CHAPTER - IV

INDIA'S SHIPBUILDING INDUSTRY

India was famous for several centuries in the past for her proficiency in the art of ship building which reached a fairly high standard in ancient times. In the 13th century, Marco Polo saw large Indian Ships that carried 10 small boats slung on the side with 60 cabins below the main deck, mostly four-masters and with as many as 14 watertight compartments operated by stout bulkheads. For those times, these achievements indicate the highest degree of technical knowledge and workmanship. Later, the East India Co., recognised the excellence and durability of India-built ships. It established seven ship building yards in India and right upto 1840 a large number of naval crafts and merchant vessels of all types were built by the shipyards.

The greatness of the Indian Shipbuilding Industry was recognised even by Great Britain. Several wooden vessels were built for the British Navy in Bombay, more than 125 years ago. "The 36 gun-frigate "Pitt" was built in 1805. Six ships of the line of 74 guns and five of 84 guns were built in the years shortly following that date and the composite brig "Fame" was constructed as late as 1880".*

* From a publication entitled "Sandhigram" pub. by Scindia Steam & Navigation Co. Ltd. dated 21-6-41 issued on the occasion of the foundation laying ceremony of the Hindustan Shipyard at Vizag. p.22.
However, with the growth of the political power of Great Britain in India, the interests of the Indian Shipbuilding Industry were sacrificed for the benefit of the British Shipbuilders and every conceivable step was taken for discouraging the carriage of the trade between India and Great Britain in India-built ships. Thus began the decline and fall of the ancient industry of India. The use of steam power and of steel in place of timber, created a revolution in the technique of ship construction and released new forces which it was unable to withstand. The Indian Shipbuilding Industry, thus, lost all opportunities of adding a new chapter to her magnificent history. A maritime country of India's importance had, therefore, to depend entirely on the foreign-built ships for its maritime activities as well as for its defence.

History of Modern Shipbuilding in India:

The industry lay defunct for about a century until the idea of establishing a modern ship building yard in India was conceived simultaneously with the promotion of the Scindia Company in 1919 and it was the aim and object of the promoters of that company that India should develop an Indian Merchant Navy consisting of ships built in Indian shipbuilding yards. When the late Sheth Narottam Morarjee and late Shri Walchand Hirachand went to England in 1919 for buying steamers for the Scindia Company, they also discussed with shipbuilding experts in Great Britain the problems connected with the building of modern ships in India. However, the severe rate
wars which the Scindia Company had to face from the British India Company in the initial years of its existence, the lack of support and encouragement for the development of national industries — not to mention the policy of frequent hindrance and hostility — on the part of the then foreign Government, and the deep depression in the world of shipping which followed during those years made it impossible for the Scindia Company to realise its dream of building Indian ships in the Indian shipbuilding yard.

After various vicissitudes through which the pioneering project passed, the foundation stone of the shipyard was finally laid in June 1941 by the late Dr. Rajendra Prasad, who was then the President of the Indian National Congress. The construction of the yard had to be carried out in extremely difficult conditions created by the Second World War and in the face of controls and shortages of materials, equipment and skilled labour, that have continued even in the post-war period. The progress of yard construction was interrupted by enemy bombings in 1942; and machinery and equipment had to be dismantled and transferred to Bombay as directed by the Government. Further progress on the construction of the yard was resumed in 1943 and completed by 1946.

Location of the Yard at Vizag:

It is unnecessary to consider here what are the essentials of a modern shipbuilding yard and how the Scindia Company proposed to lay out its yard at Vizagapatnam.
essential requirements are:

1. A suitable site,
2. Requisite depth of water,
3. Proximity to raw materials,
4. Adequate supply of labour,
5. Dry-docking facilities,
6. Road and rail connections and
7. Adequate supply of fresh water.

Site: A suitable site for the Scindia shipyard was selected in the South-West of Vizagapatnam harbour upon the advice of Sir Alexander Gibb and Partners, a well-known firm of consulting engineers. This choice was further confirmed by the French experts appointed by the Government of India in 1949, after surveying various possible sites at all the Indian Ports. They considered it to be "the best in India under the existing conditions for the development of shipbuilding industry". Vizagapatnam, a natural land-locked harbour is situated on the Coromandel coast about midway between Madras and Calcutta and shares with the adjoining health resort, Waltair, a bracing climate which cannot fail to have beneficial effects on the workers. The harbour has been developed on modern lines within the last few years and is well protected. The selected site measuring about 55 acres was acquired on a lease of 99 years. The soil is firm and overlays rock at moderate depths. This is particularly suitable for bearing heavy loads common to shipyards.

Depth of Water: The waters of the harbour near the
shipyard site are of ample depth and extent, to permit of the launching of even the biggest ships of the present day. The tide range is very satisfactory and currents are negligible even after heavy rains.

Proximity of Raw Materials: Steel which is the most important raw material, can be railed down from Tatanagar which is although at a distance of 558 miles on the main railway line from Vizagapatnam, is nearest supplier, on the eastern sea-board of the country.

Supply of Labour: Unskilled labour can be obtained locally. As there were no outstanding industrial works then at Vizagapatnam a large part of the skilled labour had to be obtained from outside. The skilled labour is now trained in the yard itself. A regular force of skilled labour is maintained on the spot and a workers' housing colony has been laid out over 146 acres of land where the workers live with reasonable comforts.

Dry-Docking Facilities: The Scindias wanted to construct a dry-dock in course of time, to accommodate the largest vessels which could be built in the yard. It would have been also very useful for the Visag port. However, till up-to-date unfortunately, it has failed to become a reality.

Road and Rail Connection: The selected site is situated on the great trunk road between Madras and Calcutta. There was no rail connection to the site. However, now it is well connected by rail, since the Port Administration Railway system which is connected with the main lines of the Southern
and Eastern Railways, was extended to the shipyard. The guaranteeing by the Scindia Company of the full amount of depreciation on the capital outlay on this extension and a certain minimum return by way of interest thereon was a striking illustration of how the Indian shipbuilding industry has to be established itself in India not only without any "aid" or "concession" from the Government of India but even under onerous conditions imposed on it by that Government.

**Supply of Fresh Water**: There are two sources of supply of fresh water not far from the site of the shipyard. There is a piped gravitational supply from the adjoining valley near the site. There is also a supply of sweet water pumped from wells situated at a short distance from that site.

The yard was initially built on the 56 acre site. It was designed by Sir Alexander Gibb and Partners, a firm of consulting Engineers, with scope for the provision of 8 building berths and necessary workshops. To start with the yard had two berths, and the building of large ocean-going ships was commenced in 1946.

The exigencies of the peak years of War intervened to delay progress, with the result that the first stage of construction of the shipyard with only two shipways was completed as late as in 1947. The keel for the first ocean-going ship of 8000 tons "Jala-Usha" was laid in June 1946.

A great opportunity to expand the activities of the yard was lost during and after the World War II on account of the unhelpful attitude of the then foreign Government. Late Shri Walchand in his speech delivered on 2nd November 1945 before
the Annual General Meeting of the Scindia Steam Navigation Co. Ltd. regretted this fact very much when he said, "It is the misfortune of the Indian Shipping that while it was not allowed to build ships in Indian yards during the War and while no facilities given to it even to build such ships as it has lost during the War, His Majesty's Government, have given every facility to British shipping to make up the losses sustained by them during the War ..... His Majesty's Government built a large number of ships during the War. Not a single ship was built by the Government of India ..... British shipowners have been allowed to build ships on their own account while the war was on. Indian Shipowners were not only not given any facilities in that direction, but they were not allowed to build ships in the Indian yard which was fully laid out for that purpose. With a view to increase their competitive capacity and to maintain their financial strength, British shipowners have been given actual subsidy i.e. financial assistance to build their ships during the War. No such assistance has been given or even contemplated by the Government of this country".

In the same speech late Shri Walchand referred to the two other important aspects of our shipbuilding industry which was in throes of teething troubles, viz. difficulties of securing adequate orders for building ships in the yard, and covert threat of the then Government to start a Government yard. It was quite natural that ships built in the Indian yard would not have any export market at least in the initial stages. He therefore felt that unless the Government of India secured an
adequate share of India's maritime trades for national shipping and laid down a policy whereby the ships carrying such trades would be built in India as was done (and continues to be done even now) in some of the maritime countries of the world, it was obvious that volume tonnage to be built in India would be very limited. Therefore there was no wisdom in starting and then Government sponsored shipbuilding yard. He appealed to the member of the shipbuilding panel appointed by the Government to persuade the Government to give all the necessary encouragement to the private shipbuilding yard in which the Scindias had invested over Rs.1.25 crores.

As mentioned above, the Government of India, had appointed a shipbuilding panel and had entrusted them with the task of making recommendations as to how the shipbuilding industry could be established and stabilised in the country. It was also requested to consider the question of giving financial help that might be necessary to give, at least in the early stage of development of that industry for the purpose of establishing it on a sound and economic footing in India. However, the panel did not report anything in the matter. The Scindia Shipyard Company also wanted to submit its case for financial assistance to the Tariff Board so that like its counter part in U.K. which received substantial financially assistance from the Government it could secure a reasonable help in the matter.

The first ship to be constructed at Vizag yard was the S.S. "Jalausha", a 8000 tonner at a cost of about Rs.68
lakhs. It was constructed under difficult circumstances. The shareholders of the company were disturbed about the high cost of shipbuilding in the yard. It was true that the ship took about 27 months for completion on account of delay in receiving the imported materials and a three months strike of the workers of the yard, and its cost was high compared to the cost of a similar ship built in the U.K. Yard. However, it still compared favourably with the cost in countries like Italy, Canada and Australia where a 8000 tonner would cost Rs. 76 lakhs, Rs. 73 lakhs, and Rs. 69 lakhs respectively. It was therefore explained to the shareholders by late Shri Walchand that one had to pay the price for establishing an essential industry like shipbuilding. He referred to the bill moved in the Australian Parliament to allow ships built only in the Australian yards to ply in the coastal trade of that country. Besides the Australian Government in order to put the shipbuilding yards on a competitive basis undertook to pay the difference in the cost of building ships in their own yards and the cost of similar ships built in U.K. After the closure of the Second World War Italy also gave a subsidy of over £15,000,000 for building about 2,60,000 tons in shipyards of the country.

