SMALL SCALE INDUSTRY ANALYSIS AND PLANNING
REPORT No. 35(N)

G. I. MALLEABLE PIPE-FITTINGS INDUSTRY

(Northern Region)

सत्यमेव जयते

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(SMALL SCALE INDUSTRIES)
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INTRODUCTORY NOTE

The Economic Investigation Branch of the Small Industries Service Institute, New Delhi, has prepared an industry outlook report on the Galvanised Iron Malleable Pipe-Fittings Industry in the Northern Region (comprising Jammu and Kashmir, Punjab, U.P., Rajasthan, Delhi and Himachal Pradesh). There are at present 15 small-scale units and one large-scale unit in this region. These units employed 446 persons and their output was valued at about Rs. 12 lakhs in 1957.

The consumption of G. I. Malleable Pipe Fittings in this region has been estimated at Rs. 16 lakhs in the same year. The Demand is expected to increase by about 100 per cent during the next three years. There is thus good scope for expansion of the existing units and the establishment of a few new ones in this region.

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DEVELOPMENT COMMISSIONER
(*Small Scale Industries*)

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G.I. MALLEABLE PIPE-FITTINGS INDUSTRY

(NORTHERN REGION)

I—INTRODUCTION

Scope of the Survey

The galvanised iron malleable pipe-fittings industry is one of the newly established light engineering industries of the Northern region. The main items that come under G.I. malleable fittings are elbow, tee, socket, check nut, nipple, plug, union, bend, cross, reducer, etc. These items are made in various sizes starting from ¼" diameter onwards. But the production in the Northern region is confined to sizes of ½" to 4" diameter. Therefore, the report deals with the fittings in the range of ½" to 4" dia. Other pipe-fittings of cast iron such as waste-not cocks and push cocks, and brass and gun-metal fittings, commonly known as sanitary and water fittings, form the subject-matter of another report as these items are not being manufactured by the units that are producing G I. Malleable pipe-fittings included in the survey.

There are reported to be 16 factories—one large-scale and 15 small-scale—manufacturing G.I. Malleable pipe-fittings in the Northern region. Although the scope of the survey is limited only to small-scale units, the large-scale unit was covered during field investigations mainly for comparative studies. A small-scale unit has been defined for the purpose of this report as one employing less than 50 persons if operating with power and less than 100 workers if operating without power.

Method of the Survey

Of the 16 units in this region, 13 units were visited by the economic investigation team. Information from the remaining 3 units was collected through postal enquiries. The statistics presented in this report relate to all the sixteen units in this region. The wholesale and retail dealers in pipe fittings were approached to study the consumers' reaction to the products made in the Northern Region. Official sources like State Industries Departments, Development Wing of the Ministry of Commerce & Industry and the office of the Director General of Supplies and Disposals were also contacted. The Statistics contained in the report on various aspects of the industry are fairly dependable; but in case of demand projection the estimates are not as well based as may be desirable.

II—SUMMARY OF CONCLUSIONS AND RECOMMENDATIONS

A. INDUSTRY PROSPECTS

General Rating

The industry has been rated 'A' as it has good demand prospects during the next few years. Pig iron which is the main raw material used in the industry is in short supply at present; but its position is expected to improve in 1959. More capacity than is warranted by the demand is proposed to be allocated to the large-scale sector by the Development Wing; but if, as proposed in the report, due share is given to the small-scale sector, a few more units for making malleable pipe-fittings can be set up in the Northern Region. (*Para* 60-61)

Demand Outlook

Rapidly increasing constructional activities all over the country along with the expanding industrial development would result in excellent demand prospects for pipe-fittings. Development Wing, Ministry of Commerce and Industry, has estimated that the demand for malleable pipe-fittings will be of the order of 9,400 tons in 1960-61. On the basis of past consumption, the demand in the Northern Region is expected to increase by about 100 per cent during the next three years *i.e.* during 1958-60 as compared to 1957. (*Para* 24)

Competitive Outlook

Large-scale Vs. *Small-scale*—Because of the better quality and higher prices of the pipe-fittings produced by the one large-scale unit in this region, there is not much competition between its products and the fittings produced by the small-scale units. The competition is further reduced by the fact that 70 to 80 per cent of the output of the large-scale unit is marketed outside the region. The small-scale units have a definite advantage over the large-scale units in overhead expenses and even though quality of pipe-fittings produced by them is inferior, yet in view of the fact that there exists a large demand for the low priced pipe fittings they are able to sell them without any difficulty. (*Paras* 25-27)

Local and Regional—The units at Meerut produce low priced pipe-fittings and despite their inferior quality offer effective competition to the units in Delhi. Large quantities of pipe-fittings of large-scale manufacturers of other regions, particularly from Ahmedabad, are being imported into the region. Being of better quality these fittings compete with the products of the large-scale unit of this region. (*Paras* 28-29)

Indigenous Vs. *Foreign Imports*— Since there is now complete ban on the import of malleable pipe-fittings of ½″ to 3″ diameter the industry has to face little competition from imported pipe-fittings. But in the past the indigenous industry was hard hit on many occasions by competition from imported fittings whose prices were lower and quality superior as compared to indigenous products. (*Para* 30)

Employment Outlook

If, as proposed, due share of production is allocated to the small-scale sector and the quality of the products is also improved, the increasing demand in the region is expected to result in doubling the employment by 1960-61. The employment in the small-scale sector may increase from 346 in 1957 to about 700 in 1960-61. (*Para* 48)

B. CONCLUSIONS AND RECOMMENDATIONS

1. *Production Aspects* - The main production problem facing the small-scale sector of the industry is to attain proper malleability of the products. During field investigations the units were advised to approach the respective Small Industries Service Institutes in their States for getting advice regarding the use of batch-type coal fired annealing furnaces which are better suited for annealing process. (*Paras* 39-40)

2. *Raw Materials*—The problem relating to raw materials is two-fold: (*i*) non-availability of pig iron to some of the units at controlled rates and (*ii*) inadequate supply of proper grade pig iron to quota-holders. The Directors of Industries of different States should sanction quotas of required grade of pig iron to all the small-scale units manufacturing pipe-fittings when the supply position improves during 1959. (*Para* 43)

3. *Standards*—The Indian Standards Institution has prepared draft standards for different sizes and shapes of G.I. malleable pipe-fittings and is expected to finalise them shortly. The Institution has already formulated Indian Standards No. 227 for malleability. It is recommended that small-scale units should manufacture pipe fittings according to these standards. The District Industries Officers of different State Governments and the technical officers of the Small Industries Service Institutes should bring this recommendation to the notice of small-scale manufacturers. The latter should help the manufacturers to make fittings according to I.S.I. standards. (*Para* 45)

4. *Financial Aspects*—Two units of Delhi and six units of Meerut would need Government aid for both fixed capital and working capital requirements for carrying out the improvements suggested in this Report. It is, therefore, recommended that these units should approach the National Small Industries Corporation for the supply of requisite machines under the 'hire purchase scheme' and, for finance they should apporach the respective Directors of Industries under the State Aid to Industries Act.

(*Para* 53)

5. *Organisation Aspects*—In order to safeguard the interest of small-scale units in the matter of allocation of pig iorn, coal and coke quotas and to solve their other problems relating to marketing etc. by joint efforts it is recommended that the units at different centres should form themselves into a regional association. For encouraging the setting up of the proposed association it is suggested that in the matter of Governmental assistance preference should be given to such units as are members of the association and make standard goods. (*Para* 56)

6. To check unhealthy competition in the small-scale sector the proposed association should fix floor prices, keeping in view the desired minimum standards and persuade its members neither to sell their products at lesser prices than the fixed, nor to lower the quality of the products. (*Para* 46)

Governmental Factors

7. *Sanction of new capacity*—It is recommended that the Licencing Committee of Ministry of Commerce and Industry should take into account the existing capacity and the need for expansion of the small-scale sector of the pipe-fittings industry, which can produce quality pipe-fittings at competitive prices. The Committee should allocate to the small-scale sector a portion of the additional capacity to be licensed. (*Para* 60)

III—INDUSTRY TRENDS AND STATISTICAL SUMMARY

Growth of the Industry

1. The G.I. malleable pipe-fittings industry was developed in this region, after the partition of the country, by the enterprising refugees from West Pakistan. The first successful unit for the manufacture of pipe-fittings was established in 1947 at Shahdara, Delhi. In the State of Punjab its manufacture was started in 1948 at Jullundur and a year later at Meerut in U.P. The industry had hardly started establishing itself at these centres in the Northern Region, when it was hit hard by a slump in the indigenous industry during 1951-52. Large quantities of fittings were imported into the country after the Korean War. At the same time imports of low priced fittings from Japan added further to the slump and the result was that many of the small units in the Region had either to curtail their production or to close down.

