur, Delhi Iron and Steel Co., Ghaziabad, Bengal Rolling Mills, Calcutta, and Shree Maharaja Steel Mills, Kapurthala, for conversion of mild steel billets into sections (5/8" and above). These units were selected in consultation with the Iron & Steel Controller as representative of the industry as a whole. The rated capacity and the actual production of the six units are given below. The rated capacity in each case is as furnished by the Company.

**Conversion costs
for bars and rods**

	Annual capacity on single shift basis	Actual production		
			Tons	Tons
Mukand	30/36,000	32,089	Year ended 31st March, 1957.	
Bhartia	36,000	19,673	Year ended 31st December, 1957.	
J.K. Iron	18,000	17,385	Year ended 30th April, 1957.	
Delhi Iron	7,200	6,980	Year ended 31st March, 1957.	
Bengal Rolling	4,300	618	April/May, 1957.	
Shree Maharaja	1,600	60	17th May to 31st May 1957.	

The annual capacity of Mukand was 15,000 tons in 1952. Since then, its capacity has been increased to 36,000 tons. Mukand, whose rolling mills and electric steel furnace were situated in Sewri, has moved

its factory to a new site at Kurla. Various improvements in the rolling mills, such as better design in the layout, modernization of reheating furnace, replacement of stands of improved design, installation of overhead crane and introduction of feeding rolls, coolers, sliding walls, lifting tables, etc., were made at the time of shifting to the new site. It has got a continuous type of reheating furnace. Bhartia has also shifted its rolling mills to new premises and has practically replaced its old mills with modern plant and equipment. The annual capacity of the rolling mills has increased to 36,000 tons from 6,300 tons in 1952. The new factory is equipped with two continuous type reheating furnaces, two overhead electric cranes in addition to other auxiliaries such as gas producers, billet and bar shearing machines etc. J. K. Iron also has made improvements in its rolling mills after 1952 by installing a new plant to replace the old mill partially, which has the effect of raising its annual rolling capacity from 9,600 tons to 18,000 tons. Delhi Iron & Steel Company has a 6" mill and an 8" mill of which the 6" mill is being replaced by a 10" mill. The range of sizes rolled at present is $\frac{1}{4}$ " to 1" and with the new mill coming into operation, the factory will roll $\frac{1}{4}$ " to $1\frac{1}{4}$ " rounds and bars, flats and hoops. Bengal Rolling Mills and Shree Maharaja Steel Mills were previously engaged in rolling finished products, namely, bars and rods, out of re-rollable scrap. As they opted to roll from billets alone in future they have been admitted into the category of Registered Re-rollers from early 1957.

8.2. Our estimates of conversion charges payable to the industry are based on an examination of the cost data for the year ended 31st March, 1957 in the case of Mukand Iron & Steel Works Ltd., the year ended 31st December, 1956 in the case of Bhartia Electric Steel Co., Ltd., the year ended 30th April, 1957 in the case of J. K. Iron and Steel Co. Ltd., and the year ended 31st March, 1957 in respect of Delhi Iron and Steel Co. Private Ltd., Bengal Rolling Mills Ltd., and Shree Maharaja Steel Mills Private Ltd., had, at the time of our investigation, operated their mills on billets only for short periods i.e. for 10 weeks (commencing from the middle of March) and 17 days (in May, 1957) respectively. We were unable to accept the conversion costs of the last two units on the basis of the limited information available for a short period. Moreover, in none of these units accounts are maintained in a manner which would permit determination of costs with reasonable accuracy. A proper assessment of the costs of conversion of billets into bars and rods in respect of these and similar units is possible only after they have been able to operate their mills on billets for at least one full year during which period proper accounts should be maintained. The units which have come into the category of Registered Re-rollers by option may approach Government for an examination of their costs, should they find their conversion charges materially different from those recommended by us, after working for an year on billets.

8.3. As stated in paragraph 2.2 most of the original Registered Re-rollers have not taken steps to introduce a proper system of costing at their works. They do not even maintain adequate records to show

yield, defectives, scrap and heat loss. We, therefore, recommend that every Registered Re-roller should maintain adequate records to show yield, defectives, scrap and heat loss, and should also take immediate steps to introduce suitable costing system at his works.

8.4. There are important variations in regard to equipment and process of production among the four units taken as representative for determining the conversion charges of the industry as a whole. Mukand, Bhartia and J. K. Iron roll bars and rods from electric furnace steel produced by them as well as from purchased billets. While the conversion of billets into bars and rods forms only a part of the manufacturing activities of Mukand and Bhartia, J. K. Iron confines its activities mainly to the manufacture of bars and rods. J. K. Iron, because of the bigger size of the ingots produced by it, has generally to convert them into billets whereas Mukand and Bhartia roll their electric furnace ingots, which are smaller in size, directly into finished products. Delhi Iron has no electric furnace of its own and produces bars and rods from purchased billets. As an ancillary activity it manufactures oil expellers and other machinery parts. The output of Mukand and Bhartia comprises largely of sections below 5/8" rounds and flats while J. K. Iron and Delhi Iron produce more of the heavier sections.

8.5. The conversion charges determined by us relate to bars and rods, 5/8" and above. Under the Iron and Steel Controller's "Extras List", tested sections and sections below 5/8" are entitled to extras. Hence, in order to determine the conversion charges for untested sections, 5/8" and above, we have deducted the 'extras' earned by the costed units from their total conversion costs.