Upto 1950, the Scindias invested about Rs. 4½ crores in the shipbuilding yard which had till then only two building berths where cargo ships of 8000 ton could be built. However, the yard was designed to have 8 building berths and with a capacity to build large ships, upto 550 ft. in length and with a deadweight capacity of about 15,000 tons. To reach this full-sized economic unit, the Company needed Rs. 8/10 crores of
finance and availability of orders for building ships with a view to maintaining continuous production and keep the yard in a state of increasing efficiency. The company found itself unable to produce any further finance out of the resources of its shipping business. As a matter of fact, the provision of capital so far expended on the project had proved to be a grievous burden on the company's resources so much so that the growth and development of its business of shipping had seriously crippled. Moreover, the annual burden of Rs. 32½ lakhs that the company had to carry in the form of debenture interest and provision for sinking fund was too heavy to bear, besides being altogether unremunerative.

In a memorandum prepared by the Scindia Steam Navigation Company it analysed the causes of high shipbuilding costs in India. "Neither the Scindias nor other shipowners can afford to have their ships built at Vizag because of higher building costs compared with the costs in the U.K. The causes of the comparatively higher costs in India may be summarised as Under:-

1. The Visakhapatnam yard has been built in the midst of the Second World War at a very high price level and in small stages extending over a long period.

2. Indian steel materials delivered at Vizag cost considerably more than corresponding cost to the British shipbuilder.

3. Propelling and auxiliary machinery, equipment and a variety of stores, instruments etc. have to be imported.

4. The Vizag yard being the first modern shipbuilding
establishment in the country, the workers and supervisory personnel have been under training in the initial stages and their output and efficiency cannot therefore bear equal comparison with those of the workers in the U.K. where the industry has been established for more than last 100 years.

(5) The shipyards in the U.K. and elsewhere work to a much greater capacity and build many more ships simultaneously than the Vizag Yard does or can at present. The burden of standing charges or overhead expenditure is therefore heavier per ship built at Vizag, than in the British yards.

The price of an 8000 tonner built at Vizag works out between Rs. 65 and 67 lakhs for the reasons stated above. Canada, Italy and Australia have indicated over Rs. 69 lakhs for a ship of similar size and type. Only established British yards which have built up the industry with direct and indirect Government aid over a very long period are quoting a price of about Rs. 44 lakhs for 8000 tonners, similar to those built at Vizag."

Having built four 8000 tonners viz. "Jalausha" "Jalprabha", "Jalprakash", and "Jalapankhi", for its own requirements, the Scindia company could not afford to build further ships owing to their high cost. The company, therefore, urged the Government to pay a construction subsidy equivalent to the excess of the cost at Vizag, over the cost of building an

idential ship in the U.K. It was felt that unless such a subsidy was granted, it was not possible for Indian shipowners to buy ships built in their own country.

Confronted with the aforementioned difficulties and in view of the reluctance of the Government to grant any construction subsidy, the company urged upon the Government to take over the ownership and control of the shipbuilding yard. Negotiations were started with the Government in the beginning of 1948 with a view to their taking over the yard. These could not, however, be finalised owing, at first, to a disagreement as regards the basis of valuation, the company being anxious to recover, the expenditure actually incurred on the yard, while the Government of India insisted upon writing off a large amount by way of depreciation. Subsequently, however, the progress of negotiations was halted by the serious financial crisis which confronted the Government of India in the latter half of 1949. As an interim measure, the Government, however, placed an order with the company for the construction of three 8000 tonners on a subsidised basis in order to help the shipbuilding yard in its operations. The ships were to be built on Government account at a fixed price of Rs.64.5 lakhs each. The basis of costing adopted in fixing this price assumed that there would be three berths functioning and that delivery times would be 18 months from the dates of laying the keels, and no interest or profit element was included, the Scindia company guaranteed to purchase the vessels at their U.K. parity prices.
The Estimates Committee in its first report (1950-51) had also commented extensively on the matter. It was felt by the Committee that in order to make the Vizag Shipbuilding yard an economic unit it was necessary to extend the yard from its present capacity of three berths to eight berths. As the full scheme would have involved expenditure to the extent of 8 to 10 crores of rupees and Scindias were not able to raise funds to that extent, they approached the Government with a proposal that the latter might take over their undertaking at Vizag with all commitments and cost, which the company had actually incurred for the purpose. The Government appointed a French Firm of Naval Engineers to advise in assessing the value of the yard and in regard to the establishment of a new shipyard in the country. The firm of experts recommended an overall reduction of 25% on the cost of shipyard which came to Rs.1½ crores. As Scindias would not agree to the reduction of the cost incurred by them on the building of the shipyard, the Government were faced with the proposition of either closing down the shipyard or helping it going by paying the subsidy. Government eventually decided on the latter course .... At one stage the Government had made an offer to the Scindias that they should join with the Government in forming a new Corporation, in which their capital would be regarded as contribution to the joint corporation. Scindias did not agree to this either. Government, having considered the position that their being, not sufficient demand for eight ships a year which this yard when developed fully, would produce, abandoned the idea of taking over the
yard for the time being.

Another opportune moment for expanding the shipbuilding activities and stabilising the shipbuilding yard as an economic unit, presented itself in 1951 when the coastal trade of our country was reserved for the first time to our own nationals. One of the leading shipowners Shri Dharamsey M. Khatau, Chairman of the Scindia Steam Navigation Co., Ltd., suggested that the existence of the yard coupled with the reservation of the coastal trade, would justify the Government in prohibiting control operations from purchasing foreign tonnage and requiring that all additional owned tonnage on the coast should be Indian built and he agreed to fall in line with such a policy in respect of all coastal tonnage requirements of Scindias and its associated companies. In the background of the shortage of tonnage in the world at that time and with the adoption of the above policy there would be sufficient demand for ships. It would be easy to draw up a short term (five year) plan of constructing ships at the yard and expanding its activities for that purpose and to minimise the ultimate cost of Indian built ships. Unfortunately, these, almost axiomatic propositions did not receive sufficient recognition by our Government.

Towards the close of the year 1951, the Government placed another order for three similar ships to be built at Vizag on similar terms. As regards the first five vessels which were built earlier on the company's own account, the company applied to the Government of India for a construction (differential cost) subsidy equal to the difference between
their actual cost and the price at which they could have been built in U.K. This difference according to the calculations of the company, amounted to Rs. 120 lakhs and represented the capital loss incurred in building those ships. After protracted negotiations, the Government sanctioned a sum of Rs. 80 lakhs only towards that claim. The company, however, felt it unjustifiable and much below their legitimate expectations particularly as there was no inclusion, in the cost of those ships any element of return on the heavy outlay of capital employed in the yard.

The Planning Commission, towards the end of 1951, dealt with the problem of the shipyard and it recommended that the only proper course would be to treat shipbuilding as an essential key industry of national importance to be worked and developed in the public sector, for industrial and economic development of the country.

Even earlier the Estimates Committee also recommended the Government to take over the yard in the national interest since it felt that the shipbuilding was a key industry both for defence and commercial needs of our country and merely financial considerations should not be decisive in this matter. It therefore recommended to the Government a favourable reconsideration of the issue so that the money spent on subsidy could be spent towards the development of the yard, and that in course of time it might become a full fledged shipyard with a capacity to produce ships at competitive rates.

After the publication the draft outline of the First Five Year Plan, negotiations in connection with the shipyard
moved forward quietly and agreement was soon reached in all outstanding issues. Accordingly, on the 21st January 1952, a new company "Hindustan Shipyard Ltd." a private Ltd. Co., was registered at New Delhi, in which the Government of India held a two-thirds interest and Scindias one-third. The New concern took over in March 1952 the shipbuilding business, together with all the asset and liabilities. The valuation of the shipyard was provisionally agreed at Rs. 270 lakhs. This represented the full estimated book-value of net assets of the yard as on 1-3-52 less depreciation. This valuation, though found harsh by the company, was finally accepted by the Directors, who sold the shipyard at a final price of Rs. 2,72,86,160/-. Out of this sum, the amount of Rs. 1,68,91,160/- was to be received in cash in five annual instalments without interest. The balance was to be paid in the form of 10,395 fully paid shares of Rs. 1000/- each of the new company. In addition, to these shares, Rs. 39.6 lakhs were subscribed by the Government of India and Rs. 30,000 by the Scindias. Thus the aggregate initial paid up capital of the new company was Rs. 309.9 lakhs of which Scindias held one-third i.e. Rs. 103.3 lakhs and Government held two-thirds i.e. Rs. 206.6 lakhs.

During the course of the years 1952-53, and 1953-54, Government advanced a sum of Rs. 60 lakhs to the shipyard as debenture loan for development programmes. This amount was subsequently converted into share capital of the yard.

**Agreement with A.C.L.**

After the formation of the "Hindustan Shipyard Ltd.", an
agreement was entered into in July 1952 with the French firm of Shipbuilders", La Societe Annonysme Des Ateliers et Chautiers de la hoire" (the A.C.L.) for technical aid in the management and operation of the yard. The nature of aid to be received was as follows:–

(A) Provision of technical advice in regard to the organisation, development and technical management.

(B) Establishing a fully equipped and competent Designing and Estimating Office at Vizag.

(C) Training and guiding the Indian personnel in the shipyard and in their own organisations in France so as to fit them for positions of the highest responsibility in each Department of the Shipbuilding yard.

(D) Placing at the disposal of the Hindustan Shipyard Ltd. the purchasing organisation and skill of the firm.

(E) Helping in obtaining from foreign countries the necessary priorities for the supply of steel, equipment of stores and all other shipbuilding materials, raw materials, plant and machinery and,

(F) Securing orders for ships from outside India and if necessary, try to bring about the sale of ships built by the Hindustan Shipyard Ltd.

For all these services the payments that had to be made to the A.C.L. included a sum calculated at 4½% of the actual turnover by the company. Besides, an amount not exceeding Rs. 3 lakhs per year had been agreed to be paid for the services of a certain number of expert French technicians. A total sum
of Rs. 374,273/- was paid for the three years ending 1954-55 to these technicians for their services, and the amount paid to A.C.L. at a rate of 4% on turnover worked out to nearly Rs. 6,50,000.