2. To protect the industry from foreign competition, restrictions were imposed on the imports of pipe-fittings. Imports of flanges of all sizes; elbows, tees and sockets of ½″ to 3″ diameter including reducers and plugs; nipples and check nuts of 1″ diameter and less were totally banned. The restrictions on imports had beneficial effect and the indigenous industry started to develop. However, in 1957, the industry again suffered a set-back on account of smuggled stocks of pipe-fittings imported from Japan under the heads of "refrigeration fittings" and "steam fittings". The Government has recently taken steps to stop such imports, but there are still small imported stocks of cheap Japanese pipe-fittings in the market. Generally speaking the growth of the industry during 1955–57 has been quite encouraging. Several new units have gone into production during this period. The total regional production of G.I. Malleable pipe-fittings has increased from Rs. 3.91 lakhs in 1955 to Rs. 11.76 lakhs in 1957. The employment estimated to be 158 in 1955 has gone up to 446 in 1957.

Structure of the Industry

3. There are both registered and unregistered factories in the small-scale sector. Most of the units at Meerut are unregistered units of cottage type operating without power, while all the units in Delhi and Jullundur are registered under the Factories Act. Besides pipe-fittings, two small-scale factories at Jullundur and two in Delhi manufacture other items such as motor parts, hand pumps and parts. The large-scale unit also turns out other items along with pipe-fittings. A peculiarity of the industry at Meerut

is that many units there get some processes such as casting and threading done on contract basis from outside and perform only minor operations such as annealing and galvanizing themselves.

Number of Units

4. There are 16 units— 15 small-scale and one large-scale – manufacturing G.I. malleable pipe-fittings in the Northern Region. Of the 15 small-scale units 8 are at Meerut, 4 at Jullundur and 3 in Delhi. The large-scale unit is also located in Delhi.

Employment

5. The average daily employment in the industry in this region is calculated to be 446 out of which 346 are in small-scale-sector. A broad picture of the employment position in the small-scale sector in Northern Region is given in Table I.

TABLE I

Number of persons employed in the Small-Scale sector in the Region

State	Centre	Total No of units	No. of units having workers between 5 - 10	11--20	21—49	Employment Skilled	Un-skilled	Others	Total
Delhi .	Delhi Shahdara	3	—	2	1	42	22	10	74
Punjab	Jullundur	4		2	2	83	25	14	122
U.P.	Meerut	8	1	4	3	112	22	16	150
	TOTAL .	15	1	8	6	237	69	40	346

Source Field Investigations

6. It will be observed from Table I that sixty-nine per cent of the persons employed in the small-scale sector are skilled workers. The un-skilled labour constitutes 20 per cent of the total employment, whereas the percentage of persons engaged in managerial, supervisory and clerical and other services comes to only 11.

Investment

7. The total capital investment in the industry in the Northern Region is calculated to be Rs. 8.34 lakhs—Rs. 0.81 lakh in land and building and Rs. 2.19 lakhs in machinery, while Rs. 5.34 lakhs form the working capital. The only large-scale unit in this region accounts for Rs. 2.22 lakhs of investment forming 26.6 per cent of the total investment in the industry. In the small scale sector the average capital investment per factory in Jullundur is calculated to be Rs. 83,500 and in Delhi and Meerut

Rs. 47,666 and Rs. 16,875 respectively. One of the main reasons for such a high average investment at Jullundur is that all the four units there have their own buildings while in Delhi and Meerut the units are working in rented buildings. If the investment in land and building be excluded from the total investment at Jullundur, the average investment comes to Rs. 63,250. Table II clearly indicates that on an average, the units at Jullundur are of bigger sizes. The average investment per unit in the small scale sector for the region as a whole is worked out at Rs. 40,800. A more detailed account of the investment in the small scale sector in this region is given in Table II.

TABLE II

Investment Structure in the Small-Scale sector in Northern Region

State	Centre	No. of small scale-units	Capital Investment (figures in lakh Rs.) Land and Bldg	Machinery	Working capital	Total	Investment unit	Percentage of working capital to total capital
Delhi	Delhi	3	Nil	0 24	1·19	1·43	0 48	83 2
Punjab	Jullundur	4	0 81	1·08	1·45	3 34	0 83	43 4
U P	Meerut	8	Nil	0·42	0·93	1·35	0 17	68 9
	TOTAL	15	0 81	1·74	3 57	6 12	0·41	58 3

Source : Field Investigations

8. The distribution of the small scale units in different investment groups is given in Table III.

TABLE III

Distribution of Small-Scale Units in investment groups

Investment Group	No. of units Delhi	Jullundur	Meerut
1,000—4,000		--	1
5,000—10,000	1		1
11,000—20,000		-	4
21,000—50,000	1	1	2
51,000—1,00,000	1	2	-
1,00,000—1,25,000	--	1	—
TOTAL	3	4	8

Source : Field Investigations.

Table III also shows that the units at Jullundur are of comparatively bigger sizes. There is no unit at Jullundur having an investment less than Rs. 20,000, while 6 of the units at Meerut have investment between Rs. 1,000 and Rs. 20,000 and no unit has investment of more than Rs. 50,000. Most of the units at Meerut are more or less of cottage type working on hand operated machines. In Delhi and Jullundur all the units have installed power operated machines.

Capacity and Production

9. The total annual installed capacity (as stated by manufacturers) of the small scale-sector for G.I. malleable pipe-fittings comes to Rs. 15.00 lakhs in this region and the production in 1957 amounted to Rs. 9.19 lakhs. The only large-scale unit has a production of Rs. 2.52 lakhs in 1957 with an annual capacity of Rs. 400 lakhs worth of G.I. malleable pipe-fittings. Thus only 62 per cent of the total annual installed capacity (Rs. 19 lakhs) in the Northern Region is being utilised. Detailed information regarding capacity and production in small scale sector at different centres is given in Table IV.

TABLE IV

Annual capacity and production of Small-Scale sector of pipe-fittings in 1957

Centre	No. of small-scale units	Annual installed capacity (in lakh Rs.).	Production in 1957 (in lakh Rs.)	Percentage of capacity being utilised
Delhi	3	3·50	2·67	76·3
Jullundur	4	3·50	2·68	76·6
Meerut	8	8·00	3·84	48·0
TOTAL ..	15	15·00	9·19	61·3

Source : Field Investigations.

10. It is clear from Table IV that more than half of the installed capacity of the small-scale units at Meerut is lying idle. This was so at the time of enquiry (March, 1958). There, the units mostly produce cheap and low quality G.I. malleable pipe-fittings. These units found it difficult to stand severe competition from the low priced but of comparatively better quality pipe-fittings imported from Japan during 1957, under the head of 'refrigeration and steam fittings'.

11. Trends of production in the past 3 years are given in Table V.

TABLE V

Production Trends in the Small Scale Sector

(Value in Lakh Rs.)

	Delhi		Jullundur		Meerut		Total	
Year	Value	Percent-age increase	Value	Percent-age increase	Value	Percent-age increase	Value	Percent-age increase
1955	—	—	2·02	—	0·25	—	2·27	—
1956	2·05	—	2·33	15·3	0·49	96·0	4·86	114
1957	2·67	30·2	2·68	15·0	3·84	683·7	9.19	89

Source : Field Investigations.

