

COMMITTEE ON PUBLIC UNDERTAKINGS (1968-69)

(FOURTH LOK SABHA)

FORTY-SECOND REPORT

MAZAGON DOCK LIMITED, BOMBAY

MINISTRY OF DEFENCE
(DEPARTMENT OF DEFENCE PRODUCTION)



LOK SABHA SECRETARIAT
NEW DELHI

April, 1969/Chaitra, 1891 (Saka)

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Forty-second Report of the Committee
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(1968-69)

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(1968-69)

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Shri A. L. Rai—*Deputy Secretary.*

Shri M. M. Mathur—*Under Secretary.*

INTRODUCTION

1. I, the Chairman, Committee on Public Undertakings, having been authorised by the Committee to present the Report on their behalf, present this Forty-second Report on Mazagon Dock Ltd., Bombay.

2. This Report is based on the examination of the working of Mazagon Dock Ltd. upto the year ending 31st March, 1968.

3. The Committee visited Mazagon Dock on 1st November, 1968. The Committee took evidence of the representatives of Mazagon Dock Ltd. on the 25th and 26th February, 1969 and of the Ministry of Defence on the 27th February, 1969.

4. The material relating to Mazagon Dock Ltd. was processed at various stages by the Study Group III on Engineering Undertakings of the Committee. The Report was adopted by the Committee on the 10th April, 1969.

5. The Committee wish to express their thanks to the officers of the Ministry of Defence (Department of Defence Production) and Mazagon Dock Ltd. for placing before them the material and information that they wanted in connection with their examination. They also wish to express their thanks to the non-official organisations/individuals who, on request from the Committee, furnished their views on the working of Mazagon Dock Ltd.

5. The Committee also place on record their appreciation of the assistance rendered to them in connection with the examination of audit paras pertaining to Mazagon Dock Ltd. by the Comptroller and Auditor General of India.

G. S. DHILLON,

Chairman,

Committee on Public Undertakings.

NEW DELHI;

April 11, 1969.

Chaitra 21, 1891 (S).

I

HISTORICAL BACKGROUND

Mazagon Dock Ltd. was incorporated in 1934 under the Companies Act, 1913 with the British India Steam Navigation Company and the Peninsular and Oriental Steam Navigation Company of the U.K. as the principal shareholders. It was managed by Mackinnon Mackenzie & Co. Pvt. Ltd., till April, 1960. On the 19th April, 1960, it was acquired by the Government of India in the Ministry of Defence as a package deal along with Garden Reach Workshops Ltd., Calcutta.

1.2. The main business of Mazagon Dock Ltd., is ship-repair and ship building with six ship-building berths and two dry docks. It can build ships upto 145 metres in length, 24 metres in breadth and approximately 15,000 tons deadweight. It has the capacity to build destroyers and frigates, passenger ships, passenger-cum-cargo ships, cargo-ships, dredgers, tugs, barges, trawlers, launches, floating cranes, floating docks, pontoons and assault boats.

1.3. The origin and growth of Mazagon Dock Ltd., are centred round its three dry docks, the smallest of which--the Mazagon dock (152' long) was built in 1774. The second dry dock, known as the Mogul dry dock (426' long), was built in 1835 in the South Yard and was at that time owned by a Sultan. It was subsequently rented by the Peninsular and Oriental Steam Navigation Company in 1854. As the P and O's activities in India increased, they built the third dock--Ritchie dock in 1865 in the North Yard and in later years increased its dimensions (495' long). The P and O Company continued to function in both the North and the South Yards but in 1870 returned the South Yard to its owner the Sultan.

1.4. The British India Steam Navigation Company Ltd. acquired the South Yard from the Sultan in 1900. The B. I. Co. in the South Yard and the P and O in the North Yard functioned separately till 1915. In that year, the two navigation companies formed a partnership and called it Mazagon Dock. This partnership was converted into a public limited company in 1934. It was reconverted into private limited company in 1957. In April, 1960, the Company was acquired by the Government of India.

1.5. At the time of acquiring of the Company by the Government of India, Mazagon Dock Ltd. was primarily a ship-repair yard though building of small craft and some amount of general engineering work was being carried out in its shops. After the

take over of the Company by the Government it was decided by the Government that the facilities at the Dock should be expanded, with a view to build warships as well as merchant ships and to cater to the increased repair work of the Indian Navy and the Indian merchant fleet.

1.6. After liberation of Goa, Mazagon Dock Ltd. was entrusted with the responsibility of resuscitating and working of the shipyard known as Estaleiros Navais de Goa at Goa. This continued to be with Mazagon Dock Ltd., as a Branch of theirs, on lease till 30th September, 1967. After that the yard in Goa is functioning as a separate company titled "Goa Shipyard Limited" and is a subsidiary of Mazagon Dock Ltd.

1.7. The working of Mazagon Dock Ltd. has not been examined earlier either by the Estimates Committee or the Committee on Public Undertakings.