This agreement of the Hindustan Shipyard with the A.C.L. came in for a very severe criticism by the Estimates Committee who examined the working of the yard in 1954-55. It stated in its report, "In the three years of working of the contract, even less than two ships on the average have been delivered while the number under construction are on an average five. It is clear therefore that at this rate heavy arrears are bound to develop unless vigorous steps are taken immediately." It was of the view that the agreement had not worked satisfactorily as far as the shipyard was concerned and the work in the yard had not progressed according to the expectations, and the interest of the yard had severely suffered.

Under the terms of the agreement, the A.C.L. had deputed two technicians, who according to them were well suited for the purpose of assisting the yard in the construction of ships. On the advice of these experts, the shipping yard entered into commitments with various buyers for the delivery of vessels according to a certain time schedule. But the delivery dates were never observed and were altered from time to time. The first schedule was altered not less than five times. This caused a great inconvenience to shipowners who used to make payment to the H.S.L. in the following manner:

- 20% on order;
- 20% on placing the order for steel or machinery;
- 20% on laying the hull;

* Estimates Committee's 14th Report for 1954-55, p.22
20% on fitting out; and 20% on delivery.

when the time-schedules of delivery had become completely unrealistic, the shipowners who had advanced funds in anticipation of delivery found their capital locked up without any return for long periods. The shipowners in the beginning paid installment as usual to the yard to finance the construction of the ships. But when it became apparent that the completion of the ships would take longer than had been estimated originally, the shipyard reviewed the position and agreed to finance the further construction of the vessels on its own. However, it was estimated that the financing charges likely to be incurred during 1954-55 on account of this arrangement were expected to be in the order of about Rs. 8 lakhs.

This situation was far from satisfactory particularly when compared with conditions prevailing in the shipbuilding yards of other countries, where it was very rare for dates of deliveries to be postponed. Moreover, the actual period of construction in the H.S.L. was longer than that in the advanced shipbuilding countries, where it is a practice to have a penalty clause in the contract for late deliveries. The Estimates Committee therefore recommended, "... The shipyard should develop its schedule of delivery dates with due care, and as far as possible, make the period of delivery as short as possible. This is essential if our yard is to carry a good reputation and attract further customers".*

The Estimates Committee was also not happy about the A.C.L.'s function of advising the H.S.L. on organisation and management. It stated in its report, "From the evidence of the Managing Director of the H.S.L., it appears to the Committee that even in the matter of organising the schedule of work in the yard, the technical advice given by A.C.L. experts was not at all satisfactory. It appears that the M.D. had asked the French expert, time and again, that the scheduling should be so organised and also arrangements made so that if any particular department or section lags behind, the fact came automatically to the notice of the expert and the M.D. such a system known as the "Red light system" would give a timely warning about the possibility of further delays."*

The Committee also observed that the H.S.L. should have undertaken the compilation of the job lists and collected the basic data in regard to the standard time which a particular job should take as also the material required for that job. It emphasised that there must be proper planning and marshalling of all raw materials, stores and other equipment required by the shipyard, and after having done with that a system should be devised whereby a systematic comparison of the results of actual performance with such estimates were ensured. This would also throw light on the past experience and locate profits and losses, on previous work, act as a guide for future transactions and would provide for the linking of the purchases of stores etc. with their actual utilisation on the

execution of various jobs undertaken by the shipyard. The Committee considered that wherever the technical experts were unable to tender satisfactory service in matters as stated above, Government should consider the question of alternative method of getting such advice at the cost of the A.C.L. as a breach of the terms of contract. In fact, it went a step further when it stated, "There is one aspect of the matter to which the Committee would draw the immediate attention of Government and that is the question of recovery of loss sustained by the yard on account of the failure of the A.C.L. to render satisfactory technical advice as stipulated in their contract, which has resulted in the shipyard failing to observe their business commitments. Government ought to assess the damages to be recovered from the firm on account of their failure, and this amount should be recovered from the firm early."* The Committee, further, felt that the system of working the yard by engaging experts to run the whole organisation was not very satisfactory and that the terms of the agreement especially in this regard required review. As regards the possible alternative arrangements, after the termination of the present agreement they quoted the views of one of the representatives of the H.S.L. with which they agreed.

"I do not think there will be any necessity to have technical experts. But we might have to get some sort of

technical help or consultation because always new problems do arise. But this kind of technical assistance that somebody should come and take charge of the whole shipyard and run it for us, that will not be necessary."* The Committee very strongly felt that the Government should plan sufficiently in advance about the question of alternative arrangements before the stipulated period of five years agreement with A.C.L. was due to expire so that there was no obstacle to the progress of work in the yard for want of careful planning.

Progress of Shipbuilding Under the Five Year Plans:

The First Five Year Plan:

It was stated in the draft outline of the First Plan, "The plan also visualises development in certain relatively new lines of transport, of which shipping is the most important. The programme for development of shipping is designed primarily to enable the coastal trade of the country to be reserved for Indian vessels and to ensure their fuller participation in overseas trade. With these in view, the plan makes provision for construction of additional berths in the Visag shipyard, which will not only make available about 100,000 G.R.T. for coastal shipping during this period, but also help to reduce the costs of construction".† As against this, target, the

+ The First Five Year Plan, p.33.
Hindustan Shipyards Ltd. built only eight ships of 39,924 G.R.T. (64000 D.W.T.) at a total cost of Rs. 677.01 lakhs. One more ship "Jalvishnu" of 4584 GRT (7000 DWT) was completed at a cost of Rs. 115.20 lakhs during the First Five Year Plan period but it was delivered to its owner in May 56. The ship "Jalaparikasha" of 5104 GRT (8000 DWT) though delivered on 3-4-51 was built during the preplan period.

During the year 1953, keels of four ships were laid, but only two ships could be launched in the year 1954. The Estimates Committee when brought it to the notice of the Ministry of Production, it stated that since the yard was taken over by the Government, there were many difficulties of transition. Because, the Scindia Shipyard, with its lack of financial resources could only just carry on from day to day with the special assistance given by the Government, through the placing of certain limited orders it could not do the normal long term planning. Further, the shipyard under new owners and management took up the task of constructing modern fast diesel ships on modern techniques in place of the older type steam vessels that used to be constructed and thus to overtake a few decades of development. Till it was taken over, the shipyard was building only one standard type of single steamship. An order for three such ships which had been placed earlier by the Government, on the shipyard was taken over by the Government company, when it took charge of the shipyard. These ships, which were in difficult stages of construction were completed and delivered. The Scindia shipyard when it was
taken over had no other orders for ships except that Government had also authorised the construction of two similar ships. Steel for these ships had not been ordered. Orders for the engines could only be placed so late in the Korean crisis that the engines were ultimately received very late. The keel of these ships were laid in July 1952. The ships could not be launched until August and November 1953, because firstly due to the change in Lloyd's Rules, the shipyard had to make new plans even though the ships were of the same specifications as the ships previously constructed. Secondly due to certain breakdowns in Tata's steel rolling mills, steel plates were not received in good time. These ships were delivered in July and August 1954 respectively. Part of delay in the construction of these ships was also due to the fact that engines which had been ordered as early as 1951, did not arrive in the shipyard until January and April 1954 respectively. The shipyard also received orders at this time for new Maierform ships. These ships were of complex modern design with diesel machinery. The classification plans, the machinery plans and the piping plans of these new vessels had been arranged abroad. The shipyard drawing Office, which had to prepare detailed working plans for these ships, had no previous experience of making such plans for a whole ship. This led to considerable delay which was accentuated further by the great difficulty in coordination between the suppliers of the classification plans, the machinery plans and the piping plans. Therefore, although by the end of 1953, keels had been laid for three ships of the
new type, only one of the ships could be launched in 1954, and as had already been stated, the amount of extra work involved in constructing the new type of ships could not be correctly estimated.

As stated previously, against the target of 1 lakh G.R.T. laid down in the First Plan, the H.S.L. could build, total 9 ships of 45000 G.R.T. Thus there was a shortfall of 55000 G.R.T in the plan target. The Ministry of Production also gave reasons for this state of affairs. It stated that the exact amount of work involved in the new types of ships had been under estimated. The new mainform type of vessels, the construction of which was undertaken by the shipyard, involved 50% more work than the old type of steamships built at the commencement of the plan. The desired, increased output required the addition of fully trained skilled labour which could be secured only slowly and was still going on.

The factor which contributed to the underestimation referred to above was stated to be that under the previous management, the shipyard had nothing in the way of a designing and drawing office, since the practice was for M/s. Scindias to build the same type of ships according to working plans obtained from the U.K.

Second Five Year Plan:

The Second Five Year Plan had fixed the tonnage of the ships to be constructed at the H.S.L., at 75 to 90 thousand G.R.T.

As against during the Second Plan period, 9 ships of
approximately 47000 G.R.T. were built by the H.S.L. One motor launch (Vidyut) for the Land Customs department, one tug (Adyar) for Madras Port Trust and one survey vessel (R.V.S. Haldia) for the Calcutta Port Commissioners with an aggregate tonnage of about 500 G.R.T. were also constructed. Besides, the H.S.L. constructed and delivered one steel Hopper barge, three steel pontoons and I.N.S. Dhruvak for the Indian navy. As against the performance of the H.S.L. during the First Plan, there was a definite improvement during the Second Plan. However, the actual production for the shipyard fell too short of the target laid down by the second plan.

During 1955-56, (the last year of the First Five Year Plan) the shipyard built the first two of the new series of modern diesel ships (known as Maier form type). A significant event occurred during that year, was the launching of the "State of Kutch" for the Eastern Shipping Corporation Ltd. This was the largest ship built in the shipyard so far. The Chairman of the H.S.L. made a general reference about it in his speech delivered before the Annual Meeting for the year 1955-56. He stated "An important feature of the ships built by the Hindustan Shipyard is their restricted draft, designed to meet the speedy requirements of the navigation in the Hooghly.... The draft of this ship "The State of Kutch" is 20 feet 1 inch with the consequence that although the deadweight of the ship is only 8100 tons, it is much larger than the standard "Fairplay" ship of 9500 tons deadweight. The "State of Kutch"
is 445 ft. long and 61 ft. broad and requires a net quantity of 2800 tons of steel as against 2550 tons of steel required for the "Fair Play" ship which is 425 feet long and 58 feet broad. This comparison clearly illustrates the fallacy involved in comparing costs, as some parties are inclined to do, on the basis of deadweight tonnage alone. Ships with restricted draft are bound to be costlier."