The figures in Table V disclose an increasing trend in production in the Northern Region. The increase has been more in the units at Meerut mainly because of the coming into production of six new units during 1956 and 1957. The industry at the other two centres registered only a nominal increase.

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IV—DEMAND AND COMPETITIVE OUTLOOK

A—DEMAND

Trends in Consumption

11. No statistics are available regarding the past consumption of G.I. malleable pipe-fittings in the country. The simple method of calculating the consumption based on indigenous production *plus* imports *minus* exports cannot be applied due to lack of adequate data. The figures of indigenous production available from the Development Wing relate only to the units which are registered under the Industries (Development and Regulation) Act, 1951. Figures of imports and exports are not available exclusively for G.I. malleable pipe fittings since they are classified under the broad head "Pipes and Fittings".

Factors Governing Demand

12. The Demand for pipe-fittings mainly arises from the use of pipes either for the flow of liquids like water and oil or for the gases like steam, coal gas, etc. The main consumers of pipe-fittings are: Public Works Departments, District Boards, Municipal Boards and Corporations, Railways, ship building yards, oil refineries, laboratories, private buildings' contractors etc. The demand for pipe-fittings is thus largely determined by the tempo of constructional activity in public and private sectors under various programmes, relating to public health, education, industrial development, social welfare and extension of filtered water supply and sewerage facilities in the areas not so far covered. The impact of these factors on the future demand is discussed below :—

13. It is envisaged by the Planning Commission that about 10.75 lakh houses would be built during the Second Plan period. The outlay on construction of houses by the Ministry of Works, Housing and Supply is Rs. 120 crores against Rs. 49 crores during the First Plan. Similarly big increase in demand for pipe-fittings can be expected from the expansion of industries and transport facilities. The provision for the development of industries in the public sector during the current plan is Rs. 790 crores against Rs. 149 in the last plan. The investment envisaged in the private sector is Rs. 470 crores against Rs. 233 crores of the First Plan.

14. The demand for pipe-fittings would also increase with the expansion of shipping and railways. The present demand from railways is estimated at Rs. 2 lakhs per year. The shipping tonnage is expected to increase by 50 percent during the Second Plan.

15. Further the Health programmes under the Second Plan provide for the establishment of about 2,600 medical institutions like hospitals, dispensaries, maternity homes etc., besides several medical colleges and research institutions. Under the education programmes 87,025 schools—primary, junior basic, high and higher secondary and multi-purpose, 7 universities, 30 engineering institutions and 4 technological institutions are to be established during the 5 year period. Thus the health and education programmes will also create a good demand for pipe-fittings.

Exports

16. The Export Promotion Council for Engineering Goods points out that the Indian pipe-fittings had in the past been quite popular in British Africa, Ethiopia, Sudan, Egypt and Aden, and that if only quality products could be exported the demand for Indian fittings may increase. In its seventh report the Council points out that there are very good demand prospects for Indian iron fittings in Syria, Lebanon and Jordan. Thus generally speaking, the Indian pipe-fittings seem to have good export prospects. Although the exports may be undertaken by the large-scale sector, the competitive pressure on the small-scale sector will be reduced to some extent. This fact is of great significance to the small-scale sector of Northern Region where 50 per cent of the consumption is catered to by the large-scale sector of the Western Region and another 5 per cent by the large-scale sector of the Northern Region.

17. The increase in the All-India demand due to the industrial and constructional activities under the Second Plan, as discussed in the above paragraphs will have a favourable effect on the regional demand—partly due to the relative share of the Region and partly due to the diversion of the supply of Ahmedabad large-scale unit fittings to other regions.

Future Demand

18. As has already been explained in the beginning of this chapter, due to lack of relevant data, it is not possible to project the future demand in a precise manner. However, an attempt has been made in the following paragraphs to bring out some trends and estimates of the future demand of pipe-fittings. For such analysis import statistics, all-India production figures of large-scale sector and the annual purchase figures of the D.G.S. & D. over a number of years have been taken into consideration.

Imports

19. Table VI gives annual import figures of pipes and fittings during the First Five Year Plan period (pipe-fittings) have not been separately classified in the foreign trade statistics of India.

TABLE VI

Imports of Pipes and Fittings

Year of Import	Value in Rs. lakhs
1950-51	22
1951-52	59
1952-53	41
1953-54	43
1954-55	69
1955-56	71

Source : Journal of Sea-borne Trade of India.

It would be observed from the above Table that the imports have been increasing during the first plan period. During 1951-52 there is sudden increase in imports over 1950-51 which gave a set-back to the indigenous industry. The increase from Rs. 22 lakhs in 1950-51 to Rs. 71 lakhs in 1955-56 gives a percentage increase of 223 during the first plan period. This means an average cumulative increase of 27 per cent per annum.

All India Production in the Large-scale Sector

20. Table VII gives the all-India production figures of pipe-fittings in the large-scale sector.

TABLE VII

Annual production in the large-scale sector of the industry

Year of production	Production in tons
1954	340
1955	847
1956	1,022
1957	949

Source : Development Wing.

It would be observed that during the four years from 1954 to 1957 the production has been increasing from year to year except in the year 1957. The production increased very much during 1955 because several new units came into production in 1954 and 1955. This increase was mainly to fill the gap between supply and demand caused by ban on the import of pipe-fittings. The base having been enlarged, the increase in production was only normal in 1956. No new units came into existence, nor was there any other obvious abnormal factor influencing production. But in the year 1957 production decreased instead of increasing. This is explained by the fact that during 1957, large imports of pipe-fittings were made under the head of 'refrigeration fittings' and 'steam fittings'. However, taking all the four years from 1954 to 1957, we find that production increased from 340 tons to 949 tons. This means an increase in production by 179 per cent in 1957 over the production of 1954. The average cumulative percentage increase per annum comes to 42.

D.G.S. & D. Purchases

21. Table VIII gives the annual purchases of water-fittings by the D.G.S. & D. from 1953-54 to 1956-57. The broad head of 'water-fittings' includes G.I. malleable, brass and gun-metal pipe-fittings and sanitary fittings. Separate purchase figures for malleable fittings were not available.

TABLE VIII

Purchases of water-fittings by the D.G.S.&D.

Year of purchase	Purchase in lakhs Rs.	Index of purchases (base 1953-54=100)
1953-54	31	100
1954-55	62	200
1955-56	121	390
1956-57	194	626

Source : D.G.S.&D.

It would be observed from Table VIII that the purchases have been continuously increasing from year to year. From Rs. 31 lakhs in 1953-54 the D.G.S.&D. purchases increased to Rs. 194 lakhs in 1956-57. This gives an average cumulative increase of 85 per cent per annum.

22. All the three factors discussed above *i.e.* the import statistics, production figures and the purchase figures show clear trend of increasing demand from year to year. This increase will be augmented further by the impact of industrial and constructional activities during the Second Plan on the demand for pipe-fittings. But it is not possible to give any precise estimate of increase in demand for the pipe-fittings during the next few years. However, the Development Wing of the Ministry of Commerce and Industry has estimated that the annual demand for G.I. pipe-fittings in 1960-61 would be of the order of 9,400 tons. This estimate is based on a co-relation between the production of pipes in its turn is co-related with the consumption of steel in 1960-61.

Consumption Trends in the Northern Region

23. 'Table IX indicates trends in the consumption of malleable ttings in the Northern Region. The consumption in the Region

has been calculated by adding up regional production and imports from other regions, and deducting from it the exports from this region. While the regional production figures and the figures for the exports from this region were collected from the manufacturers, the imports into the region were calculated on the basis of information gathered from important dealers in the region. The export figures were checked by interviewing important dealers and sole agents. Import figures, however, relate only to the imports into the region by wholesale dealers and do not include direct purchases from other regions by big consumers like contractors or institutional buyers like Municipal Boards and other Government Departments.