II

SHIPBUILDING

A. Planning

On the eve of Independence, the Indian tonnage of shipping stood at 1,92,000 gross registered tons and a fleet of only 59 ships. During the Third Five Year Plan i. e. 1961 to 1966, a total of 12 vessels with a tonnage of 91,589 GRT were built in India and a further 94 vessels totalling 8,61,703 GRT were acquired from abroad. As on 1st April, 1968, the Indian tonnage was 19,00,000 GRT with a fleet of 236 ships. This however, constitutes only 1.05 per cent of the world tonnage.

2.2. Mazagon Dock Ltd., has two large ship-building berths capable of accommodating ships of 15,000 ton dwt., two smaller building berths which can accommodate ships upto 200 feet in length and 2000 tons dwt. and one covered berth for ships upto 100 feet in length.

2.3. The two large ship-building berths in the South Yard and two 200-foot berths in the North Yard are used only for ship construction. The two small slipways in the Boat Shed in the North Yard are primarily used for shipbuilding, but can be utilised for shiprepair for small craft hauled up for repair purposes. At the moment one of these slipways has been converted into a lamination bay for the construction of the inshore minesweeper for the Navy. On completion of this, the lamination bay will be demolished and the berth will be utilised for its proper functioning.

2.4. The two dry docks are utilised primarily for shiprepair; there has been no occasion so far for using them for ship construction purposes. However, these docks are utilised for docking ships that have been built in the Yard at appropriate stages of construction. It is likely that one of these dry docks may be converted some time in the future into a shipbuilding dock.

2.5. It has been stated that there is no permanent allocation of either the berths or the docks for civil and defence works; the facilities are utilised to the best advantage depending upon the workload and the order book position. At present one big berth in the South Yard is being utilised for construction of the frigates and

it is anticipated that this programme will continue. One of the 200 ft. berths in the North Yard is at present being utilised for the construction of the Second Aviation Fuel Tanker for the Navy—the first one having been launched on 5-4-1969. On the small slipway in the Boat Shed an inshore minesweeper is under construction. The only other large remaining berth in the South Yard was until recently utilised for the construction of a cargo-cum-passenger ship for the Shipping Corporation of India.

2.6. Normally only one medium size ship can be accommodated in each of the two dry docks. However, depending upon the size of the craft more can and are accommodated in these docks.

2.7. Mazagon Dock Ltd. has recently commissioned Kasara Basin—an impounded wet basin—in which 4-5 medium size vessels can be berthed. These can be either for fitting out of new ships that are constructed in the yard or for ship-repair purposes. At present the first frigate, a passenger-cum-cargo-ship and the first Avcat tanker are berthed in Kasara Basin for fitting-out, though a few facilities in Kasara Basin are still being installed.

2.8. To an enquiry of the Committee as to how the programme of ship-building of Mazagon Dock Ltd., fitted in the over-all planning of the shipping requirements of the country during the different Five Year Plans, the Managing Director stated during evidence that their programme had not fitted in with the overall planning in the First and Second Five Year Plans, as they had started building sophisticated types of ships only after mid-1966. Till then Mazagon Dock Ltd. was building small tugs, barges and dredgers of 1500 GRT only. None of their plans could really fit in the overall Five Year Plans. In the Third Five Year Plan period the shipbuilding work done by it was of the value of Rs. 300 lakhs and in the Fourth Five Year Plan period it was expected roughly to be in the region of Rs. 15 crores per annum on an average. 75 per cent of the work would be for the Navy and 25 per cent would be civil work.

2.9. The Managing Director also stated that Mazagon Dock Ltd. was specialising in specialised form of ship construction, whereas Hindustan Shipyard Ltd. was concentrating on cargo-ships. He added that planning of programme in terms of deadweight tonnage was peculiar to the construction of cargo-ships and bulk carriers and was not applicable to warships. He further stated that Mazagon Dock Ltd. was planning its future programme of construction on

2.10. The present Secretary, Ministry of Defence (who was Chairman of Mazagon Dock Ltd. from 7-11-1964 to 28-2-1969) informed the Committee during evidence that Mazagon Dock Ltd. had ventured to go into new fields. It was first to construct a fishing trawler, a medium size Bucket Dredger, a passenger-cum-Cargo Vessel, Iron Ore Barges and an Inshore Minesweeper; it is now constructing for the first time in India sophisticated warships and will shortly be commencing production of two large Passenger Vessels designed for the first time in the country. With this type of construction facility being developed, he went on to say, it was not possible to put in a plan without knowing the full extent of the order. He further added that Mazagon Dock Ltd. made an assessment in terms of new construction, capacity for repairs, general engineering and that was expressed in terms of money as it was possible to express it in terms of tonnage. The Defence Secretary was of the view that in a shipyard, without a reference to order book, it was difficult to give concrete plan for five or ten year periods.