8.6. In determining the conversion charges for the future, we have taken due account of the likely variations in the different elements of cost on the basis of the latest available information. The volume of production has been assumed at almost the same level as in the actual period investigated. This was done after consultation with the Iron and Steel Controller in regard to the supply position and future allotment of billets to these units. Three units, namely, Mukand, J. K. Iron and Delhi Iron are expected to work full single shift while Bhartia is expected to work just over half a shift. The cost of billets has been taken at the existing rate of Rs. 477 per ton. The cost of labour has been worked out after allowing for normal increments. Actual increases in the prices of stores, coal and coke and in the railway freight have also been provided for. In the case of Bhartia, the levy of duty by West Bengal Government on electric power consumed in lighting as well as for industrial purposes has also been included. We have taken account of the revision in the controlled prices of roll spoils, defectives and cuttings as well as commercial quality melting scrap in arriving at the credit for scrap in the conversion cost. In respect of J. K. Iron, we consider the yield of 88.85 per cent. obtained by the Company rather low in view of the fact that comparatively heavier sections are rolled in its mills. We have, therefore, assumed a yield of 90 per cent. from billets to bars and rods in our estimates of cost

for this unit. Only in the case of Mukand, we have allowed a lower yield at 88 per cent, as it rolls lighter sections and its yield during the costed period was only 86 per cent. In the case of J. K. Iron, we have limited the Director's remuneration to Rs. 50,000 per annum for the activities connected with the manufacture and conversion of billets into bars and rods. As regards Delhi Iron and Steel Co., we were unable to accept the Company's claim for increases in wages and salaries, repairs and maintenance and administrative overheads as in our view these items of expenditure were on the high side and there was scope for economy. In 1952, we admitted the annual bonuses paid by the Re-rollers to their employees as part of their cost of production since the Re-rollers had no system of production or incentive bonus payments. As Mukand, Bhartia and J. K. Iron have now introduced schemes of production bonus for their employees we have not allowed the annual bonus as an item of cost.

8.7. As in 1952, we do not consider it necessary to fix a lower conversion charge for defectives and cuttings for the Re-rollers and, hence, we have determined the conversion charges for good material only after allowing credit for the realisations from sales of defectives and cuttings from their total rolling cost.

8.8. We have allowed depreciation at rates admissible under the Income-tax rules. As regards overheads, the representatives of the Re-rollers represented that the margin of profit to be allowed to them should be fixed in such a manner as to enable them to meet obligations like payment of managing agents' commission, annual bonus, interest charges and fair dividend to shareholders. They have further requested that adequate provision for reserves, rehabilitation and development should also be made while determining the rate of profit to the industry. We have carefully considered the requests made by the representatives of the re-rolling industry and taking all factors into account come to the conclusion that 10 per cent on the capital employed would give an adequate return to the industry. Profit at 10 per cent has, therefore, been allowed on the estimated capital employed in respect of each of the costed units. Although a margin for contingencies of Rs. 5 per ton was provided by us in the previous inquiry, we do not consider it necessary to make any provision for contingencies in the present estimates as we have taken due account of all the known variations in the conversion costs on the basis of the latest available data.

8.9. The following table shows the conversion charges determined by us for the four costed units, together with the average cost of the four units:—

	(Rs. per ton)				
	Mukand	Bhartia	J.K.	Delhi	Average
Gross value of metal loss . . .	65.59	40.74	52.99	52.95	55.27
Less credit for recovery . . .	29.63	9.92	19.58	11.24	20.62

(Rs. per ton)

	Mukand	Bhartia	J.K.	Delhi	Average
Net value of metal loss	35'96	30'82	33'41	41'71	34'65
Above metal cost	56'43	35'55	65'75	77'08	55'46
Conversion cost	92'39	66'37	99'16	118'79	90'11
Depreciation	6'45	16'78	4'94	4'44	8'45
Profit	30'30	40'30	29'60	28'70	32'45
FAIR CONVERSION COST	129'14	123'45	133'70	151'93	131'01

According to the terms of our reference we are to recommend the conversion charges for bars and rods from 1st January, 1957. As stated in paragraph 8.6 our calculations of fair conversion charges are based on the latest data available. For example, we have adopted the price of billet at Rs. 477 per ton which became effective from the 16th May, 1957. The price of billet was Rs. 411 per ton from 9th March, 1957 and prior to that date, it was Rs. 407 per ton. There were certain other changes in the elements of conversion costs which had taken place on various dates. The surcharge on railway freight at 6½% was levied from 1st July, 1957 and statutory price of coal was increased by Rs. 1.50 per ton with effect from 8th July, 1957. In our calculations of conversion costs for Bhartia, we have allowed for increase in its head office rent and for electricity duty from 1st January, 1958 and 1st February, 1958, respectively. The controlled maximum prices for roll spoils, defectives and cuttings were also revised upward with effect from 3rd August, 1957. In fixing the conversion charges from 1st January, 1957, the increases after 1st January have been taken note of and adjustments made so as not to allow any extra payment to the producers.

8.10. The adjusted fair conversion costs for each of the units together with the average conversion charges payable to the Re-rollers are given in the following table :—

(Rs. per ton)

	Mukand	Bhartia	J.K.	Delhi	Average
From 1-1-57 to 8-3-57	120'11	113.06	124'51	141'85	121'50 or 122
From 9-3-57 to 15-5-57	120'85	113.58	125'14	142'48	122'15 or 122
From 16-5-57 to 7-7-57	133'06	122.21	135'52	152'86	132'87 or 133
From 8-7-57 to 2-8-57	133'06	122.55	135'92	153'38	133'10 or 133
From 3-8-57 to 31-12-57	129'14	121.09	133'70	151'93	130'42 or 130
From 1-1-58 to 31-1-58	129'14	121.82	133'70	151'93	130'60 or 131
From 1-2-58 onwards .	129'14	123.45	133'70	151'93	131'01 or 131

On the basis of the above, we recommend that the conversion charges payable to the Registered Re-rollers for untested bars and rods 5/8" and above should be as given below :—

Rs. 122 per ton from 1st January, 1957,

Rs. 133 per ton from 16th May, 1957,

Rs. 130 per ton from 3rd August, 1957, and

Rs. 131 per ton from 1st January, 1958.

The conversion charges for bars and rods payable from 1st January, 1958 which are based on a billet price of Rs. 477 per ton should be adjusted for changes in the controlled prices of billets when such changes take place in future.

8.11. Although we recommended in 1952 a special conversion cost for the inland units due to the Place Extras paid by them on purchases of billets, the necessity for such a consideration no longer exists as the price of billets had been fixed ex-destination rail head from 11th June, 1956. We have also carefully considered the difference in the average conversion charges recommended above and the conversion costs for Delhi Iron and Steel Company. We are satisfied that it would be possible for Delhi Iron and Steel Company to bring down its costs to the level indicated by the average by striving to improve its yield, reducing the heat loss and exercising stricter control over production and its overhead expenses.