TABLE IX

Consumption Trends in the Northern Region

(Figures in Lakhs Rs.)

Year	Production in Northern Region	Imports in the region	Exports from the region	Consumption	Percentage increase over 1955
1955	3·91	2·83	1·65	5·09	—
1956	7·48	4·95	2·54	9·89	95·3
1957	11·76	7·73	3·65	15·84	211·2

Source : Field Investigations.

Future Demand in the Northern Region

24. The future demand for pipe-fittings in the Northern region will be determined mainly by the tempo of the constructional activity within the region. The conservative estimates of the future regional demand arrived at by a simple projection of the past consumption come to Rs. 31·77 lakhs worth of pipe-fittings in the year 1960 or at a constant price of Rs. 2,000 per ton it will be about 1,600 tons. In other words, it means an increase of 100·5 per cent in 1960 as compared to 1957. The impact of rapidly increasing constructional activities all over the country, as stated earlier in this chapter, may lead to much more increase than indicated by the production of past trends. As pipe-fittings are mostly consumed in urban areas, we can calculate the share of Northern Region on the basis of its urban population. The total urban population of India is 8·4 crores while in the Northern Region it is 2·1 crores *i.e.* 25 per cent of All-India figures. On this basis, the share of Northern Region in the anticipated All-India demand of 9,400 tons (Development Wing estimates) of pipe-fittings in 1960-61, comes to 2,350 tons.

B—Competition

Large-scale *Vs.* Small-scale

25. The one large-scale unit in this region does not offer much competition to the small-scale sector because of the better quality and higher prices of its products. The pipe-fittings produced in the small sector of this region on the other hand, generally lack proper malleability, galvanisation and in some cases even proper threading. Moreover, the large-scale unit has established a good reputation for its products and is quite well-known for quality in the markets of Bombay, Madras, Hyderabad and Saurashtra and as such 70 to 80 per cent of its output finds its way to other regions and only 20 per cent is put in the markets of this region for sale. This fact, therefore, has further reduced the competition with the small manufacturers whose products are generally sold within the region. The typical wholesale prices of pipe-fittings of both the sectors are given in Table X.

TABLE X

Typical Wholesale Prices of Pipe Fittings of Large-scale and Small-scale Units.

List Price per dozen in Rs. F.O.R. Factory Station

Item	Size	Large-scale Unit	Small-scale Unit Delhi	Jullundur	Meerut
Elbow	½″	3·88	3·12	3·00	2·65
	1″	7·90	6·50	6·50	5·10
Tee	2″	21·72	—	18·00	17·50
	½″	4·30	3·75	3·75	3·15
	1″	8·66	8·00	8·00	6·10

Source : Field Investigations.

26. The figures in Table X indicate a wide difference in prices. The prices in the small-scale sector are lower not because the manufacturing cost is less but rather on account of the lower quality of goods produced in this sector. No doubt, the technique of production, modes of procurement of essential raw materials like iron, steel scrap and coal and that of marketing the final product in some of the good small-scale units are similar to those followed in the large-scale unit, yet some units, particularly at Meerut are certainly handicapped in these respects. Their techniques are comparatively primitive and more Labour consuming. They find it difficult to stand competition—quality for quality—with large-scale and good small-scale units and therefore, they concentrate on the production of low quality cheap pipe-fittings. Some of the units generally anneal their castings for only 24 hours or even for

a lesser period instead of 72 hours—normal period for obtaining proper malleability. Some of the units at Jullundur and Meerut galvanise the castings by electroplating method which is cheaper. The zinc coating in this case is not so durable as the coating obtained by the hot process of galvanisation followed by the large scale and a few good small-scale units.

27. The small-scale units though handicapped in certain respects have a definite advantage over the large-scale units in overhead expenses. The small manufacturer can supervise the work personally and his overhead expenses are reduced to a great extent. Analysing the production costs of the large-scale and the typical small-scale units we find that the overhead expenses for one dozen of 1/2" diameter tees come to Rs. 0·25 or about 8 per cent of the production cost in the case of the large-scale unit and only Rs. 0·12 or about 5 per cent of the production cost in the case of small-scale units.

Local and Regional

28. The small scale units of Meerut offer tough competition to the units of Delhi. The former generally produce pipe-fittings of low quality. These low quality pipe-fittings are sold at cheaper rates that attract some of the customers in Delhi. Hardly one or two units of Meerut receive quotas of iron and the rest have to pay Rs. 3 to Rs. 5 more for every maund of iron in the open market. Their methods of production are also uneconomic. The only advantage of these units over the small-scale units of Delhi is overhead expenses. But the saving of this account which amounts to about Rs. 0·08 for one dozen of tees of 1/2" diameter is quite insufficient to counterbalance the increase in cost of production due to non-availability of iron and coke at controlled rates, and, outdated techniques, and therefore, the units perforce lower the quality in order to compete with other manufacturers getting raw material and fuel at controlled rates in Delhi and Jullundur. However, when the position regarding the shortages of raw material and fuel improves the units at Meerut will be in a better position to compete and improve the quality also.

29. The small-scale units of the Northern Region, as indicated earlier, have not to face any effective competition from the large-scale unit in the region because 70 to 80 per cent of its products are sold outside the region. However, large quantities of pipe-fittings of the large-scale manufacturers, of other regions are being imported into the region. In spite of the great difference in prices of imported fittings (from other regions) and those produced by the small-scale manufacturers the former are quite popular with the quality conscious consumers and

institutional buyers. These fittings are generally imported from Ahmedabad. Their prices are comparable with those of the large scale manufacturers of the Northern Region, but according to dealers, they are better in finish and as such have captured about 50 per cent of the market in the region.

Indigenous *Vs.* Imports

30. The indigenous industry particularly the small-scale sector was hit hard during the period 1951-52 by the huge imports of pipe-fittings mainly of Crane & Co. of U.K. and again during the latter half of 1957-58 by the cheap Japanese pipe-fittings imported under the heads of 'refrigeration fittings' and 'steam fittings'. It shows that the indigenous industry has not been in a position to stand the competition from foreign products because of the higher prices and lower quality of its products. However, since there is now a complete ban on the imports of G.I. pipe-fittings of ½″ to 3″ dia. the small-scale sector has to face little competition from foreign pipe-fittings. It is expected that with improvements in the techniques of production and the supply of raw materials, the indigenous pipe-fittings may be in a position to stand competition even from imported fittings.

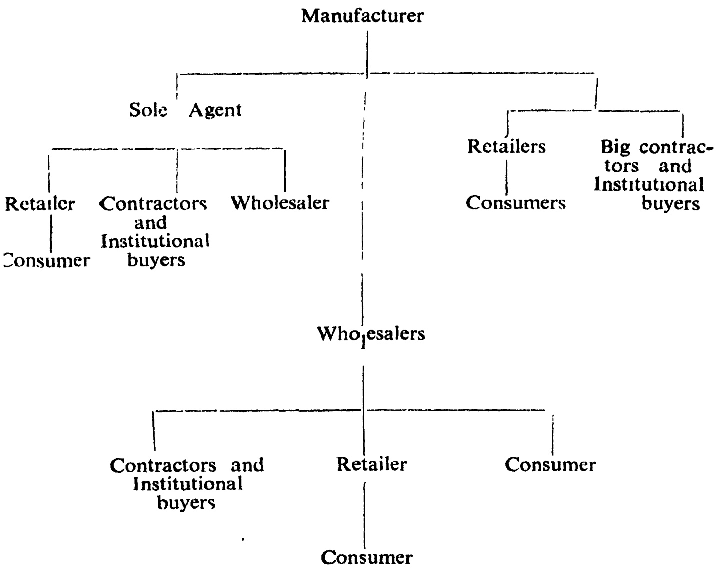
V—DISTRIBUTION AND MARKETING FACTORS

31. Delhi is the main distributing centre for pipe-fittings in the Northern region. More than 50 per cent of the total output of the manufacturers in this region is distributed through this market to U.P., Rajasthan, Punjab and other important markets outside the region. Kanpur and Jullundur are other two important distributing centres for U.P. and Punjab respectively.