The performance of the French Technical Consultants (A.C.L.) were found to be satisfactory since the visit of the high level expert sent by them (from France) in the beginning of 1955. The schedule of deliveries of ships prepared by this expert were faithfully observed. The agreement with French firm which would have otherwise ended on 15-7-57 was extended for a yer. During this extended period, as against the previous rate of commission of 4\%, the commission payable was 2\% on so much of the turnover as was equal to the average of the turnover of the previous two years and 3\% on the excess over such average. Other terms and conditions of the agreement remained unchanged. In addition the A.C.L. agreed to make available upto 15-7-58, the services of French workmen for a total of 144 man-months wholly at their cost.

The expert deputed by A.C.L. made certain valuable suggestions for improving the working of the shipyard. They were:

"(i) The team of French technicians should be strengthened.

(ii) The strength of skilled workmen and supervisory technical staff should be augmented.

(iii) The Maintenance Department should be reorganised.

(iv) A new Central Tool store should be organised and tools supplied to workmen should be modernised and improved.

(v) A new Fitting out Department should be organised.

(vi) A Works Central Office and Time Estimating Department should be organised in due course.

(vii) Certain re-adjustments should be made in the development programme so as to include some of the second phased items in the first phase of the plan."

These suggestions were subsequently implemented by the management of the shipyard.

During the year 1956-57, the shipyard delivered to Scindia Steam Navigation Co. Ltd. the ship "State of Kutch". Besides, the steam tug "Adyar" built for the Madras Port was delivered to its owners. This Tug is modern in design and equipment and has certain special features in that she is of seagoing type and is useful also for salvage work.

During the year 1957-58 three ships "Andamans", "State of Orissa", "Jalavikram" were delivered to their owners. Tug "Adyar" referred to earlier was actually delivered during this year. Therefore, from the point of view of the number of ships delivered, the performance of the shipyard during the year could be regarded as the best attained so far. However, the

performance of the shipyard would have been still better but for certain unforeseen difficulties. "Owing to a major breakdown of the new 45 ton travelling crane erected between berths I and II, which could not be repaired and recommissioned for over three months, the production suffered substantially. The erection work was confined during this period practically to one ship .... Another contributory factor was the delay in receipt of steel in the early part of 1957-58. Further the production of the shipyard has had to be restricted on account of difficulties of foreign exchange. Consequently a certain number of workmen have had to remain idle in some department".

The agreement for technical assistance entered into with the French consultants, A.C.L. which was extended by a year was terminated in July 1958. Since then the technical direction of the shipyard was taken over by Indian personnel. The shipyard undertook the construction of a new series of ships of 9500 to 12000 D.W.T. and of 17 knots speed, comparable to some of the fastest and most modern cargo vessels. The designs of these ships had been purchased from M/s. Lubecher Flenderwerke of West Germany and an arrangement had been arrived at with them, by which they would make available the services of two or three expert technicians to the shipyard as and when required. These technicians would be from among those who had actually worked on the design and construction of these ships in the Lubecher shipyard and apart from the remuneration payable

to them, no other fee or commission was payable to M/s. Lubecher Melderwerke. Under that arrangement the German technicians would not be in executive charge of any department of the shipyard but would act only as advisers. In accordance with this arrangement, the services of their chief draughtsman, Mr. H.H. Thiessen was obtained.

During 1958-59, the ship "Jalaveera", the last of the series of 7000 tonner Maierform ships ordered by the S.S.M.Co. Ltd. was delivered. With the delivery of this ship the total production of the shipyard exceeded 100,000 G.R.T.

During this year efforts were directed by the management of the H.S.L. to collecting cost and production data on the basis of which a satisfactory system of controls could be evolved since the major difficulty so far had been the absence of reliable data which could be used for purposes of control. The data collected in the early stages of the construction work in the shipyard on the "Jalausha" type of steamships became obsolete, as it was based on a job list unsuited to prefabrication methods introduced in subsequent ships. Even the cost data collected when the French technicians were in charge on the basis of a revised, job list could not be used for purposes of control, since the units into which a ship was divided were large and therefore not quite similar as between ship and ship in many cases. In view of these circumstances, a beginning was made to establish on a small scale what might be described as "norms". A correct record of the time taken by the various departments concerned, operation, wise on suitable and typical units - panels - in hull
construction was being maintained so that this data could be used for controlling the labour estimates for a large number of similar panels on such comparable jobs. It was proposed to extend gradually this system of fixing norms to work in the outfit department as well. This was expected to enable exercise of control over production as well as costs of future ships and also to afford valuable data for working out estimates. With above ends in view, a new section was created in the Planning Department for the purpose of establishing norms in regard to production.

During the year 1959-60 four ships "Jagmitra", "Indian Industry", "I.N.S., Dhruvak" and "Jayalakshmi" with an aggregate tonnage of 14873 G.R.T. were delivered. The shipyard was able to deliver more ships during the year than in any previous year.

A new design and estimating Section constituted in March 1959 accomplished a preliminary design and estimate for a tanker of 13,800 D.W.T. It was also engaged in preparing a few trial designs for certain types of ships for which there was a likelihood of demand. During the year H.S.L. secured a sum of Rs.13.43 lakhs from the French consultants by way of compensation with regard to the defective construction of vessels, "Andamans", "Haldia" and "Vidyut", in the yard.

During the year 1960-61, two ships "State of Uttar Pradesh" "R.S.V.Haldia", and one steel Hopper Barge and three steel Pontoons were delivered. A separate inspection cell for ensuring the quality and specifications of a large number of items of stores, machinery and equipment used in the construction
of a ship was instituted. It was also expected to inspect in
time the items procured indigenously and thereby obviate
rejections and consequential delays.

Problems of the Shipyard :

Shipbuilding Costs:

The question of comparatively high ship building cost
of the H.S.L. was studied by the Estimates Committee which
reported in June 1955. It stated in its 14th Report, "The
Committee have examined the comparative cost of building ships
in the Vizag shipyard and in the U.K. They find that where the
estimated cost of building a ship is about Rs.74,16,840 in our
shipyard, the corresponding in the U.K. for a ship of the same
tonnage works out to be about Rs.53,85,404. In fact the two
ships delivered in 1954 from the shipyard cost about Rs.81
lakhs and 78 lakhs (approximately) respectively".*

However, the comparative shipbuilding costs during
1955-56 in other countries taking U.K. cost as basis were
as follows:-

(Approx.)

<table>
<thead>
<tr>
<th>Country</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.K.</td>
<td>100</td>
</tr>
<tr>
<td>West Germany</td>
<td>95</td>
</tr>
<tr>
<td>Japan</td>
<td>110</td>
</tr>
<tr>
<td>U.S.A.</td>
<td>200</td>
</tr>
<tr>
<td>Australia</td>
<td>150</td>
</tr>
<tr>
<td>France</td>
<td>130</td>
</tr>
<tr>
<td>Italy</td>
<td>130</td>
</tr>
<tr>
<td>India</td>
<td>131</td>
</tr>
</tbody>
</table>

(Source: Annual Report of H.S.L. for the year 1955-56)
It is obvious from the above table that except for U.K., West Germany and Japan, the shipbuilding cost in India compares quite favourable with that in the U.S.A., Australia, France and Italy. However, the shipbuilding being an international industry, the cost of construction has to be competitive and that underlines the need for finding out and removing the reasons for high cost in our shipyard. The reasons given by the management of the H.S.L. in 1955 were as follows:

(i) Cost of Steel: The price of steel available for shipbuilding in the U.K. is less by about 8. 175 per ton than the steel available for our shipyard. Moreover, the sizes of plates and sections which our shipyard receives from the Tatas are such that a higher percentage of the material is wasted as scrap in our country, the figures being about 20% as against 10% in U.K.

(ii) Extra Cost of Machinery, Stores and Equipment: In most of the shipyards in the U.K., the manufacturers of ship engines are themselves responsible for their installation in the ship, whereas our shipyard has to incur an extra charge of about 15% to 18% on the cost of the material, by way of packing, forwarding and handling charges, freight and insurance of the engines which have to be imported.

(iii) Scale of Operation: As the number of ships built in the yard is comparatively small, our overhead charges per ship are very heavy ... However, when the yard produces four ships a year, at least, the overheads would compare well with those of other shipyards. "

*Based on 14th Report of Estimates Committee, p.28.
The Estimates Committee felt that the reasons enumerated as above were not exhaustive of the causes underlying the high cost of building in the yard. They considered that there was plenty of scope for effecting economy in the quantity of material used by a careful planning of schedules and by a fuller utilisation of the capacity of the machines. Increased labour efficiency, strict supervision and careful management were other methods by which a reduction in costs could be ensured.

It is essential to the efficient working of the shipyard that steel plates and other steel material required for the construction of ships are received in the sequence in which they are required. The H.S.L. however encountered serious difficulties in this regard. The Government, therefore, permitted it to import steel through the steel controller, but even here the time required was 6 to 8 months. Since such delay in the supply of steel affected the production programme schedules, the Estimates Committee desired that the Government should take the most urgent steps, possible in the matter. It also recommended building up of suitable stocks which would help to tide over the delays that occurred between demand and supply.

The timber requirements of the shipyard were met from the imports from Burma and the U.S.A. (pine) and from the forests in South Kanara, Coorg and Andamans. As regards indigenous supply, the problem of transportation from the forests was a serious one. The Estimates Committee however felt that the
shipyard ought not to depend on foreign imports for their timber requirements. They understood that it would be possible to obtain teak from Madhya Pradesh and Travencore-Cochin which would replace the Burma Teak. As for Oregon pine, it was felt that the chirwood of Indian forests would be a satisfactory substitute, if the problems of transportation from the source and of working the forests could be overcome.