9.1. We have examined the cost of production of electric furnace billets at three factories, namely, Mukand Iron & Steel Works, Bhartia Electric Steel Company and J. K. Iron & Steel Company. The periods selected for cost investigation in the case of each unit were the same as those for conversion charges for bars and rods. Mukand Iron & Steel Works has two electric furnaces, one of which is of 4 ton capacity and the other of 2 ton capacity. The annual rated capacity of the two furnaces is estimated at 14,400 tons of liquid metal. The Company produces liquid steel for mild steel ingots, for foundry castings and spring steel, tool and alloy steel ingots. The liquid steel used for mild steel ingots for rolling bars and rods, both untested and tested categories, forms about 38 per cent. of the total production from the electric furnaces. The size of the mild steel ingot produced in 1956/57 was $3\frac{1}{2}" \times 4\frac{1}{2}"$. The Company does not generally convert the electric furnace ingots into billets before rolling them into finished products. This being the case, we have estimated the cost of converting ingots into billets on the basis of the difference between the above metal costs of ingots directly rolled into sections and those of billets into finished steel. The quantity of ingots required to produce one ton of billet allowing for heat loss and scrap recovery, has been estimated in consultation with the Iron & Steel Controller. Bhartia has 3 electric furnaces, the annual capacity of which was estimated at about 16,000 tons of hot metal. About 30 per cent. of the liquid metal is used for making mild steel ingots and

**Fair retention
price of electric
furnace billets**

the rest for the manufacture of various types of castings. No mild steel of the tested category is produced in this factory. The ingots produced by this Company, being smaller in size, viz. 4" square, are directly rolled into finished steel and therefore the costs of converting ingots into billets have been estimated on the same basis as in the case of Mukand. The electric furnace installed in J. K. Iron and Steel Company is of 6 ton capacity per heat. The annual capacity of this furnace is estimated at 12,000 tons. In addition to liquid steel for mild steel ingots, metal for cast steel and cast iron sections of the foundry is also produced in the electric furnace. Practically the entire production of the electric furnace is used in the manufacture of bars and rods and only very small quantities for steel castings and iron castings. Steel ingots are produced in three sizes, namely, 6", 4½" and 3½" squares. All the 6" ingots and a part of the 4½" ingots are converted into billets before they are rolled into finished steel.

9.2.1. Our estimates of cost of production of electric furnace billets are based on the latest prices of scrap (Rs. 100 per ton) and turnings and borings (Rs. 25 per ton). As regards other materials, the latest available prices have been adopted. We would, however, add that we have taken the price of ferro-manganese at Rs. 1,250 per ton f.o.r. Bhadravati, though we feel that the producers of electric furnace billets will be able to obtain in future their requirement of ferro-manganese at a lower price from fresh sources of supply which are being established in the country. We, therefore, recommend that the retention price of electric furnace billets should be adjusted for any changes in the prices of commercial quality mild steel melting scrap, turnings/borings scrap as well as the price of ferro-manganese. With regard to labour charges and other elements of works cost, these have been computed in the case of the three units on the same general principles as have been followed in the case of conversion charges for bars and rods. The increase in the excise duty on steel ingots from Rs. 4 to Rs. 40 per ton with effect from 16th May, 1957 has also been taken into account. In the case of Mukand the consumption of electrodes per ton of liquid metal produced in the electric furnace is considered high and we recommend that it should strive to reduce the consumption of this item. Considering the fact that J. K. Iron & Steel Company uses about 90 per cent. melting scrap as against 65 per cent. and 53 per cent. in the case of Mukand and Bhartiya respectively, the yield of liquid metal from metallic charge obtained by it was rather low. This is stated to be due to the poor quality of scrap obtained by the Company. We, however, consider that an yield of 90 per cent. is fair, and suitable adjustments have been made in our estimates for this factor.

9.2.2. In 1952, we allowed depreciation at 9.82 per cent. on the original value of the fixed assets which included an element for rehabilitation of the old furnaces. We do not propose to allow any special element for rehabilitation this time. The amount required for rehabilitation should come from the profits allowed by us. We have, therefore, allowed depreciation at normal income tax rates only. Return has been allowed at 10 per cent. on the estimated capital employed for

the manufacture of electric furnace billets. We have also allowed Rs. 3 per ton for contingencies to provide for unforeseen variations in the cost of raw materials, electrodes, refractories, etc.

9.2.3. J. K. Iron & Steel Company requested that in view of the higher price of electricity prevailing at Kanpur, a special provision should be made in the retention prices for electric furnace billets. We considered this request carefully and came to the conclusion that since the retention prices recommended by us were not materially different from those separately calculated for this unit, such a special provision was not necessary.

9.3. The costs of production and fair retention prices of electric furnace billets as determined by us for Mukand, Bhartia and J. K. together with the average for the three units are set out in the following table :—

	(Rs. per ton)			
	Mukand	Bhartia	J.K.	Average
Quantity of E.F. Ingots required per ton of billets in tons	1.1236	1.0417	1.1403	1.1129
Work cost per tons of Ingot	333.17	330.65	312.16	321.29
1. Material—E.F. Ingot cost	374.35	344.44	355.96	357.55
2. Less credit for scrap	29.13	4.06	21.09	18.93
3. Net Material cost	345.22	340.38	334.87	338.62
4. Above Material cost	35.83	30.48	52.12	43.12
5. Total works cost	381.05	370.86	386.99	381.74
6. Depreciation	10.47	11.00	7.42	8.99
7. Profit on capital employed	23.30	22.40	20.60	21.66
8. Fair Ex-works Retention Price	414.82	404.26	415.01	412.39
Add for contingencies	3.00	3.00	3.00	3.00
TOTAL	417.82	407.26	418.01	415.39

9.4. The retention prices given in the previous paragraph have been estimated taking into account all the known increases and/or decreases and thus represent the current costs of production. As it is necessary to determine the retention prices payable to the furnace owners with effect from 1st January, 1957 the above figures of cost require adjustments for variation in costs of materials that have taken place after 1st January. The fair retention prices so adjusted are given

in the following table. The margin for contingencies has been allowed in the retention prices payable from 1st January, 1958 only since all the known variations in the costs of production have been taken care of up to that date.