Trade Channels

32. The distribution system for the pipe-fittings produced in this region is illustrated in the chart below:—

Distribution chart for G.I. Malleable Pipe-Fittings



It is clear from the chart that no uniform method is followed by the manufacturers in marketing their products to the ultimate consumers. The large-scale and one of the small-scale units have appointed their sole distributors, while all others sell their products mainly through wholesale dealers. They have established contacts with the wholesale dealers within the region and receive direct orders. Orders from the dealers outside the region are generally received through the manufacturers' travelling salesmen. The small-scale units sell only a small portion of their output direct to big contractors and institutional buyers. One of the main reasons for this is that G.I. malleable pipe-fittings have a complementary demand which arises from the use of pipes and since the contractors and institutional buyers mostly get their supplies of pipes from wholesale dealers, they find it more convenient to place orders for fittings too with these dealers. However, the main links between the small manufacturer and the ultimate consumers are the wholesale and retail dealers.

Pricing Policies and Practices

33. The Iron and Steel Controller in consultation with the All-India Malleable Pipe-Fittings Manufacturers' Association, Ahmedabad fixes ceiling prices for indigenous malleable fittings. This Association represents the eight large-scale manufacturers of pipe-fittings in the country. The members units have adopted the ceiling prices as the retail prices for their products and allow certain discounts to wholesale and retail dealers. The large-scale unit of Ahmedabad as indicated earlier has established a very good market reputation for its products in the Northern region and caters to about 50 per cent of the total demand for G.I. malleable pipe-fittings in this region. It, therefore, plays the role of 'price leader' and forms the basis for fixing whole sale prices by small-scale units of this region. Stocks of its products in the markets of the Northern region and the demand for them, besides its prices, directly influence the prices of the small manufactures. Since these units (*i.e.* units at Jullundur and Delhi) have not been able to compete in qualtity with this firm, they have to keep their prices down by about 20 per cent. The products of the units at Meerut being inferior to those of the small-scale units of Delhi and Jullundur, the former have to keep their prices still lower by about 15 per cent. Like the large-scale unit, the small-scale units too publish price lists for various items they manufacture. However, they rarely follow a definite policy regarding discounts and commissions. Being financially weak, they cannot keep back stocks and therefore, generally increase the rate of discount and commission when the stocks of pipe-fittings produced by the large-scale manufacturers of Ahmedabad are available in the markets of Northern region.

Distribution Costs

34. The large-scale unit of this region, which markets its products through the sole-distributors at Delhi, and Kanpur allows a commission of 7½ per cent to the distributors on its wholesale prices. The normal discount paid to a wholesaler or a big contractor is between 20 and 32 per cent on the list prices.

The discount rate generally varies with the quantity purchased. In case of small manufacturers the commission allowed generally varies from 5 to 15 per cent. Most of the small-scale units also vary the discount rate with the quantity purchased. But there are a few small units which quote net prices and do not give any discount. The price of fittings gets normally increased by about 10 per cent when the goods pass from wholesalers to retailers and by about 15 per cent when they pass on to ultimate consumers from the retailers. It is clear, therefore, that the mark-up at the retail stage, is higher than that at the wholesale stage. The total mark-up between the *ex*-factory price and the final price paid by the individual consumer comes to about 26·5 per cent over the *ex*-factory price.

Transportation

35. The small-scale manufacturers generally offer shop deliveries to the local dealers and *ex*-factory deliveries to outside dealers. Normally road transport is used for deliveries in nearby markets within the region, while for far off markets such as Bombay, Hyderabad, Madras and Calcutta rail transport is the only means.

Inventory Turnover and Stock Requirements

36. Usually production is for stocks and not against orders. Normally, a month's production stocks are kept by manufacturers to meet dealers and consumers requirements. In terms of value such stock requirements vary from about Rs. 3,000 to Rs. 4,000 in case of a small-scale units whose annual production is of the order of Rs. 48,000. During monsoon when the construction activity is at a low ebb, the demand for pipe-fittings declines. Output of pipe-fittings during the monsoon months is also hampered. From October to April however, there is brisk construction activity and, therefore, the demand for pipe-fittings increases and the manufacturers have not to keep much stocks in hand. The stocks are financed either out of working capital available with the manufacturers or out of the funds supplied by sole agents who act as financiers to small manufacturers.

VI—PRODUCTION ASPECTS

Plant and Equipment Requirements

37. In the units surveyed the equipment used for the manufacture of G.I. malleable pipe-fittings generally consists of pit-furnaces and crucibles, moulding boxes annealing furnaces, galvanising equipment and threading vices or lathes. The machinery and equipment required for a well-equipped unit are as below:—

1. Cupolas with charging platform or pit-furnaces and crucibles.
2. Moulding machines.
3. Double ended grinders.
4. Tumbling barrels.
5. Heat treatment furnace.
6. Containers for heat treatment furnace.
7. Moulding box.
8. Core sand mixer.
9. Blowers.
10. Threading machines and turning machines.
11. Hot galvanizing equipment or electric galvanising equipment.
12. Rock well hardness testing machines.

Production Techniques and Problems

38. Cast iron mixed with about one-third of steel scrap is melted either in crucibles or cupolas. The molten matter is cast into fittings of required shapes and sizes by box moulding method. After filing and grinding, these fittings are made malleable through annealing process. This process takes about a week-about 3 days for heating and 3 days for slow cooling. Steam coal as well as hard coke furnaces commonly known as pit type furnaces, are used in this region for annealing. After the required malleability has been attained, the fittings are galvanised (coated with zinc) either by hot process or electrical process (cold process) and are thus made rust proof. Finally threads are cut. Some of the small-scale units in this region have installed power operated lathes and threading machines for the purpose, while others use the hand operated threading vices.

39. The main production problem facing the small-scale sector is to attain proper malleability on economic lines. Proper malleability may not be attained due to various technical reasons. At present only 1 or 2 small-scale units in this region use steam coal furnaces for annealing operation, otherwise all follow the

traditional method of doing it in hard coke furnaces. In hard coke furnaces temperatures generally fluctuate very widely and some times shoot up to 1800°C while constant temperature of 900°C suited for the purpose. Also heat is not uniformally distributed in hard coke furnaces. Recharging too is not possible in a hard coke furnace and therefore, heating at a constant temperature is difficult to achieve for the desired period for annealing. Moreover, in the furnace the container (containing cast pipe-fittings and iron oxide) comes in direct contact with the fuel and therefore, its life is reduced considerably. Because of all these reasons it is not possible to attain proper malleability by this method. Batch type coal-fired annealing furnaces are better suited for effective annealing. In this furnace a desired temperature may be maintained for annealing cycle and the loss for containers is considerably reduced because combustion chamber and heating chambers are seperated. Temperature can be judged with the help of pyrometer. Oil-fired furnaces can also be used for annealing treatment. It is, therefore, suggested that the small units should approach the Small Industries Service Institute, New Delhi, for necessary technical guidance.

40. The other difficulty experienced by the small-scale manufacturers relates to galvanization. They generally lack the technical know-how of hot process of galvanization and therefore, too much zinc sticks to the fittings increasing thereby their production cost considerably. Finish too is rough. Due to lack of technical know-how, some of the units follow the cold process. The galvanization obtained from this process is not liked by the consumers and as such these fittings are sold at lower prices as compared to hot galvanized pipe-fittings. During field investigations, these units were advised to approach the technical staff of the small Industries Service Institutes in their States to seek guidance in the hot process of galvanization.