The problem of high shipbuilding costs again came in for reference in the Directors' Report for the year 1959-60 of H.S.L. "The costs of production in the shipyard are higher than in the United Kingdom, Germany, Japan and the Scandanavian countries, are almost on a par with the costs obtaining in Italy and France and are much lower than those in the United States of America and Australia. The principal reasons for our costs being high are:

(i) low productivity and inadequacy of trained personnel,
(ii) importation of machinery and equipment which form the bulk of the materials used,
(iii) the need for holding large stocks of steel in standard sizes and
(iv) the high incidence of overheads".*

It was, however, claimed in the Directors' Report for 1959-60, that the rate of man-hours per ton of steel weight processed in the hull shop, pre-fabrication and erection

departments had registered a steady decline as shown by the following table:

<table>
<thead>
<tr>
<th>Year</th>
<th>Man-hours per ton of steel processed</th>
<th>Man-hrs. used per unit of material other than steel worth Rs. 100/- processed.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hull-shop</td>
<td>Pre-Fab-Dept.</td>
<td>Erection Dept.</td>
</tr>
<tr>
<td>1957-58</td>
<td>86.94</td>
<td>169.50</td>
</tr>
<tr>
<td>1958-59</td>
<td>63.99</td>
<td>130.50</td>
</tr>
<tr>
<td>1959-60</td>
<td>55.68</td>
<td>94.54</td>
</tr>
</tbody>
</table>

(Source: Directors' Report H.S.L. 1959-60, p.20)

Similarly, the rate of maintenance man-hours for processing every hundred rupees worth of materials other than steel handled in the outfits departments had also gone down.

Another criterion to measure the production efficiency of the shipyard is the labour material ratio. The table below shows the amount spent on materials, labour and overheads during 1958-59, 1959-60, and 1960-61.

<table>
<thead>
<tr>
<th>Year</th>
<th>Production</th>
<th>Materials</th>
<th>Labour</th>
<th>Overheads</th>
<th>Rs. in lakhs: Materials:Labour ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>1958-59</td>
<td>345.36</td>
<td>184.04</td>
<td>33.05</td>
<td>90.03</td>
<td>1:5.60</td>
</tr>
<tr>
<td>1959-60</td>
<td>401.48</td>
<td>249.19</td>
<td>35.16</td>
<td>90.57</td>
<td>1:7.09</td>
</tr>
<tr>
<td>1960-61</td>
<td>465.80</td>
<td>316.69</td>
<td>40.09</td>
<td>88.64</td>
<td>1:7.90</td>
</tr>
</tbody>
</table>

(Compiled from Directors' Report, H.S.L. for the respective years)

Although the overheads seem to be on the high side, as shown above, the increase in production in the shipyard during these three years was achieved not only without any increase
in the overheads but an actual decline. Similarly there was
an improvement in the labour/material ratio.

The table below (next page) shows the position of overheads
in the shipyard vis-a-vis production and productive labour:

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Amount in lakhs of Rs.</th>
<th>Production of Total labour</th>
<th>% of 4 to 2</th>
<th>% of 4 to 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1956-57</td>
<td>298.04</td>
<td>29.75</td>
<td>74.85</td>
<td>25.11</td>
</tr>
<tr>
<td>1957-58</td>
<td>343.31</td>
<td>31.58</td>
<td>86.20</td>
<td>25.11</td>
</tr>
<tr>
<td>1958-59</td>
<td>345.36</td>
<td>30.63</td>
<td>93.34</td>
<td>27.03</td>
</tr>
<tr>
<td>1959-60</td>
<td>401.48</td>
<td>35.01</td>
<td>93.23</td>
<td>23.22</td>
</tr>
<tr>
<td>1960-61</td>
<td>465.80</td>
<td>40.09</td>
<td>88.64</td>
<td>17 (Approx.)</td>
</tr>
</tbody>
</table>

(compiled from Directors' Report H.S.I. for respective years)

From the above table it would appear that the percentage
of overheads to total cost of production moved up from 25.11
in 1957-58 to 27.03 in 1958-59 and came down to 23.22 in 1959-60.
However, the fall was more spectacular in the year 1960-61 when
it came down to nearly 17.00. The usual percentage of overheads
to the cost of construction of a cargo vessel in the U.K.
shipyard has been stated to be about 20.

Import of Materials and Steel:

The Estimates committee in its 116th report stated,
that the foreign exchange component of a ship built in the
Hindustan Shipyard came to about 45% of the total cost. The
Chairman of Shipyard stated in evidence before the committee
that their main problem had been the import of all the materials
and what was called shipbuilding in India was still mainly the assembling of a ship because in value nearly 80% of the materials (including steel) had to be imported. The following table (on next page) shows comparative yearly purchase of indigenous and imported materials from the year 1952-53 to 1960-61.

The high cost of steel and the extra expenditure involved in holding larger stocks than is usual for the imported item was stated to be one of the principal reasons for high manufacturing costs in the Hindustan Shipyard. The cost of shipbuilding plates in U.K. in July 1950 was £.611 per ton as against the price of £.800 per ton in India. Moreover, while plates and sections are available to the U.K. yards in exact sizes, this is not so in India with the result that there is a greater amount of wastage. It is roughly estimated that the production of scrap accumulation in U.K. yards is 15% for welded ships and 12% for rivetted construction while it works out to be about 18% in the Hindustan Shipyard for ships which are about 30% welded and 20% rivetted. However, the Estimates Committee, felt that with the availability of shipbuilding steel in exact sizes and quantities required by the yard when the Rourkela steel plant starts producing steel required for shipbuilding, appreciable reduction would be made in the costs of construction of a ship.

As regards the additional cost incurred on account of materials imported from abroad, the Directors of the Shipyard have stated in their 1959-60 report that an appreciable
<table>
<thead>
<tr>
<th>Year</th>
<th>Steel Indian</th>
<th>Steel Foreign</th>
<th>Machinery Indian</th>
<th>Machinery Foreign</th>
<th>Stores Indian</th>
<th>Stores Foreign</th>
<th>Timber Indian</th>
<th>Timber Foreign</th>
</tr>
</thead>
<tbody>
<tr>
<td>1952-53</td>
<td>31.6</td>
<td>nil</td>
<td>nil</td>
<td>21.2</td>
<td>15.3</td>
<td>8.03</td>
<td>6.05</td>
<td>1.21</td>
</tr>
<tr>
<td>1953-54</td>
<td>23.7</td>
<td>38.4</td>
<td>0.25</td>
<td>13.0</td>
<td>11.4</td>
<td>9.26</td>
<td>1.53</td>
<td>3.97</td>
</tr>
<tr>
<td>1954-55</td>
<td>11.6</td>
<td>36.2</td>
<td>0.78</td>
<td>89.8</td>
<td>13.9</td>
<td>17.81</td>
<td>1.86</td>
<td>1.21</td>
</tr>
<tr>
<td>1955-56</td>
<td>3.5</td>
<td>26.3</td>
<td>0.19</td>
<td>118.00</td>
<td>17.5</td>
<td>10.9</td>
<td>3.44</td>
<td>1.27</td>
</tr>
<tr>
<td>1956-57</td>
<td>49.2</td>
<td>13.0</td>
<td>0.03</td>
<td>103.0</td>
<td>29.6</td>
<td>13.1</td>
<td>5.75</td>
<td>2.53</td>
</tr>
<tr>
<td>1957-58</td>
<td>11.0</td>
<td>230.0</td>
<td>1.88</td>
<td>115.0</td>
<td>31.8</td>
<td>3.99</td>
<td>7.88</td>
<td>5.44</td>
</tr>
<tr>
<td>1958-59</td>
<td>0.67</td>
<td>4.6</td>
<td>nil</td>
<td>198.5</td>
<td>42.79</td>
<td>16.48</td>
<td>10.44</td>
<td>nil</td>
</tr>
<tr>
<td>1959-60</td>
<td>48.03</td>
<td>24.61</td>
<td>1.3</td>
<td>237.65</td>
<td>33.63</td>
<td>42.82</td>
<td>16.36</td>
<td>nil</td>
</tr>
<tr>
<td>1960-61</td>
<td>26.84</td>
<td>147.98</td>
<td>0.27</td>
<td>57.10</td>
<td>49.02</td>
<td>27.39</td>
<td>1.75</td>
<td>nil</td>
</tr>
</tbody>
</table>

Source: Director's Report H.S.L. for respective years.
reduction in this could be expected, when major items of machinery and equipment are manufactured economically within the country. As far back as 1955, the Estimates Committee in their 14th Report (First Lok Sabha) recommended the setting up of subsidiary industries for the manufacture of standardised parts of fittings, equipment etc. and also called for immediate attention to be paid to the manufacture of engines. However, the Chairman of the Shipyard informed the Estimates Committee (Second Lok Sabha) that it was not correct to think that indigenous manufacture of machinery would reduce the costs immediately. He also said that while in the beginning the costs might be increased by trying to produce everything within the country, the whole idea was to try and get as many things as possible in the country itself, it was thus a question of balancing. The Committee were further told in evidence that Government had appointed a ship Ancillary Industries Committee in 1957, to recommend among other things on the steps to be taken to encourage the indigenous production of materials and equipment required by the shipbuilding industries. The First Report of this committee while dealing with the question of setting up and promotion of ancillary industries designed to manufacture indigenously all materials and equipments required for shipbuilding and ship repairs observed as follows:

"..... as India is to progress towards and attain a state of self-sufficiency, steps must be devised to overcome such difficulties and to provide a phased programme of development of indigenous ancillary industries. Unless such industries are set up and enabled to grow, both shipbuilding and ship repairs
Designing and Estimating:

At present even designs and basic plans have to be imported by the shipyard on payment from foreign countries. The Chairman of the shipyard informed the Estimates Committee that the shipyard was making every effort to develop its own designing and draughtsmanship though the stage had not yet reached where its own technicians could design a ship. The Managing Director admitted that in respect of the designing of ships, we were lacking in talent, experience, and data. He explained to the Committee that the know-how of designs was not obtained on the basis of plain theory and a designer could not be trained just sitting in a classroom. The designer had to get experience over years and must have enough data in respect of the work already done, before he could design a new vessel. Therefore, it is necessary to have concentrated training and collection of data of the ships built in the country itself. The Estimates Committee considered that the establishment of a proper designing and estimating department should have been taken up in right earnest much earlier and urged that there should be no further delay in developing it so that the shipyard might grow gradually and at least ceased to depend on foreign designs. As a necessary adjunct they felt that the establishment of a research department would be very helpful.

Standardisation of Ships:

Before it was taken over by the Government, the policy of the Scindia shipyard was to concentrate on the production of one type of vessel only, for which the designs as well as working plans had been obtained from abroad. When the shipyard was finally taken over by the Government it was decided to adopt the Maier form type of vessels which required the preparation of separate designs and working plans for each ship. However, as the necessary number of trained staff was not available for this specialised job, serious delays occurred in the work of the drawing office and the fabrication branches.