					(Rs. per ton)
		Mukand	Bhartia	J.K.	Average
From 1-1-57 to 15-5-57	. .	375.28	352.72	372.73	368.55 or 369
From 16-5-57 to 7-7-57	. .	417.03	391.50	415.15	409.95 or 410
From 8-7-57 to 2-8-57	. .	417.66	392.30	417.17	411.35 or 411
From 3-8-57 to 31-12-57	. .	414.82	391.87	415.01	409.44 or 409
From 1-1-58 to 31-1-58	. .	417.82	395.43	418.01	412.57 or 413
From 1-2-58 onwards	. .	417.82	407.26	418.01	415.39 or 415

On the above basis, we recommend that the fair ex-works retention price payable to the Registered Re-rollers for electric furnace billets, untested category, should be as given below:—

	Rs. per ton
From 1st January, 1957	369
From 16th May, 1957	410
From 8th July, 1957	411
From 3rd August, 1957	409
From 1st January, 1958	413
From 1st February, 1958	415

9.5. *Period of Price Fixation.*—We recommend that the conversion charges for bars and rods and the fair retention price of electric furnace billets recommended by us to be effective as from 1st January, 1958 and 1st February, 1958, respectively should remain in force upto 31st December, 1960.

10. Our conclusions and recommendations are summarised

Summary of Conclusions and Recommendations below :—

(1) The Iron and Steel Controller should assess the capacity of all Registered Re-rollers after a thorough technical examination of their existing plant and machinery as early as possible.

[Paragraph 6.3]

(2) The Iron and Steel Controller should take necessary steps to see that the scrap arisings from controlled sources are properly distributed to the electric furnace owners. The balance of their requirements will have to be obtained from the uncontrolled sources for which the furnace owners themselves will have to take necessary steps.

[Paragraph 7.2.4]

(3) If on balance of payments consideration usable scrap is allowed to be exported as an incentive for the export of unusable scrap it should be acquired from uncontrolled sources. This will reserve melting scrap from controlled sources for electric furnace owners.

[Paragraph 7.2.4]

(4) The units which have come into the category of Registered Re-rollers by option may approach Government for an examination of their costs, should they find their conversion charges materially different from those recommended by us, after working for an year on billets.

[Paragraph 8.2]

(5) Every Registered Re-roller should maintain adequate records to show yield, defectives, scrap and heat loss, and should also take immediate steps to introduce suitable costing system at his works.

[Paragraph 8.3]

6. The conversion charges payable to the Registered Re-rollers for untested bars and rods 5/8" and above should be Rs. 122 per ton from 1st January, 1957; Rs. 133 per ton from 16th May, 1957; Rs. 130 per ton from 3rd August, 1957 and Rs. 131 per ton from 1st January, 1958.

[Paragraph 8.10]

(7) The conversion charges for bars and rods payable from 1st January, 1958, which are based on a billet price of Rs. 477 per ton, should be adjusted for changes in the controlled prices of billets when such changes take place in future.

[Paragraph 8.10]

(8) Mukand Iron & Steel Works should strive to reduce its consumption of electrodes.

[Paragraph 9.2.1]

(9) The retention price of electric furnace billets should be adjusted for any changes in the prices of commercial quality mild steel melting scrap, turnings/borings scrap as well as the price of ferro-manganese.

[Paragraph 9.2.1]

(10) The fair ex-works retention price payable to the Registered Re-rollers for electric furnace billets, untested category, should be Rs. 369 per ton from 1st January, 1957; Rs. 410 per ton from 16th May, 1957; Rs. 411 per ton from 8th July, 1957; Rs. 409 per ton from 3rd August, 1957; Rs. 413 per ton from 1st January, 1958 and Rs. 415 per ton from 1st February, 1958 onwards.

[Paragraph 9.4]

(11) The conversion charges for bars and rods and the fair retention price of electric furnace billets recommended by us to be effective as from 1st January, 1958 and 1st February, 1958, respectively, should remain in force upto 31st December, 1960.

[Paragraph 9.5]

11. We wish to express our thanks to the representatives of the Re-rolling mills and to the Steel Re-rolling Mills' Association of India **Acknowledgements** for their co-operation in carrying out the inquiry.


C. RAMASUBBAN,
Chairman.

S. K. MURANJAN,
Member.

J. N. DUTTA,
Member.

R. S. BHATT,
Member.

RAMA VARMA,
Secretary.

Bombay, dated 30th June, 1958.  अयमेव जयते

APPENDIX I

[Vide paragraph 2.7]

MINISTRY OF STEEL, MINES AND FUEL (Department of Iron and Steel)

RESOLUTION

New Delhi, the 13th November, 1957

No. PLGB-55 (33)/57.—In their resolution No. I&S (B)/55 (7)/56 dated 24th July, 1956, the Government of India set up a committee to consider the future lines of expansion of the steel re-rolling industry as well as of electric furnaces and steel foundries. The Committee has submitted its report. The principal recommendations are :—

(1) The existing capacity of the re-rolling mills of various categories including secondary producers as on 1st November, 1956 is about 700,000 tons per annum on one shift basis. As certain returns need rechecking, the figure should be regarded as provisional.

All the existing capacity is not covered by valid sanctions. In some cases, the plant and machinery which was mainly for the purpose of replacement has been put up along with plant already in position. Strictly speaking, the capacity created without proper sanction should not be recognised. It would not, however, be in the national interest to ignore the existence of such plant and machinery.

(2) In addition, some plant and machinery has been licensed by the Iron & Steel Controller to be obtained from abroad or indigenously, mainly for replacement. There is reason to believe that most of the plant and machinery now to be arranged will have the effect of increasing the capacity of the re-rolling units. Such additional capacity has been assessed at 104,760 tons per annum and may be taken as the projected additional capacity.

(3) While the major part of the existing capacity is based on the use of billets, quite a few units, particularly smaller units, depend on re-rollable scrap for their operation. Re-rollable scrap is not the proper material for the manufacture of quality product, but its use will be continued in mills below 8" sizes. These can operate economically on re-rollable scrap. The capacity of such units which can suitably run on re-rollable scrap is 26,200 tons per annum. The remaining capacity should be taken as based on billets. It comes to 1,325,746 tons on double shift.