Raw Materials and Components

41. Pig iron, steel scrap and zinc are the essential raw materials required for the manufacture of G.I. malleable pipe-fittings. The distribution of pig iron is controlled by the Government. At the time of survey (March, 1958) only 8 of the 15 small-scale units in this region were sanctioned quota, while others generally use iron scrap purchased from the local market. The quota holders mostly place their orders of iron with the registered stock holders instead of getting it direct from the manufacturers of iron and steel at first column rates. Steel scrap is either purchased from steel processing industries or from the local markets. Zinc is freely available in the markets of all the three centres of concentration of G.I. malleable pipe-fittings industry in this region. To a quota holder pig iron costs about Rs. 8 per md. when purchased from

registered stock holders at second column rates. Since the price of iron has been fixed F.O.R. destination by the Iron and Steel Cotroller it does not differ from place to place. However, the transportation cost from the depot to the manufacturing site makes some difference in the cost of procurement of iron at different centres. The non-quota holders purchase pig iron from the local markets at Rs. 10 to Rs. 13 per md. Steel scrap costs about Rs. 6 per md. while zinc is available at Rs. 50 per md.

42. The problems of the small-scale manufacturers of G.I. malleable pipe-fittings relating to raw materials is two-fold :(*i*) Non-availability of iron to some of the units at controlled rates and (*ii*) inadequate supply of proper categories of iron and quota holders. Seven of the 15 small-scale units in this region purchase iron from the open market. It is roughly estimated that pig iron procured from the open market increases the production cost of tees of ½" dia. by about Rs. 0—10 per dozen. Even the quota holders purchase pig iron from registered stock holder at second column rates. The second column prices are generally higher by about 15 per cent than the first column price. The main difficulties faced by the small units in getting direct supplies are: (*i*) the manufacturers of iron and steel do not entertain any orders for less than one wagon load (about 22 tons) which forms 4 to 5 times of the quarterly quota sanctioned to an average small-scale unit and (*ii*) 25 per cent of the value is to be deposited in advance with manufacturers of iron and steel while placing orders. It was learnt that the money paid in advance is blocked for about a year since this is a normal gap between dates of placing orders and getting supplies.

43. Tata ingot moulds suit best for the manufacture of G.I. malleable pipe-fittings but being in short supply, the quota holders do not generally get them to the full extent to which they are entitled by quotas. The Directors of Industries of different States should sanction quotas of required grade of pig iron to all the small-scale units manufacturing pipe-fittings when the supply position improves during 1959.

Power and Fuel

44. Coke and Coal form the main source of fuel in this industry. Coke is required for running cupolas or for melting iron in crucibles and coal is used in annealing furnaces. But since most of the small-scale units in this region, have coke fired furnaces for attaining malleability, coke is more in demand by the small-scale sector. The distribution of coal and coke is controlled by the Government and due to overall shortage and transport bottle-necks all the small-scale units of pipe-fittings in this region do not get coal or coke at controlled rates. Their price in the open market is generally higher by Rs. 0·50 to Rs. 0·57

per maund and therefore, the production cost of non-quota holders increases. Moreover, even the quota holders in many cases are not getting right type of coke. By-product hard coke is considered best for the G.I. malleable pipe-fittings industry, while many of the small-scale units particularly at Jullundur get only beehive coke. However, the problem can only be remedied when the overall supply position improves in the country.

Quality Control

45. *Quality Standards*—The Indian Standards Institution has prepared draft standards for G.I. malleable pipe-fittings. The large-scale manufacturers more or less follow the British Standards or the specifications prescribed by some of the big consumers like the Railways and Municipal Committees for their own requirements. The small manufacturers, however, produce to specifications suggested by the dealers who market their products. As such there is a great difference in the quality of their products. To effect uniformity in specifications, it is expected that the Indian Standards Institution would finalise the specification without much delay. Malleability standards (IS : 227) have already been formulated. It is recommended that small-scale units should manufacture pipe-fittings according to these standards. The District Industries Officers of different State Governments and the technical officers of the Small Industries Service Institutes should bring this recommendation to the notice of small scale manufacturers. The latter should help the manufacturers to make fittings according to I.S.I. Standards.

46. *Problems related to demand factors*—Quality of G.I. malleable pipe-fittings produced in the small-scale sector, calls for much improvement. If the existing state of affairs continues, it is feared that a major portion of the increased demand in the coming years will be met by the large scale units. Among others, the main reason for low quality is the severe competition that exists within the small-scale sector of the Northern region. Some of the small manufacturers finding it difficult to stand competition are forced to lower their prices at the cost of quality in order to stay in business. To check such unhealthy competition it is recommended that the proposed association of small-scale manufacturers of the Northern region (page 35) should fix floor prices keeping in view the desired minimum standards and persuade its members not to sell their products at lesser prices than the fixed or lower the quality of the products. The fixation of floor prices will also help them to get fair return for their products.

Labour and Employment

47. *Present Employment*—The average daily employment in the industry of this region is calculated to be 446—346

in the small-scale sector and 100 in the large-scale sector. About 70 per cent of the persons employed in the small scale units are skilled workers. The unskilled labour constitutes 20 per cent of the total employment in these units, whereas the persons engaged in managerial, supervisory and clerical services form 11 per cent. Generally the local mistries are the production supervisors. In most cases, they are not qualified engineers but have a long experience of working in engineering firms and foundries. They recruit semi-skilled labourers and train them according to their needs. The mistry or the technical supervisor is generally the highest paid worker in the small-scale units, getting about Rs. 200 per month. The skilled labour working on lathes, threading machines or in casting work get from Rs. 100 to 125 per month. The monthly wages of the unskilled workers vary between Rs. 40 and Rs. 60. Most of the work in Delhi and Jullundur is being done on time wages rate basis; but the units at Meerut engage labour on piece wages for thread cutting while casting work is done on contract basis.

48. *Future Outlook*---No doubt the production of the units in this region has been increasing rapidly during the last three years, still quite a substantial capacity is lying idle. At the same time about 50 per cent of the regional demand for G.I. malleable pipe-fittings is being met by the imports from other regions. The low demand for the products of the small scale sector is mainly due to their inferior quality. However, the implementation of the recommendations made in the report will result in improvement in quality of the products of small scale units. It is, hoped that with the improvement in quality and increasing demand the production in this sector may double by 1960-61 as compared to 1957. If the recommendation regarding the allocation of a portion of additional capacity to be licensed for small-scale sector is agreed to, the employment in this sector may increase from 346 in 1957 to about 700 in 1960-61. In other words, the employment in the small-scale sector may increase by about 100 workers per year.

VII—FINANCIAL REQUIREMENTS AND PROBLEMS

Fixed Capital

49. The fixed capital investment in the small-scale sector of the industry in this region is about Rs. 2·55 lakhs—Rs. 1·74 lakhs in machinery and equipment and Rs. 0·81 lakh in land and buildings. While all the 11 small units in Delhi and Meerut are functioning in rented buildings, the units at Jullundur have their own premises. The units at Meerut have inadequate machinery and equipment. Five of the eight small-scale units there work on hand operated threading vices, while the units at Jullundur and Delhi have installed power operated lathes and threading machines. As discussed earlier in the Chapter on 'Production aspects' it is essential that the units at Meerut install power operated threading machines. Moreover, none of the small-scale units possess hardness testing machines.

50. The fixed capital requirements of the small-scale units in this region are mainly for installing power operated threading machines, hardness testing machines and for constructing steam coal fired furnaces as recommended earlier in the report. It is, however, not possible to give monetary estimates of fixed capital requirements of the industry as a whole, for these purposes. A properly equipped unit for producing 50 tons of pipe-fittings per annum will require Rs. 50,000 for purchase of machinery and equipment.

Working Capital

51. The total working capital employed in the small scale sector of the industry in this region is of the order of Rs. 3·57 lakhs forming about 58·3 per cent of the total investment in this sector. The working capital per unit of production is given in Table XI.

TABLE XI

Working Capital per Unit (Rupee 1) of Production

Centre	Working capital per unit (Rupee 1) of production in Rs. — Small-scale units	Large-scale units
Delhi	0·446	0·684
Jullundur	0·541	—
Meerut	0·242	—

Source : Field Investigations.