The Estimates Committee in its 14th report stated, "Standardisation of the designs have this additional advantage in that it would also lead to considerable savings in expenditure on machine operation etc. and speedier training of skilled workers. Moreover, standardisation, would enable the setting up subsidiary industries for the manufacture of replacement parts more easily, since these latter would also be standardised and could be stocked in larger quantities. These advantageous aspects of manufacture of standardised ships were referred to by the Chairman of the Board of Directors of the firm in his annual speech as follows:-

In this connection, I might perhaps, be allowed to make a suggestion for the consideration of all concerned. The initial cost of ships as well as the price payable by the shipowners could be considerably reduced by standardisation. Surely it should not be necessary to have more than two or
three types of ships for the present coastal trade in India. Similarly, ships for different runs could be standardised after full investigation of the needs of the trades on that run. This would not only mean cheaper ships but quicker deliveries and would save money both for the shipowners and the public exchequer".

The Estimates Committee, therefore, suggested that in view of the fact that the deliveries were slow and cost of building ships was high, a conference should be arranged between the representatives of Government, the shipowners and the shipbuilding industry in general to examine how far it would be advantageous to adopt a policy of manufacturing only standard vessels at least for some years to come.

Pursuant to the wishes of the Estimates Committee the question of standardisation of ships was discussed at a Conference held on 31st January 1956, at which the principal shipowners who were present accepted in principle the proposal to standardise the ships to be constructed at the shipyard. Thereafter a committee, presided over by the Director General of shipping, consisting of representatives of shipowners, shipyards, and the Ministries concerned was appointed to examine in detail and report on the types of ships to be standardised and built at the shipyard. This Committee recommended that three types of ships should be standardised. These were:

* Estimate Committee's 14th Report. p.30.*
(1) For the overseas trade, a 9500 tonner open shelter decker (with scantlings for 9500 tonner closed shelter decker) with a speed of about 16-17 knots.

(2) For the coastal trade, a 8000 tonner open shelter decker (with scantlings for 9500 tonner closed shelter decker) with a speed of about 12 knots.

(3) A 5000 tonner open shelter decker (with scantlings for 6000 tonner closed shelter decker) with a speed of about 12 knots also for the coastal trade.

The Government accepted the recommendations and the details of the designs, specifications and machinery required for the above types of ships were later on worked out by the H.S.L. in consultation with the Director General of Shipping.

The Estimates Committee, in its 65th report recommended one more design of smaller ships of 2500 to 4000 G.R.T. which should also be evolved for coastal shipping so that they can serve the traffic generated at numerous small ports on the long coastline of our country. It suggested that the Ministry concerned should provide loan assistance to shipping companies desirous of going in for such small ships. It also wanted the Government to examine the feasibility of limiting coastal trade exclusively for these small vessels.

Pursuant to the recommendations of the aforementioned committee the H.S.L. during 1955-56 with the co-operation of shipowners was able to standardise two types of ships viz. (1) 5000/6000 tonners for M/s. New Dghera, Great Eastern and Indian Steamship Co. and (2) 9500 tonner for Government shipping
corporation; and had the opportunity to build a total of 12 ships of these designs. This greatly facilitated planning and purchasing of materials and equipment and obviated the difficulties arising from the construction of ships of different designs. These orders kept the yard busy for the whole of the Second Plan period.

Pricing and Subsidy:

The H.S.L. is selling ships to shipowners at U.K. parity prices, under which the shipyard receives from the buyer the price he would have paid for a similar ship constructed in the U.K. The difference between the cost of construction by the yard and the price paid by the buyers is reimbursed to the yard by Government as a subsidy. This procedure for fixing the selling price is called the U.K. parity price formula. Its actual working is described below:

Prices of the vessels are fixed by negotiation between the shipyard and the owners concerned. In these negotiations, the cost of construction of a similar type of ship in U.K. shipyard is constantly kept in view. This is done by obtaining an estimate from a firm of consultants in U.K. of the price likely to be quoted by shipyards of average capacity and reputation in U.K. for a similar ship. Since it is not practicable proposition to ascertain all incontrovertible figure of U.K. parity price, the price fixed as a result of negotiations varies not infrequently from the estimates obtained by the Shipyard. In any case, the agreement about the price of a ship can be concluded by the
owners only when the price quoted by the yard is also acceptable by them. Then again the owners even contend that the U.K. parity price may also not be the representative ruling world price of a vessel and in a very competitive international market of shipping, it may not be fair to expect them to subsidise the indigenous shipbuilding. Therefore, the arrangement concerning subsidy and pricing is in practice worked with a certain amount of flexibility. The subsidy that is eventually paid by Government, represents the difference between the price fixed by negotiations between the shipyard and the owner concerned and the actual cost incurred by the shipyard in the normal course.

A number of foreign Governments, give subsidies to shipbuilding which usually range between 20 and 30 percent of cost. However, no subsidy is given in U.K. or in Germany, but it is understood that in U.K. the steel is supplied to the shipbuilders at a specially reduced price. In France subsidy is calculated by a very complicated formula but Governments' underlying aim is to give to the shipbuilders the difference in their costs and the international sale value of the ship in such a way as to secure that the shipbuilder get between 3 to 4 percent profit on their turnover.

The following table (next page) indicates the total amount of subsidy received by the Hindustan Shipyard Ltd. so far and also the breakup figures in respect of the last six years:—
<table>
<thead>
<tr>
<th>Year</th>
<th>Rupees in Lakhs</th>
<th>Cumulative Subsidy</th>
<th>% of subsidy to completed works</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Completed works</td>
<td>Subsidy</td>
<td></td>
</tr>
<tr>
<td>1955-56</td>
<td>234</td>
<td>64</td>
<td>136</td>
</tr>
<tr>
<td>1956-57</td>
<td>253</td>
<td>62</td>
<td>193</td>
</tr>
<tr>
<td>1957-58</td>
<td>426</td>
<td>97</td>
<td>295</td>
</tr>
<tr>
<td>1958-59</td>
<td>136</td>
<td>45</td>
<td>340</td>
</tr>
<tr>
<td>1959-60</td>
<td>435</td>
<td>115</td>
<td>455</td>
</tr>
<tr>
<td>1960-61</td>
<td>235</td>
<td>54</td>
<td>509</td>
</tr>
</tbody>
</table>

Source: Table Constructed from the Annual Reports of the H.S.L.

The last column in the above table gives the percentage of subsidy to completed works. The average percentage of subsidy of the last six years comes to about 26. The shipyard has received so far over Rs. 5 crores of subsidy from the Government.

The Estimates Committee (First Lok Sabha) which reported in 1954-55, desired that the whole question of payment of subsidies should be reexamined. It stated, "It is first of all to be seen whether the cost of production could not be reduced by introduction of cost control schemes and improved labour efficiency and out-turn. If, in spite of this, it is found that a subsidy is still required to be paid, it should be done on a more rational system than that adopted at present viz. that of basing at merely on the U.K. costs of production".*

The procedure of working the U.K. parity price was found to be far from simple. It involved reconciliation of

* Estimate Committee's Report, 14th. p. 29.
prices obtained indigenously by the buyer and the supplier from
different U.K. firms for the supply of the same type of ship.
Moreover, the lower price at which ships were available from
countries other than U.K. had also to be taken into account.
Shipowners have been pressing for the adoption of a "World
Parity Price" i.e. a price equivalent to the cheapest cost of
building a similar ship anywhere in the world. In practice it
has been found extremely difficult to determine with any degree
of accuracy even the U.K. parity price and therefore it would be
impossible to ascertain the "World parity price" in a satisfac-
tory manner unless foreign shipyards know that there is a
reasonable chance of securing an order they will not bother to
give a realistic estimate of cost. The estimates given by them
would further be subjected to "Extras" and escalator clauses.
In other words, the actual cost can be ascertained only after
the ship has been completed. An important feature of the ships
built by the shipyard is their restricted draft designed to
meet the special requirements of navigation in the Hooghly
and ships with restricted draft are bound to be costlier.

There are many other difficulties in comparing the cost of
one ship with that of another. In fact, no two ships are really
alike. Even the present method under which it becomes necessary
to ascertain the cost of building a similar ship in the U.K. has
not been found satisfactory. There are wide divergences between
the estimates of cost received by the shipyard and the estimates
obtained by the shipowners. One of the most unfortunate results
of the present practice is the delay in fixing the price. Moreover, even after the price has been settled, by negotiation, questions often arise whether certain items of supply or work should be regarded as normally included in the U.K. cost or whether they should be charged for as extras. In order to obviate these difficulties, a proposal has been submitted to the Government, that the price of the ships built in the shipyard should be fixed on the basis either of percentage of the total cost of the ship or of varying percentages of the different elements of cost. This has the advantage of avoiding uncertainty and of relating the amount payable by shipowners to the actual costs, not on hypothetical estimates. It gives shipowners an opportunity to keep their requirements to the minimum and thus bring down the price.

However, no satisfactory solution was provided by the Government. The Ministry of Transport considered it advisable to study the actual cost data of some of the ships in relation to the prices fixed before the existing procedure could be revised.

During 1958-59, the question of securing further orders for the construction of ships in the shipyard had created serious difficulties. There was a slump in the world shipping and shipbuilding market with the result that foreign shipyards were going out of their way to quote lower prices, apart from attractive terms of delivery, deferred payment etc. Even in Japan, which was offering possibly the lowest price, there was
a move to further cut down the prices in order to secure orders from the Indian owners who complained with justification that they were in a position to have ships built at lower prices from abroad. The Chairman of the H.S.L. therefore appealed to the Government to consider the problem at the highest level so as to decide how best the shipowners could be induced to place a sufficient number of orders on the shipyard without being put to serious disadvantage on this account.

However, the question of evolving a satisfactory formula of pricing is even now not solved. In the meantime the H.S.L. in deference to the demand of the shipowners, accepted for the first time during 1960-61 the principle of penalty for delays in delivery of ships under new contracts.

When this vexed question again came in for the examination of the Estimates Committee it made two valuable suggestions for the satisfactory solution of the problem: viz., (i) that the selling price should give some incentive to the shipyard to reduce its costs of construction, and (ii) the buyer should not be asked to pay appreciably more than that he would have paid for a similar ship constructed elsewhere.