No difficulty is anticipated in the mills below 8" size getting their future requirements of re-rollable scrap as hitherto.

As regards the units based on billets, a number of such units have had to restrict their operations to single shift or even less. It is generally accepted practice for such units to work double shift to ensure economic production. Allowing for wastage at 10 per cent, their total requirements of billets on double shift, work out to 1,458,024 tons per annum.

The indigenous supplies of billets and imports under liberal policy have not proved sufficient to meet the requirements of the re-rolling industry according to the general practice in the line.

The total anticipated availability, of billets and electric furnace ingots for re-rolling purposes, by 1960-61 is 890,000 tons a year. This quantity in terms of billets comes to 876,250 tons.

(4) Nothing can be said about the quantum of billets that would be available in the near future. Anyway, it is clear that it would not be possible to cater to the entire industry as it exists today on two shift basis which represents the general practice in industry to achieve economic production. It would, therefore, be necessary to regulate billet supplies in the manner which more or less maintains the present pattern of distribution.

(5) In spite of the Government of India's liberal import policy in regard to billets, it was found necessary to obtain from abroad substantial supplies of certain sections for which capacity existed in the country. This points to the conclusion that it is difficult to get billets from foreign countries. Government should, therefore, make a special effort to get from steel producing countries, through trade agreements or otherwise, as much billet supply as possible, to supplement the indigenous production to enable the re-rollers to work on an economic basis.

(6) If adequate supplies of billets cannot be arranged the available supplies may have to be rationed among the re-rollers *pro rata* on the capacity as recently assessed by the Iron & Steel Controller. In such allocations of billets—

- (i) the units which were given the option recently to change over the billets but preferred to continue to operate on scrap, and
- (ii) the unauthorised capacity will have to be ignored.

Unless supplies for one shift at least are assured to the industry there would be a danger of larger units having to suspend their operations.

(7) The re-rolling industry is amenable to regional development. New capacity should be established so as to fill the gap locally as far as possible.

The following States are deficient in re-rolling capacity :—

1. Andhra.
2. Assam (including Manipur, Tripura and NEFA).
3. Bihar
4. Himachal Pradesh
5. Jammu and Kashmir
6. Madras (including Pondicherry)
7. Madhya Pradesh
8. Mysore
9. Kerala
10. Orissa.

The other States have surplus re-rolling capacity.

(8) For all billets allocated, production orders should be planned by the Iron & Steel Controller in the same way as on the main and secondary producers.

(9) Existing classification of re-rollers ("Registered" and "Unregistered") should be revised and in future there should be only two categories on the basis of the type of raw material used—billets or scrap. Only mills below 8" may continue to base their operation on scrap.

(10) The estimated total liquid metal capacity of steel furnaces, existing and projected, will be utilised both for castings and for the production of ingots or billets. The melting scrap expected to be available by 1960-61 would be 260,000 tons per year. This would hardly be sufficient to meet the needs of the existing and projected steel furnaces, as their actual requirements of scrap would be about 285,000 tons a year.

The capacity of the existing steel foundries is 21,000 tons per annum. They expect to increase their capacity to 36,000 tons per annum by 1960-61. These foundries should be encouraged to expand and to utilise all their liquid metal for castings purposes only.

(11) The estimated demand for steel castings by 1960-61 is 72,000 tons per annum and the steel foundry capacity is expected to be 86,000 tons by that time. This will take care of the entire demand for steel castings. Therefore, there is no need to create any additional casting capacity before 1960-61. The position should be reviewed thereafter.

(12) The estimated availability of melting scrap (other than re-rollable industrial scrap) now is 200,000 tons per annum. This together with about 200,000 tons now being exported makes up a total of 400,000 tons, and with the ingot production of 6 million tons per annum after 1960-61, the expected availability of scrap by 1961-62/1965-66 is expected to be 10,00,000 tons i.e., 600,000 tons over and above the 400,000 tons.

There is definitely a need in the country for additional steel furnaces for the manufacture of steel ingots or billets for meeting the needs of steel rolling industry. By 1960-61, 250,000 tons of Grades 2 and 3 scrap, now being allowed to be exported, will be available. 20% of this scrap is comprised of very light varieties, which arise in all parts of the country. Besides, other types of light scrap can be had throughout the country. Efforts should be made to use such scrap in the regions where it arises. In all, about 80,000 tons of this type of scrap would be available per year. Mains Frequency induction furnaces with monthly capacity of 150/300 tons should be set up to convert this scrap into billets for rolling mills at least one in each State and more than one if an assessment of scrap availability warrants such addition.

(13) Until the furnaces are erected to utilise the scrap exported at present, permits may be given for export, subject to review every six months and the exporters making a certain percentage available to electric furnaces. Eventually the export should be stopped.

Scrap should be de-controlled, so that it may find a price level through normal trade channels.

2. The Government of India have accepted, recommendations (4), (8), (10) and (11). In regard to recommendations (1), (2), (3) and (6) the Government of India observe that the capacity as assessed on the 1st November, 1956 is higher than estimates made earlier. They consider that it will be necessary to carry out a further detailed technical assessment before adopting figures of capacity of individual re-rolling mills for allocation of raw materials.

While recommendation (5) would ordinarily have been worth consideration, the present foreign exchange position would hardly justify any further increases in imports of billets.

With regard to recommendation (7), the Government of India note that, despite the overall capacity being in excess of both the demand and the availability of raw materials, new capacity is recommended to be established in certain States on grounds of regional development. There is no case on merits for any new units except in areas which have no or little capacity at present and which might justify the location of new units on considerations of convenience of transport and economic production. In determining the location and size of such units it is important to bear in mind the possible disturbance to the pattern of distribution, in a scarce market. The Government of India propose to consider such cases on merits.

With reference to recommendation (9), it is the intention of the Government of India to allocate, as soon as the supply position of indigenous billets so permits, billets to Re-rolling Mills of 8" and above. In the meantime, the allotments of billets will continue to be made on the basis adopted hitherto, subject to such modifications as the availability of billets may, from time to time, permit.