52. If the working capital per unit of production may roughly be taken to indicate the comparative financial position of the units at different centres, Table XI reveals that the small-scale units of Meerut are very poorly financed as compared to those of Jullundur. As such, these units are at a disadvantage in the purchase of raw materials and in the disposal of their finished goods. Due to pressing necessities of replenishing their stocks for further production, the small-scale units, particularly at Meerut have to sell their finished products at less profitable terms. Similarly they are handicapped on account of their inability to block their meagre working capital in bulk purchase of raw materials and fuel at lower prices. The total working capital requirements of the small-scale sector for efficient working and for exploitation of capacity lying idle so far is estimated to be about Rs. 1·65 lakhs—Rs. 10,000 at Delhi, Rs. 30,000 at Jullundur and Rs. 1·25 lakhs at Meerut. These estimates are mainly based on the statement of the manufacturers who in turn estimated their requirements keeping in view their potential production with their present equipment.

Credit Position and Cost of Funds

53. Out of the 15 small-scale manufacturers in this region, only one has borrowed funds amounting to Rs. 7,000 under State Aid to Industries Act, otherwise all the present funds of Rs. 6·05 lakhs have been raised by the manufacturers from their personal resources. The units of Jullundur are comparatively better off and appear to be in a position to affect such technical improvements as have been recommended in the report. However, 2 out of 3 units of Delhi and 6 out of Meerut would need Government aid for both fixed capital and working capital requirements for carrying out the suggested improvements. It is, therefore, recommended that these units should approach the National Small Industries Corporation for the supply of the threading machines and hardness testing machines under the hire-purchase scheme and, for funds required to construct steam coal furnaces and for working capital, they should approach the respective Direcotrs of Industries under the State Aid to Industries Act.

VIII—ORGANISATION AND MANAGEMENT PROBLEMS

Locational Factors

54. The use of pipe-fittings is directly dependent upon the use of pipes in providing filtered water and sewerage facilities, in supplying gases like coal gas or steam in industries, etc. Therefore, they are consumed almost in every big town of the country. However, the centres of concentration of this industry in the Northern Region are Delhi, Jullundur and Meerut. These concentrations have developed because of the following main factors : (*i*) easy availability of experienced labour, (*ii*) big local or near by markets and (*iii*) an early start. Delhi provides all the above-mentioned facilities for setting up the G.I. malleable pipe-fittings units. Besides, availability of trained labour and basic raw materials, it also serves as a big distribution centre for pipe-fittings. Jullundur is short of trained labour for hot galvanization while Meerut has to depend upon Delhi for marketing its products.

Organisational Problems

55. There exists only one association named "The All India Malleable Iron Pipe-Fittings Manufacturers' Association, Ahmedabad" in the G.I. malleable pipe-fittings industry. It represents only the eight large-scale manufacturers of the country. The association is well-organised and represents the interests of its members at the time of fixation of ceiling prices of indigenous G.I. malleable pipe-fittings by the Iron and Steel Controller.

56. Except the large-scale unit which is a member of the aforesaid association, no other unit of this region is represented in any association or organisation. It will be in the interest of the small-scale sector if the units of the Northern Region are organised into an association. Apart from determining the floor prices (as recommended earlier in this report) for the pipe-fittings produced in this sector, the association might furnish information on various aspects of the industry such as the demand prospects, market position and export possibilities etc. It will also help its members to take advantage of the various official and non-official agencies set up for assisting the small scale manufacturers. It is, therefore, recommended that the Directors of Industries in Punjab, Delhi and U. P. should offer all possible encouragement to small scale units to form a regional association. For encouraging the proposed association it is suggested that in the matter of Governmental assistance such as credit facilities under the State Aid to

Industries Act and the supply of machinery under the hire-purchase scheme of the National Small Industries Corporation, etc., preference should be given to such pipe-fittings units as are members of the Association and make standard goods.

IX—GOVERNMENTAL FACTORS

57. The G. I. malleable pipe-fittings industry is covered by the Industries (Development and Regulation) Act. The main Governmental factors affecting the industry, particularly the small-scale sector of it are (*i*) import policy for malleable pipe-fittings; (*ii*) Government purchases; and (*iii*) sanction of new capacity to large-scale sector.

Import Policy

58. After the slump of 1951-52 in the industry due to heavy imports of quality malleable pipe-fittings mainly of Crane and Co., of England and simultaneously of cheap priced Japanese fittings, restrictions were gradually imposed on the imports of malleable fittings. For the last four years imports of these fittings have been almost completely banned. The present import policy (April—September, 1958) does not allow the imports of flanges of all sizes, elbows, tees and sockets of ½" to 3" diameter including reducers; and plugs, nipples and checknuts of 1" diameter and below. For rest of the items and sizes, licences are issued to actual users on *ad hoc* basis. The restrictive import policy has diverted the demand for imported goods to indigenous products. However, considerable quantities of such fittings were imported from Japan during 1957 under the heads of "refrigeration fittings" and "steam fittings." The Japanese fittings being cheap gave a tough competition to the indigenous industry and were responsible for recessionary conditions in the pipe-fittings industry during 1957-58, so much so that at the time of field investigations (March, 1958) most of the small-scale units, particularly at Meerut were either closed or working only intermittently. Now it is learnt that stricter control is being applied in the import of refrigeration fittings and steam fittings and as such unauthorised imports of pipe-fittings has decreased to a great extent. Further in view of the fact that the ceiling prices of indigenous G. I. malleable pipe-fittings as fixed by the Iron and Steel Controller are well comparable with the landed prices of the fittings of M/s. Crane & Co., and that the indigenous production is enough to meet the internal demand, it is recommended that the Government should continue to follow the present restrictive import policy.

Government Purchases

59. Government departments are the big consumers of pipe-fittings. Most of these departments make purchases through D. G. S. & D. The total purchases of water fittings

(including G. I. malleable fittings) by D. G. S. & D. amounted to Rs. 193.74 lakhs in the year 1956-57. Of these, fittings worth Rs. 134.55 lakhs were indigenous. So far, these purchases have been made from large-scale manufacturers only. Most of the small-scale units in this region are not equipped to produce fittings according to specifications prescribed by D. G. S. & D. while others find it difficult to compete quality for quality with large-scale manufacturers. However, with the technical improvement suggested elsewhere in the report, and the price preference now being given by the Government in its purchases, the small-scale units should be in a position to meet Government requirements.

Sanction of New Capacity

60. As stated earlier, the Development Wing of the Ministry of Commerce & Industry has estimated the demand for G. I. malleable pipe-fittings at 9,400 tons in 1960-61. The present annual installed capacity of the large-scale units is 1920 tons of pipe-fittings. It is learnt that one of these units has been permitted expansion for an additional capacity of 1,800 tons and 3 new units have been given licences by the Development wing for a total capacity of 1,545 tons. A capacity of 4,440 tons has also been recommended to other large-scale units but so far licences have not been issued. Thus the total installed capacity recommended and sanctioned by the Development wing to the large-scale sector comes to 9,705 tons of pipe-fittings. A capacity of about 700 tons already exists in the small-scale sector of the Northern Region alone. It, therefore, appears that if during the period 1958—60 the whole of the licensed capacity is installed by the large-scale units, little or no scope would be left for the small-scale sector. Therefore, it is recommended that the licensing committee of the Ministry of Commerce and Industry should take into account the existing capacity and need for expansion of the small-scale sector of the pipe-fittings industry, because it can produce quality pipe-fittings at competitive prices. The committee should allocate, a portion of the additional capacity to be licensed to the small-scale sector.

X—NEW OPPORTUNITIES FOR SMALL BUSINESSMEN

Scope

61. It has been indicated in the chapter on 'Demand Outlook' that the consumption of G. I. malleable pipe-fittings in the country as well as in the Northern Region will double itself during the period 1958—60. It has also been pointed out that malleable pipe-fittings can be manufactured economically on small-scale and a small-scale unit adequately equipped and having sufficient working capital can successfully withstand competition from large-scale factories. The installed and proposed capacity in the large-scale sector of 9,700 tons is, however, more than the anticipated demand of 9,400 tons by 1960-61. In order to safeguard the interests of small scale sector, it has been suggested in the previous chapter that all the proposed capacity should not be allotted to the large-scale, and if that is agreed to, then there may be scope for a few small-scale units to be set up.