The Committee felt that in view of the difficult foreign exchange position of the country a buyer could not normally expect to get readily sufficient foreign exchange to buy a ship in the world market even at the lowest available price. On the other hand, the shipyard should not continue to rely fully upon Government subsidy to make up the difference between
its actual cost of production and the ruling world prices.
It further stated, "ship building is subsidised in all countries
except in the U.K. which has a century old tradition in ship-
construction. It may not be possible for the H.S.L. to function
efficiently without a subsidy in one form or other for some time
to come. The Committee have elsewhere recommended the necessity
of standardisation to a large extent. Based on such standardised
cost, the Government may periodically determine the subsidy to
be paid for each unit of construction related either to the
tonnage or the cost. With this margin, the shipyard should be
able to quote competitive prices, if not the lowest world
prices to the buyer. To the extent the actual cost of construc-
tion of a ship could be brought down, the profits of the ship-
yard would go up. Failure to construct a ship within the permi-
ssible subsidy would indicate lack of efficiency on their part.
The Committee suggest that Government may examine the possibi-
licity of revising the present basis of subsidy on the lines
indicated above".*

Orders for Shipbuilding:

One of the major difficulties faced by the shipyard from
time to time is the lack of sufficient orders for shipbuilding.
The Directors of H.S.L. lamented on this problem when they stated
in their report for 1959-60: "The prospects for future orders
for the shipyard have not been bright and are causing concern
to your Directors. Although the problem has been under continuous

review since the end of 1959, it has unfortunately not been possible for the shipyard to obtain any new firm order as yet. Consequently, with hardly five months to go for laying down the keel of a vessel, on the berth to fall vacant in April 1961, the shipyard is unable to plan for the building of the next ship". However, a few months later, on the 9th January 1961, the Chairman of the H.S.L. stated in his speech before the Annual General Meeting "I am glad to report that an order for construction of one vessel has just been placed with the shipyard. If this order had materialised some months ago, the shipyard could have avoided a hiatus in planning which has now become, unavoidable ..... ".

While giving evidence before the Estimates Committee (Second Lok Sabha) he stated that in spite of all efforts the position continued to be unsatisfactory. The Managing Director stated that the delay in obtaining orders had seriously affected the yard as planning for construction had to be taken up a year before laying the keel. It was also accepted by the Secretary of the Ministry of Transport the necessity of providing the shipyard with regular and sufficient orders. He stated that it was difficult to induce the shipowners to place orders.

The Estimates Committee viewed the situation with great concern. It stated "unless the yard gets an adequate number of

orders to utilise the available capacity fully and such orders are placed in time for production to be planned properly, the shipyard cannot obviously run efficiently and economically. Two of the shipping Corporations are owned by the Government, private shipowners cannot also obtain their requirements from abroad without the approval of Government. The Committee do not see why Government should not be able to ensure that the Hindustan Shipyard is kept supplied with sufficient orders. They trust that in future, Government will take effective steps to this end, if necessary, by restricting facilities for purchase of ships from abroad."

**Development Programme**: 

Soon after the shipyard was taken over from the Scindias in 1952, a project report for its development was prepared with the assistance of the French consultants and a phased programme of development was drawn up. The first two phases of this programme were as follows:

**First Phase**: The important units included in the first phase were the construction of two new berths, plumbing and foundry stores, a new stores building, a new building to house the drawing office. Timber stores, extension of blacksmith shops, renewal and augmentation of machines in the various shops, provision of heavy lift travelling cranes, on the berths, jetty and the shores, and most important of all, a prefabrication

* Estimate Committee's 116th Report, p.4.*
shop with a 45 ton overhead travelling crane and two auxiliary bays with open gantries.

**Second Phase:** The Second phase included the extension of the fitting out wharf up to about 1300 feet and provision of housing and welfare amenities for employees.

After the execution of the entire development programme, production of the shipyard which was 2 to 3 ships per year, was expected to reach the level of 4 to 6 ships (cargo) of modern design, per year.

The first phase of the development programme costing about Rs.2/- crores was completed and the second phase estimated to cost Rs.80 lakhs has also been executed except for the extension of jetty.

The first phase of the programme was considerably delayed because of the want of adequate supply of steel and cement. As for the second phase, the principal difficulty was the want of sanction of Government, on account of foreign exchange difficulties. The element of foreign exchange involved was, however, stated to be small. On enquiry, the Ministry of Transport informed the Estimates Committee (Second Lok Sabha) that the foreign exchange component of expenditure for the extension of jetty was Rs.10 lakhs in 1957. This was revised to Rs.7 lakhs in 1959 and was sanctioned by Government. The Estimates Committee regretted to note that the completion of the first phase of the development programme was badly delayed for want of cement and steel. As for the second phase, the committee felt that it
would have been useful if foreign exchange required for the second phase could have been found especially as it was stated to be small.

**Dry Dock Project:**

A project for the construction of a graving (dry) dock at a total expenditure of ₹2.15 crores was sanctioned by the Government for the Vizag shipyard in March 1955. During 1955-56, the soil investigations connected with the project was completed and the preliminary project report was also received from M/s. Rendel Palmer and Tritton who were appointed as consulting engineers for this project. The proposed dry dock was expected to be 620 feet long from inside of sill to head, 90 feet wide clear at entrance, and 24 ft. deep below port datum. During 1956-57, the consulting engineers completed the preparation of the detailed plans, specifications, bill of quantities and other tender documents.

However, the project was postponed on account of the foreign exchange difficulties since it was felt that without the necessary foreign exchange, the rupee expenditure would not be fruitful. The Chairman of H.S.L. again referred to it when he stated, "In the absence of a large sized dry dock at Vizag at present, the ships built in the yard are being sent to Calcutta for dry docking before they are delivered. Apart from the additional expenditure involved, this leads to delay and inconvenience both to the shipyard as well as to the owners. Since the provision of a dry dock will meet a long felt want as
well as promote the development of shiprepair facilities at Vizag, the project should be revived and executed as soon as possible."

The ship repairs committee which submitted its report in 1959, also recommended that the dry dock scheme should be taken up for implementation at an early date.

However, the project could not be revived by the Government, during the Second Five Year Plan. The Directors, of the H.S.L. appealed to the Government that it should be sanctioned and included in the Third Five Year Plan since the foreign exchange element was only of the order of ₹.40 lakhs out of the total expenditure of ₹.2.15 crores.

Since the estimates of cost on the basis of which the dry-dock project was sanctioned became a little out of date, a revised estimate of cost which came to a total sum of ₹.2.80 crores as against the previous estimate of ₹.2.15 crores was obtained by the H.S.L. during 1959-60 from the consultants. This estimate was further scrutinised with a view to bringing down the foreign exchange content. Consequently the project was estimated to cost about ₹.269 lakhs, in the year 1960-61, of which ₹.73 lakhs would have to be in foreign exchange. The Directors of the H.S.L. felt that the project should be included and provided for in the Third Plan, particularly as further postponement of the project would increase not only the total cost but also the expenditure in foreign exchange. If this was not possible, the Chairman of H.S.L. suggested that alternatively a provision of a floating dock should be made.
The Estimates Committee in its 116th report stated in this connection, "The Committee were informed by the Chairman of the Hindustan Shipyard that the question of sanctioning a dry dock has been under consideration of Government for the last fourteen years. According to him, there could be no shipyard without a dry dock and provision of a fifth berth and dry dock in the Hindustan Shipyard should have a higher priority than putting up another shipyard. The Committee are not aware of the precise reasons which have held up this project so long. They recommend that Government pay special attention to the early construction of the dry dock so that the yard can function efficiently".*

Manufacture of Marine Diesel Engine:

One of the most important subsidiary industries to which immediate attention is required to be paid is that of manufacture of engines. In this connection the attention of the Estimates Committee was drawn to the problem of the extent to which preference should be given to the use of diesel engines. The question of fuel is an important factor in this consideration, as the introduction of these engines will involve import of oil necessary for their operation. On the other hand, the adoption of diesel engines could facilitate the speedy mechanisation of the country craft and give a fillip to the building of small vessels for coastal cargo traffic. The Committee felt that the whole question should be considered thoroughly in consultation with the shipowners and defence ( Naval) authorities.

* Estimate Committee's Report No.116, p.5.
The ministry of Transport during 1956-57 informed the Estimates Committee that they have consulted the shipowners about establishing capacity for the manufacture of diesel engine in India and were in favour of doing so. When the question of standardisation arose and a ship for coastal trade was decided to be standardised, the shipowners indicated a preference for steam engines for coastal vessels. The matter was considered further and it was decided to go ahead with the establishment of a factory for manufacturing diesel marine engines. It was considered that sufficient off-take would be made from such a factory since the expansion of the Indian fleet was, mainly, to be in the number of ships for overseas trade.

In view of the desirability of achieving self-sufficiency in this respect, Government decided in principle to establish a factory for manufacturing propelling machinery for ships in the public sector. Subsequently the Government, set up an interministerial committee for processing the project and with a view to inviting detailed proposals for a licence as well as technical assistance from four or five firms of world repute in this field.

The Second Shipyard:

It was decided by the Government towards the end of the First Five Year Plan, that a second shipyard should be established in the country and that a beginning in this direction should be made during the Second Five Year Plan. During the course of their attempts to secure foreign technical collabora-
boilation in connection with the establishment of a second shipyard, the Government received an offer of assistance from the U.K. Government by way of providing a small Expert Mission to prepare a project report, under the Technical Cooperation of the Colombo Plan.

An advance party of the Mission consisting of three members arrived in India to make a preliminary survey of the possible sites, establish contacts and collect data for study by the full-fledged Mission. This was followed by the visit of the main Mission, consisting of five members under the leadership of Mr. James Lenaghan from 4th November 1956 to 23rd November 1957. Between them, the advance party and the main Mission visited the following sites:

1. Diamond Harbour and Geonkhali in West Bengal
2. Paradip in Orissa
3. Tuticorin in Madras
4. Cochin in Kerala
5. Mangalore, Karwar and Bhatkal in Mysore.
6. Trombay and Khalda in Maharashtra and Gujarat.