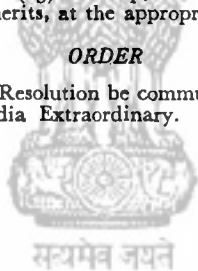
While recommendation (12) is acceptable in principle, it will be necessary to examine the availability and the suitability of such scrap and also the economics of production before considering applications for installation of furnaces. The economic size of each unit will be determined taking into account the particular circumstances of the case.

With regard to recommendation (13) on scrap, the Government of India propose to consider this recommendation on its merits, at the appropriate time.

ORDER

ORDERED that a copy of this Resolution be communicated to all concerned and that it be published in the Gazette of India Extraordinary.

S. BHOO THALINGAM,
Secretary.



APPENDIX II

[*Vide* paragraph 3]

No. IS (A)-2(182)/56

GOVERNMENT OF INDIA

MINISTRY OF HEAVY INDUSTRIES

New Delhi, the 12th December 1956

RESOLUTION

By the Ministry of Commerce and Industry Resolution No. 3-T(2)/51, dated the 22nd April, 1953 Government of India announced the conversion charges payable to Registered Re-rollers for bars and rods and the fair retention prices for electric furnace billets for the period from 1st January, 1953 to the 31st December, 1955 in accordance with the recommendations of the Tariff Commission. Subsequently, Government decided that these conversion charges and retention prices should be continued for the period from the 1st January, 1956 to the 31st December, 1956.

2. Government are of the opinion that the question whether there should be any revision in the conversion charges for bars and rods and the fair retention prices for electric furnace billets from the 1st January, 1957 onwards requires examination. The Tariff Commission is, therefore, requested to conduct the necessary enquiries in this behalf and submit its report to Government as early as possible.

ORDER

ORDERED that a copy of this Resolution be communicated to all concerned and that it be published in the Gazette of India.

N. SUBRAHMANYAM,

Joint Secretary to the Government of India.

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APPENDIX III (Vide Paragraph 4.1)

List of firms or bodies to which the Commission's questionnaires/letters were issued and from which replies or memoranda were received

*Those who sent detailed replies.

A. REGISTERED RE-ROLLERS

WEST BENGAL:

1. National Iron & Steel Co. Ltd., Stephen House, 4, Dalhousie Square East, Calcutta-1.
- *2. National Rolling & Steel Ropes Ltd., Stephen House, 4, Dalhousie Square East, Calcutta-1.
- *3. Bhartia Electric Steel Co. Ltd., 42, Shibtolla Street, Calcutta-7.
4. Hindusthan Iron & Steel Co., 8, Rajendra Deb Road, Calcutta.
5. Bhartia Steel & Engineering Co. Ltd., 61, Keshab Sen Street, Calcutta.
6. Bombay Steel Rolling Mills Ltd., 33, Netaji Subhas Road, Calcutta.
- *7. The Bengal Rolling Mills Ltd., 67/B, Netaji Subhas Road, Calcutta.
- *8. Rama Rolling Mills, 156, Manicktolla Main Road, Calcutta-11.
9. Swadeshi Industries Ltd., 33, Netaji Subhas Road, Calcutta.
- *10. Shree Bajrang Electric Steel Co. Private Ltd., 83, Old China Bazar Street, Calcutta-1.
- *11. Steel Equipment & Construction Ltd., 22, G.T. Road, North Lillooah, Howrah.
12. Steel Rolling Mills of Bengal Ltd., 33, Netaji Subhas Road, Calcutta.
13. Steel Rolling Mills of Hindusthan Ltd., 135, Canning Street, Calcutta.
14. British India Rolling Mills, 28, Canal West Road, Calcutta.

UTTAR PRADESH:

- *15. J. K. Iron & Steel Co. Ltd., Kamala Tower, Kanpur.
16. Singh Engineering Works Private Ltd., G. T. Road, Post Box No. 66, Kanpur.
- *17. The Cawnpore Rolling Mills, Private Ltd., Harrisganj, Post Box No. 152, Kanpur.
- *18. Prakash Engineering Co. & Rolling Mills, Freeganj, Agra.
- *19. The Delhi Iron and Steel Co. Private Ltd., G. T. Road, Ghaziabad.
- *20. The Agarwal Iron Works, Motilal Nehru Road, Agra.
- *21. Bindeswari Prasad Banwarilal Steel Rolling Mills, Bhumni Bazar, Kanpur.
22. Indian Rolling Mills, Fazalgunj, Kanpur.
23. Kisan Engineering Works Private Ltd., 19, G. T. Road, Ghaziabad.
- *24. Modern Industries, P. O. Malik Nagar, Sahibabad (Ghaziabad), Dt. Meerut.

MADHYA PRADESH:

- *25. Central Indian Iron and Steel Co., 517, Silnath Camp, Indore.
26. Digvijay Industries Private Ltd., Bangrod, District Ratlam.

PUNJAB:

- *27. Lauls Private Ltd., Faridabad Township, Dt. Gurgaon, Punjab.
28. Partap Steel Rolling Mills, Chheharta, Punjab.
29. Batala Engineering Co. Ltd., G. T. Road, Batala.
30. Aeron Steel Rolling Mills, Jullundur City.
- *31. Ludhiana Steel Rolling Mills, Miller Ganj, Ludhiana.
32. Saraswati Steel Rolling Mills, Railway Road, Jullundur City.
33. Sri Gurunanik Steel Rolling Mills, Ladowali Road, Jullundur City.
- *34. The Iron Factory (Regtd.), Mandi Govindgarh, Punjab.
35. Malawa Ram Handa & Sons, G. T. Road, Phagwara.