Investment Requirements

62. The investment requirements for setting up a workable small unit in rented premises are calculated to be about Rs. 1,00,000. The machinery and equipment will cost about Rs. 50,000 and the remaining Rs. 50,000 will be required as working capital—both for production and marketing functions. Such a unit will have annual production capacity of 50 tons of G. I. malleable pipe-fittings.

Favourable Locations

63. The main considerations which are to be kept in view in the selection of favourable locations for G. I. malleable pipe-fittings unit are (*i*) the easy availability of trained labour; (*ii*) local and nearby market; and (*iii*) transport facilities. On these considerations the following places are decidedly the best for setting up new small-scale units of pipe-fittings in the Northern Region:—

Punjab—Batala. Amritsar, Jullundur and Ludhiana.

Delhi—Delhi and Shahdara.

U. P.—Meerut, Ghaziabad, Agra and Kanpur.

APPENDIX A

List of G. I. Malleable Pipe-Fittings Manufacturers in the Northern Region

Delhi

1. Hind steel Co., 421, G.T. Road, Shahdara (Delhi).
2. O.K. Steel Products, 2/16, Tehwara, Shahdara (Delhi).
3. Punjab Manufacturing Corporation, 485, G.T. Road, Shahdara (Delhi).
4. Wazir Singh & Co., 8380/7, Roshanara Road, Subzi Mandi, Delhi.

Punjab

1. Bombay Brass Works, Nakodar Road, Jullundur City.
2. Kay Chaudhary & Co. (Private) Ltd., Empress Garden Road, Jullundur City.
3. Sohinder Singh & Bros., Rainak Bazar, Jullundur City.
4. Vinod Metal Industries, Pucca Bagh, Jullundur City.

Uttar Pradesh

1. C.B. Industries, Aminagar Sarai, District Meerut.
2. Chandra Engineering Industries, Lesari Gate, Meerut.
3. Kumar Brothers, 117-130, Banker's Street, Meerut Cantt.
4. Malleable Pipe-Fittings Industries, 512, Prahlad Vatika, Meerut City.
5. Malleable Iron Manufacturing Co., 514, Prahlad Vatika, Budhana Gate, Meerut.
6. Reliable Engineering Corporation, Kesari Prasad Building, Budhana Gate, Meerut.
7. Sundershan Iron & Steel Works, Ghosi Mohalla, Lalkurti, Meerut Cantt.
8. W.R.R. & Co., Shanti Nagar, Railway Road, Meerut.

APPENDIX B

LIST OF IMPORTANT DEALERS (VISITED BY THE INVESTIGATION TEAM) OF G. I. MALLEABLE PIPE-FITTINGS IN THE NORTHERN REGION

Delhi

1 Punjab Hardware Mill Store Co., Hauz Kazi, Delhi.

2. Bihari Lal & Co., Hauz Kazi, Delhi.

3. Hindustan Trading Co., Hauz Kazi, Delhi.

4. Madan Lal Bazaj & Co., Hauz Kazi, Delhi.

5. Krishna Pipe Stores, Hauz Kazi, Delhi.

6 Manohar Lal & Sons, Pyare Lal Street, Kashmeri Gate, Delhi.

Uttar Pradesh

1. Kalkendra, 79/13, Latouche Road, Kanpur.

Punjab

1. Hari Chand Krishan Kumar, Narain Bazar, Jullundur.

2. Devidas Sharma & Co., Narain Bazar, Jullundur.

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List of Small Scale Industry Analysis and Planning Reports—(*contd.*)

44. Hand Tools (Northern Region).
45. Soap Industry (Southern Region).
46. Builders' Hardware (Eastern Region).
47. Glass Beads (Western Region).
48. Domestic Utensils (Southern Region).
49. Glass Beads (Southern Region).
50. Scientific Glass Apparatus Industry (excluding Ampoules & Phials) (Western Region).
51. Plastic & Rubber Insulated Wires (Northern Region).
52. Wood Screws, Wire Nails and Panel Pins (Southern Region).
53. Wood Screws, Wire Nails and Panel Pins (Northern Region).
54. Diesel Engines (Stationary Type) (Northern Region).
55. Industrial Fasteners (Western Region).
56. Sanitary Fittings (Southern Region).
57. Machine Tools (All India).
58. Glass Scientific Apparatus (Eastern Region).
59. Industrial Fasteners (Northern Region).
60. Fruit & Vegetable Preservation & Canning Industry (All India).
61. Beam Scale (Eastern Region).
62. Industrial Fasteners (Southern Region).
63. Cutlery (Southern Region).
64. Umbrella Ribs (All India).
65. Sewing Machines and Parts Industry (Western Region).
66. Domestic Utensils (Northern Region).
67. Plastic and Rubber covered wire (Western Region).
68. Sewing Machines and Parts (Southern Region).
69. Pipe Fittings (Southern Region).
70. Leather Footwear (Western Region).
71. Umbrella Assembly Industry (Southern Region).
72. Paint, Varnish and Lacquer Industry (All India).
73. Preparatory Machinery for Art Silk and Silk Weaving Industry (Western Region).
74. Plastic and Rubber Covered Wire (Southern Region).
75. Domestic Electrical Appliances (Motor Type) (Northern Region).
76. Fountain Pens & Nibs (Southern Region).
77. Domestic Utensils Industry (Eastern Region).
78. Domestic Electrical Appliances (Heater Type) (Southern Region).
79. Domestic Electrical Appliances (Heater Type) (Northern Region).
80. Picking Band and Leather Belting (Western Region).
81. Cutlery (Northern Region).
82. G. I. Malleable Pipe Fittings Industry (Northern Region).
83. Plastic Goods Industry (Southern Region).
84. Industrial Rubber Goods (Western Region).
85. Sanitary Fittings (Northern Region).
86. Sports Goods (Southern Region).
87. Synthetic Diamond Cutting Industry (Southern Region).
88. Cutlery Industry (Western Region).
89. Wood Based Industry Furniture (Southern Region).
90. Soap Industry (Eastern Region).

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1. Small Industries Service Institute, 56, Sunder Nagar, New Delhi.
2. Small Industries Service Institute, 4, Camac Street, Calcutta-16.
3. Small Industries Service Institute, 20, Rutland Gate, Madras-6.
4. Small Industries Service Institute, 40/40A, Cawasjee Patel Street, Fort, Bombay-1.
5. Small Industries Service Institute, B. XV. 1679, Ferozpur Road, Ludhiana.
6. Small Industries Service Institute, 113/80, Swaroop Nagar, Kanpur.
7. Small Industries Service Institute, Bharalumukh, Gauhati.
8. Small Industries Service Institute, Boring Road, Patna-1.
9. Small Industries Service Institute, Darpan House, Chandni Chowk, Cuttack.
10. Small Industries Service Institute, 10–Industrial Estate, Pologround Indore.
11. Small Industries Service Institute, Near Police Parade Grounds, Trivandrum.
12. Small Industries Service Institute, 193, 6th Cross Road, Gandhi Nagar, Bangalore-9.
13. Small Industries Service Institute Iftakar Mansion, 79, Azambad, Hyderabad.
14. Small Industries Service Institute, Ismail Road, Jaipur.
15. Small Industries Service Institute School of Designs Building, Karan Nagar, Srinagar.
16. Small Industries Service Institute 416, Mandi Syed Khan, Agra.
17. Small Industries Service Institute, Sahakar Bhawan, Trikor Bagicha Rajkot.
18. Small Industries Service Institute, 15, Colvin Road, Allahabad.
19. Small Industries Service Institute, Bachi Lodge, Club Road, Hubli.

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