The Mission was to advise the Government on the layout and site for a new shipyard, the equipment which would be required for the purpose, besides estimating the capital expenditure involved. In the meantime, the Government constituted an Inter-Ministerial Committee on the Second Shipyard for:

(i) assessing the requirements of ships to be built in India: -
(a) five years from now and
(b) ten years and longer periods from now and
(ii) deciding the specific types of ships and total output
for which the second shipyard should be planned.

This Committee submitted their report on 27-5-57 and
recommended that the second shipyard should be so planned that
it has a capacity of 60,000 G.R.T. capable of being increased
in future to 80,000 G.R.T. a year. The new shipyard should be
equipped to build large merchant ships of 9000-12000 D.W.T.,
tankers and naval ships. The berths in the new shipyard should
not be less than 550 ft. in length. One or two berths of 600
to 625 ft. length were desirable and at least one berth should
be capable of increase in length up to 750 ft. and breadth to
130 ft. for the construction of large merchant ships, tankers
etc. These recommendations were generally accepted by the
Government, and were passed on to the U.K. Mission for taking
into account while making their recommendations.

Since the major difficulty in the establishment of the
second shipyard was the lack of adequate trained technical
personnel, it was decided that the H.S.L. should undertake a
training scheme, with a view to providing a nucleus of trained
personnel. A scheme was accordingly drawn up, and a training centre
started functioning at Vizag, from January '57. However, subse-
quently it was proposed to confine the training scheme only
to the H.S.L.'s requirements as it was felt that the training
of personnel for the second shipyard was not necessary at that
stage.
The U.K. Technical Mission submitted their report to the Government in April 1958. The Mission stated in its report that none of the sites examined by them was ideally suited for the development but the following five sites were worthy of further considerations:

1. Cochin (Frankulam)
2. Mazgaon Dock
3. Kandla
4. Trombay and
5. Geokkhali.

The Mission further stated that Cochin offered more at Ernakulam site than any other site examined, towards the successful development of a shipyard. In June 1958, a high level inter-departmental committee consisting of representatives of the Ministries of Transport, Communications, Commerce and Industry, Defence, Finance, and Planning Commission with the Secretary General as Chairman was appointed to examine the report and to make recommendations regarding the selection of a site for the establishment of the second shipyard. This Committee which submitted its report on 3rd November 1959, recommended that the shipyard should be located at Cochin, and the project was included in the Third Five Year Plan.

The project of the second shipyard came in for some comment by the Chairman of the H.S.L. when he stated, "..... I have felt strongly that our first priority should be to make the Hindustan Shipyard a more productive and efficient organisation for ship construction before launching on a scheme for the second shipyard. As it is, after nearly 15 years of operation, we have not been
able to make the shipyard at Vizag a self-sustaining unit. Our
energies should therefore be devoted to building ships as cheaply
and as speedily as possible in this shipyard, rather than
dissipate our limited resources for putting up another shipyard.
I might add that these observations have no relation to the site
of the shipyard about whose merits I am not qualified to express
any opinion. All that I am concerned with is that in an industry
like shipping which has to face international competition and
which is subject to cyclical and severe slumps, we should be
concerned with the economics of ship construction and not
merely with the number of shipyards we have. We should not
forget that in the ultimate analysis, the burden has to be
borne by the tax-payers and consumers of the country". * When
the Estimates Committee referred this view to the Secretary of
the Ministry, he informed the Committee that if this question
was looked at from the point of view of tonnage which would be
progressively built in the country, a beginning had to be made
with a second shipyard. He added that though it had been decided
to set up a second yard, it was not yet certain whether it would
be taken up during the Third Plan period. That depended on
finding a specific foreign source to provide the whole or part
of the foreign exchange requirements and to collaborate in the
setting up of the second shipyard.

* Chairman speech, H.S.I. before Annual General Meeting held on
21-12-1959.
Progress of the Shipbuilding Yard During the First Two Years (1961/62, 1962/63) of the Third Five Year Plan:

During the Third Plan the H.S.L. is expected to construct ships of a total tonnage of 50,000 to 60,000 D.W.T. per year. As against that the actual performance of the yard during the first two years of the plan was as follows:

<table>
<thead>
<tr>
<th>Year</th>
<th>Production</th>
<th>Subsidy</th>
<th>Cummulative subsidy</th>
</tr>
</thead>
<tbody>
<tr>
<td>1960-61</td>
<td>465.80</td>
<td>54</td>
<td>509</td>
</tr>
<tr>
<td>1961-62</td>
<td>461.43</td>
<td>87</td>
<td>596</td>
</tr>
<tr>
<td>1962-63</td>
<td>498.22</td>
<td>120</td>
<td>716</td>
</tr>
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<table>
<thead>
<tr>
<th>Year</th>
<th>Material</th>
<th>Labour</th>
<th>Overhead</th>
<th>Other expenses</th>
<th>Material/labour Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>1960-61</td>
<td>316.69</td>
<td>40.09</td>
<td>88.64</td>
<td>20.38</td>
<td>7.90:1</td>
</tr>
<tr>
<td>1961-62</td>
<td>301.99</td>
<td>38.54</td>
<td>90.39</td>
<td>30.51</td>
<td>7.84:1</td>
</tr>
<tr>
<td>1962-63</td>
<td>322.06</td>
<td>41.89</td>
<td>95.72</td>
<td>38.55</td>
<td>7.69:1</td>
</tr>
</tbody>
</table>

Value of indigenous and imported materials purchased annually by H.S.L.

<table>
<thead>
<tr>
<th>Year</th>
<th>Steel Indian</th>
<th>Steel Foreign</th>
<th>Machinery Indian</th>
<th>Machinery Foreign</th>
</tr>
</thead>
<tbody>
<tr>
<td>1960-61</td>
<td>26.84</td>
<td>147.98</td>
<td>0.27</td>
<td>57.10</td>
</tr>
<tr>
<td>1961-62</td>
<td>67.02</td>
<td>34.75</td>
<td>3.00</td>
<td>145.48</td>
</tr>
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</table>
During the year 1961/62 two vessels "State of Rajasthan" (9500 DWT) and "Vishva Nidhi" (9500 DWT) and a steel Hopper Barge were completed and delivered to the owners. However, the total production of the yard inclusive, of ship-construction, ship-repairs and capital and other works executed departmentally amounted to Rs.461.43 lakhs as against Rs.465.8 lakhs during the preceding year. The reduction was on account of the labour strike which lasted for 24 days. Despite the labour strike and the consequent loss in production, the material/labour ratio remained more or less at about the same level as in the previous year, as is indicated by Table III. The most disquieting fact was the revision of the schedule of ship construction twice during the year. The reasons given by the Directors of H.S.L. in this respect were:

1. Berthing facilities at the outfit jetty for carrying out post-launching work proved inadequate.

2. Unreliable quality and delivery time of indigenous materials and equipment.

3. Failure of the sub-contractors of the shipyard to maintain the schedules for completion of flooring, painting and other works let out on contract on account of labour troubles.
4. The loss of mandays on account of the stay-in-strike in the shipwright (Berth) department followed by a general strike.

During the year 1962/63, three ships, "State of Punjab" "Vishva Shanti" and "Vishva Prem" with aggregate tonnage of 36,900DWT were completed and delivered to the owners. The total production of the yard inclusive of ship construction, ship repairs etc. reached the figure of Rs.498.22 lakhs, the highest so far. However, there was a decline in the material/labour ratio as shown by Table II due to the unsatisfactory flow of materials. Some further progress was made, during the year in increasing the indigenous content of the ships constructed in the yard. The shipyard itself is now making a few new items like cargo derricks which were previously imported, thus saving foreign exchange to the tune of Rs.35,000/- per ship.

General Observations:

Since its inception the H.S.L. turned out 31 ships with an aggregate, 2,58,000 DWT and five small crafts; as can be seen from the table appended at the end of this chapter. During the First Five Year Plan period 8 vessels with an aggregate 39,924 GRT (64,000 DWT) were constructed and delivered to the owners whereas the number for the Second Five Year Plan period was 9 vessels with an aggregate 47000 GRT (60500 DWT) over and above half a dozen small crafts. During the Second Plan period the performance of the yard showed a definite trend of improvement over that in the First Plan period. However, it fell too short of the targets of 100,000 GRT. and 75,000 to 90,000 GRT set for
the First and Second Plan respectively. During the two and half years of the third plan the yard constructed about 7 ships of an aggregate 80500DWT. of which five ships are of 12300 DWT each. This, in brief, is its achievement during the period of 15 years with the Government subsidy of Rs.7.16 crores. It, by no means, is a very satisfactory performance since the yard continues to face a number of problems.

The H.S.L. takes over 2 years for constructing the ship at a cost higher than what prevails in U.K. ship building yards and much higher than that of the Japanese yards. Judged by these 'Time' 'Cost', criteria, it has to make up a big leeway to reach a position which would enable it to quote competition prices for its ships and to secure sufficient orders not only from the Indian shipowners but also from abroad. On account of the factors mentioned above, the Indian shipowners are generally reluctant to put orders with the yard. The introduction of the U.K. price parity formula has neutralised the cost factor to some extent. However, since the delay in construction of the ships continues, sufficient demand for ships is not forthcoming particularly from the private shipowners and the yard has to feed itself by orders received only from the Government sponsored Shipping Corporation for the last four years. On the other hand even granting that there would be sufficient orders for construction, the yard, which at present works with only four berths and turns out on an average 2½ ships per year will not be in a position to cope up with the growing demand for ships required for participating in the expanding seaborne trade of our country. Besides the lower efficiency and
the resultant higher cost of ship construction, has made its working highly uneconomic and the growing amount of subsidy measures the extent of pressure felt by the taxpayers of the country. Even the highly profitable activities like construction of small crafts and ship repairs which the yard has been, of late, undertaking, would be necessarily limited in the absence of the facilities of a graving dock. Therefore, how to make the shipbuilding activity an economic proposition and to put on a sound footing will depend on the expeditious solution of the problems detailed out in this chapter.
<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Name of Ship</th>
<th>Date of Keel Laying</th>
<th>Date of Launching</th>
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<th>Name of Owners</th>
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<td>1</td>
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<td>The Scindia Steam Navigation Co.Ltd., built these ships on their own account.</td>
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<td>Date of Launching</td>
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* These eight were built originally on Government account and subsequently sold to the present owners.