- *36. Ch. Diwan Chand Dhanpatrai Bhatia, G. T. Road, Govindgarh, Punjab.
- *37. Balu Ram Harnam Dass, Steel Rolling Mills, Railway Road, Govindgarh, Punjab.
- 38. Jindal Steel Works, Malerkotla, Punjab.
- *39. Milkhi Ram Hargopal Dass Steel Rolling Mills, Jaitu, Punjab.
- 40. Punjab Steel Rolling Mills, Nabha Road, Govindgarh, Punjab.
- 41. Rama Steel Rolling Mills, Mandi Gobindgarh, Punjab,
- *42. Ram Tirath Iron and Steel Re-rolling Mills, Mandi Gobindgarh, Punjab.
- *43. Sant Ram Ramji Dass Iron and Steel Rolling Mills, Mandi Gobindgarh, Punjab.
- *44. Saraswati Steel Rolling Mills, Gobindgarh, Punjab.
- *45. Shree Maharaja Steel Mills Private Ltd., Kapurthala, Punjab.
- 46. Sulekh Ram Banarasi Dass Steel Rolling Mills, Mandi Gobindgarh, Punjab.
- *47. Vishiv Karma Iron Rolling Mills, Railway Road, Mandi Gobindgarh, Punjab.
- *48. The Panesar Iron and Steel Rolling Mills Mandi Gobindgarh, Punjab.

BOMBAY:

- *49. Mukand Iron and Steel Works Ltd., Bombay-Agra Road, Kurla, Bombay-37.
- *50. Taj Iron & Steel Works Private Ltd., 247, Ripon Road, Byculla, Bombay.
- *51. Krishna Steel Industries Private Ltd., 301, Musjid Bunder Road, Bombay-3.
- 52. K. T. Rolling Mills Private Ltd., Broach St., Dana Bunder, Post Box No. 5052, Bombay-9.
- *53. The National Steel Works Ltd., Warden House (1st Floor), Sir P. M. Road, Bombay-1.
- 54. The Punjab Steel Rolling Mills, P. O. Chemical Industries, Old Station, Baroda-3
- 55. Bharat Iron and Steel Industries, Darukhana, Mazagaon, Bombay-10.

MADRAS :

- *56. Sri Ram Machinery Corporation Private Ltd. (Steel Rolling Mills), Catholic Centre, 5/6, Armenian Street, Madras-1.

RAJASTHAN :

- *57. Man Industrial Corporation Ltd., P. B. No. 131, Near Loco, Jaipur.

DELHI :

- 58. Steel & General Mills Co. Ltd., 3. Cavalry Lines, Delhi-8.
- 59. Rathi Steel Rolling Mills, Katra Rathi, Egerton Road, Delhi.
- 60. Seth Munnalal Steel Rolling Mills, Loni Road, Shahdara, Delhi.

ORISSA :

- *61. National Foundry & Rolling Mills Ltd., Nayabazar, Cuttack.

B. REGISTERED RE-ROLLERS HAVING ELECTRIC FURNACES

- *1. Bharatia Electric Steel Co. Ltd., 42, Shibtolla Street, Calcutta-7.
- 2. National Iron and Steel Co. Ltd., Stephen House, 4, Dalhousie Square East, Calcutta-1
- 3. Hindusthan Iron & Steel Co., 8, Rajendra Deb Road, Calcutta.
- *4. Mukand Iron & Steel Works Ltd., Bombay-Agra Road, Kurla, Bombay-37.
- *5. Krishna Steel Industries Private Ltd., 301, Musjid Bunder Road, Bombay-3.
- *6. J. K. Iron & Steel Co. Ltd., 8, Kamla Tower, Kanpur.
- 7. Singh Engineering Works Private Ltd., Post Box No. 66, G. T. Road, Kanpur.

C. ASSOCIATIONS

- *1. Steel Re-Rolling Mills Association of India, 20, Strand Road, Calcutta-1.
- 2. Iron, Steel & Hardware Merchants Chamber of India, K. T. Building, Broach Street Opp. Victoria Dock (Blue Gate), Bombay-9.
- 3. The Steel Registered Re-rollers Federation, Gobindgarh, Punjab.

D. GOVERNMENT DEPARTMENT

- *Iron & Steel Controller, Government of India, Ministry of Steel, Mines & Fuel, Iron and Steel Control, 33, Netaji Subhas Road, Calcutta-1.

APPENDIX IV (Vide Paragraph 4.4)

List of persons who attended the Commission's discussion on 3rd March, 1958

PRODUCERS :

Representing

1. Shri R. M. Agarwal Steel Re-rolling Mills, Association of India, 20, Strand Road, Calcutta-1.

AND

Mukand Iron & Steel Works Ltd.
Bombay-Agra Road, Kurla, Bombay-37.

2. Shri P. R. Bagri Steel Re-rolling Mills Association of India, Calcutta.

AND

Bhartia Electric Steel Co. Ltd.,
42, Shibtolla Street, Calcutta-7.

3. Shri L. N. Tikmany Steel Re-rolling Mills Association of India, Calcutta.

AND

Bengal Rolling Mills Ltd., 67/B,
Netaji Subhas Road, Calcutta.

4. Shri D. P. Dada Steel Re-rolling Mills Association of India, Calcutta.

AND

Shree Maharaja Steel Mills (Private) Ltd., Kapurthala.

5. Shri Ved Prakash Steel Re-rolling Mills Association of India, Calcutta.

AND

National Steel Works Ltd., Warden House, Sir P. M. Road, Fort, Bombay.

AND

Delhi Iron & Steel Co., Private Ltd., Ghaziabad.

6. Shri B. N. Gupta Steel Re-rolling Mills Association of India, Calcutta.

AND

Prakash Engineering Co. and Rolling Mills, Freegunj, Agra.

7. Shri D. P. Sahai Steel Re-rolling Mills Association of India, Calcutta.

AND

National Rolling and Steel Ropes Ltd., Stephen House, 4, Dalhousie Square, East, Calcutta-1.

Representing

8. Shri A. K. Bhattacharya	}	Steel Re-rolling Mills' Association of India, Calcutta.
9. Shri B. R. Agarwalla		
10. Shri C. D. Shivdasani		
11. Shri A. C. Das Gupta		
12. Shri A. K. Sen	}	Mukand Iron & Steel Works Ltd. Bombay-Agra Road, Kurla, Bombay-37.
13. Shri V. J. Shah		
14. Shri Jayant H. Shah		
15. Shri Mukand M. Shah		
16. Shri P. K. Shah	}	J.K. Iron & Steel Co. Ltd., Kaml. Tower, Kanpur.
17. Shri R. P. Nevatia		
18. Shri S. M. Bashir		
19. Shri S Mahalingam		
20. Shri K. N. Tikmany	}	Bengal Rolling Mills Ltd., Calcutta
21. Shri K. N. Sivaraman		
22. Shri Tarlok Chand Agarwal		
23. Shri Bhagwan Ramchand		
24. Shri Shantikumar Rungta	}	Krishna Steel Industries Private Ltd., 301, Masjid Bunder Road Bombay-3.
25. Shri Harnam Dass		
26. Shri Lachman Dass		
27. Shri Narindra Kumar Kapil		
28. Shri Y. N. Prashar	}	Man Industrial Corporation, P.O. Box No. 131, Near Loco, Ja pur.
29. Shri Dharam Dev Sagger		
30. Shri B. B. Bindal		

GOVERNMENT OFFICIALS:

1. Shri S. Banerjee, Deputy Iron & Steel Controller, Calcutta.
2. Shri R. Srinivasan, Deputy Price and Accounts Officer, Iron and Steel Control, Calcutt

APPENDIX V

(Vide Paragraph 6.4)

Statement showing production of Bars and Rods by the Registered Re-rollers during the years 1953-57

[SOURCE : Iron & Steel Controller]

(In tons)

Sl. No.	Name of the Registered Re-rollers	Production of Bars and Rods				
		1953	1954	1955	1956	1957
1	2	3	4	5	6	7
1	National Iron and Steel Co., Ltd., Calcutta	10,823	12,437	12,134	14,693	12,994
2	Bhartia Electric Steel Co., Ltd., Calcutta	13,994	14,943	17,528	19,480	21,922
3	Hindusthan Iron and Steel Co., Calcutta	2,364	4,385	4,245	6,132	7,123
4	Bhartia Steel and Engineering Co. Ltd., Calcutta	710	1,115	1,728	2,849	2,215
5	Cawnpore Rolling Mills, Kanpur	2,745	4,417	4,452	6,544	6,101
6	Singh Engineering Works Ltd., Kanpur	11,948	10,361	11,275	13,290	13,897
7	J. K. Iron and Steel Co., Ltd., Kanpur	1,379	5,962	10,219	17,021	17,459
8	Delhi Iron and Steel Co., Ltd., Ghaziabad	2,032	3,772	4,256	6,678	7,107
9	Prakash Engineering Co., Agra	2,940	3,054	3,600	4,947	4,817
10	Man Industrial Corporation, Jaipur	900	1,041	782	963	2,361
11	Lauls Private Ltd., Faridabad	2,145	959	3,251	4,801	3,999
12	Mukand Iron and Steel Works Ltd., Bombay	17,140	17,290	19,539	34,601	29,596
13	Krishna Steel Industries, Private Ltd. Bombay	5,608	18,435	11,933	28,403	19,801
14	Taj Iron and Steel Works Private Ltd., Bombay	4,240	3,174	5,345	8,924	3,613
15	Partap Steel Rolling Mills, Chhacharta	527	1,015	1,427	2,374	3,039
16	Batala Engineering Co., Batala	734	779	1,649	2,169	3,451

1	2	3	4	5	6	7
17	National Rolling and Steel Ropes Ltd., Calcutta .	3,120	6,693	6,943	4,731	10,847
18	Bombay Steel Rolling Mills, Calcutta . . . .	..	..	..	1,327	1,743
19	Shri Rama Machinery Corporation Private Ltd., Madras			Not working		
*20	Rathi Bros., Delhi/Steel & General Mills Co. Ltd., Delhi . . . . .	..	..	..	1,380	5,646
		83,349	109,832	120,306	181,307	177,731

*Rathi Bros. were working a spare mill in accordance with a "pooling" arrangement with Steel & General Mills Co. Ltd., Delhi, a Registered Re-roller from Lahore who were in the course of erecting their own mill. As a measure of interim relief Rathi Bros. were accorded sanction to operate as a Registered Re-roller. Steel & General Mills Co. Ltd., have now erected their mill and are a Registered Re-roller. Following this, Rathi Bros. are no more a Registered Re-roller.



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(Vide Paragraph 6.4)

(Vide Paragraph 6.4)

Statement showing the capacity and actual production of ingots and castings by Registered Re-rollers having electric furnaces during the years 1953-57

[SOURCE : Iron and Steel Controller]

(In tons)

Sl. No.	Name of Registered Re-rollers having electric furnaces	Annual capacity on triple shift	1953		1954		1955		1956		1957						
			Ingots	Cast-ings	Total	Ingots	Cast-ings	Total	Ingots	Cast-ings	Total	Ingots	Cast-ings				
1	Bhartia Electric Steel Co. Ltd., Calcutta	15,000	6,756	57,377	12,133	7,650	6,771	14,421	6,421	7,672	14,093	4,372	10,617	14,989	3,941	11,713	15,654
2	J. K. Iron & Steel Co. Ltd., Kanpur	12,000	5,443	403	5,846	8,160	286	8,446	8,476	287	8,763	10,119	330	10,449	11,230	412	11,642
3	Krishna Steel Industries Private Ltd., Bombay	4,300	1,989	501	2,490	2,051	1,081	3,132	1,835	1,168	3,003	2,076	1,867	3,943	1,899	1,781	3,680
4	Mukand Iron & Steel Works Ltd., Bombay	15,000	4,783	2,866	7,649	7,207	3,598	10,805	7,794	3,981	11,775	5,970	6,879	12,849	3,530	8,032	11,562
5	National Iron & Steel Co. Ltd., Calcutta	26,620	12,372	1,709	14,081	14,439	1,596	16,035	13,141	2,571	15,712	11,865	3,456	15,321	10,618	4,027	14,645
*6	Singh Engineering Works Ltd., Kanpur	7,800	..	..	..	..	..	..	..	..	..	..	..	..	11,645	..	1,645
*7	Hindusthan Iron & Steel Co., Calcutta	10,800	..	..	..	..	..	..	..	..	..	..	..	..	3,179	..	3,179
	TOTAL	91,520	31,343	10,856	42,199	39,507	13,332	52,839	37,667	15,679	53,346	34,402	23,149	57,551	36,042	25,965	62,007

*** Produce Loose Jaws.**

Commenced production in July, 1957.

† Commenced production in January, 1957.



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