2.11. The Committee enquired about the amounts budgeted under the head 'Shipbuilding' since the Company was taken over by the Government in April, 1960, together with the amounts actually spent along with the reasons for variations, if any. It was stated that there was no system of preparation of budgets and review of performance against the targets in the budgets till the year 1966-67. The budgeted amounts under the head 'Shipbuilding' for 1966-67, 1967-68, and 1968-69 along with actual performance were as follows:—

(Rs. in lakhs)

1966-67		1967-68		1968-69	
Budgeted	Actual	Budgeted	Actual	Budgeted	Actual
158.41	157.77	290.42	281.03	590.00	

2.12. It would be seen that the budgeted figures and the actuals for shipbuilding in the year 1966-67 are almost the same. It was stated that the difference of Rs. 9.39 lakhs for the year 1967-68 was mainly due to non-receipt of equipment for some of the ships under construction before the 31st March, 1968 as anticipated. In the current year Mazagon Dock Ltd. expects to substantially achieve the budgeted figures which are nearly double of the last year, by virtue of completion of their Expansion Plan both in the North and the South Yards.

2.13. The Committee find that till recently Mazagon Dock Ltd. had been proceeding in an ad hoc manner with frequent short run and uncertain orders. It started projecting firm plans in terms of money only from the year 1966-67. The Committee are unable to understand why it was not possible for it to prepare targets for new construction even in terms of money prior to 1966-67. Proper planning in a phased manner is essential for making best use of men and resources and as a check or control device on operations so that timely corrective action could be taken where results did not work out according to plans and forecasts. The Committee hope that with the completion of the Expansion Scheme Mazagon Dock Ltd. will work out yearly as is being done now as well as long range production schedules.

B. New Construction

2.14. Mazagon Dock Ltd. is at present concentrating on building frigates and inshore minesweepers for the Navy. Besides, it is also building two AVCAT tankers for carrying fuel for the aircraft carrier I.N.S. 'Vikrant', and one passenger-cum-cargo vessel-M.V. "Onge" for the Shipping Corporation of India. The Company has recently received an order for a dredger for the Bombay Port Trust, a dredger for Maharashtra State, two passenger vessels for the Shipping Corporation of India, to replace the 'State of Bombay' and the 'State of Madras'. One 93 feet motor launch M.L. "Kavaratti" is ready for delivery. Mazagon Dock Ltd. depends on foreign collaboration only for certain specialised type of craft such as dredgers and warships like the frigates.

2.15. Besides, it is also a prime contractor and leader of a consortium of five shipyards of the West coast, which is jointly handling an order received from the Ministry of Food and Agriculture for 20 fishing trawlers which are to be delivered in a space of 18 months. The final firm order was received on 10th October, 1968. This Consortium was set up to obtain maximum output.

(i) Frigates

2.16. In collaboration with Messrs Vickers Ltd. and Yarrow & Co. Ltd., Mazagon Dock Ltd. is building three new general purpose frigates of the FSA 34 type of Leander Class. The first frigate was launched on the 23rd October, 1968 and the keel of the second frigate was laid on the 4th November, 1968. The first frigate is expected to join the Indian Navy towards the end of 1971. The second frigate is due to be launched in May, 1970 and should be

ready for delivery in October, 1972. According to present schedule the third frigate is scheduled to be laid in the building berth in May, 1970 and delivered to the Navy in October 1973, but owing to the delay in placing order for the second and third frigates by 9 months on account of foreign exchange difficulties, there may be some delay in the delivery of the 3rd frigate.

2.17. It was stated that a number of problems faced Mazagon Dock Ltd. in its first venture. Modernisation of shops and yard facilities had to be accomplished in step with the requirements of the construction of frigates, besides continuing the normal business of shiprepair and shipbuilding. Skilled and experienced personnel were difficult to get. The back up industry was lagging. A modern warship required a wide variety of steels, non-ferrous alloys, raw and intermediate materials, besides manufactured equipment, such as engines, boilers, electric equipment and armaments.

2.18. The first frigate is now under construction. It was too early to determine the cost of construction, which might be between Rs. 18 to 20 crores. It was stated that the second and the third frigates will cost about the same, if changes were not made in the equipment to be fitted in them. As more of the equipment is to be manufactured in India the cost might slightly go up. Efforts were continuously being made to increase the indigenous content of each subsequent ship. The cost of a similar imported vessel was stated to be about Rs. 16.50 crores.

2.19. A regular agreement with the Government of India regarding the price, time schedule, etc. for the first two frigates had been finalised, although the agreement had not yet been signed. The Committee enquired if orders for all the three frigates had been received together, whether it would have been possible to start the work simultaneously thus resulting in economy and lower costs.

It was stated: "No, it would not have been possible to start work simultaneously on all the three frigates as the Company does not have enough building berths to accommodate the three frigates at the same time. If orders for the three frigates had been received at the same time, it may perhaps have been possible to achieve certain reductions in the prices for some of the equipment to be brought for the frigates."

2.20. The first frigate, which was launched on the 23rd October, 1968 would join the Indian Naval fleet towards the end of 1971. It had been stated that there was scope for reduction in the building schedule, but it was dependent on receipt of equipment. Mazagon Dock Ltd.'s experience was that neither foreign nor indigenous suppliers had been on schedule for supply of equipment. Further discussing this question during evidence, the Managing Director stated that they were planning to telescope their schedule as much as was possible provided there was no delay by the suppliers of equipment. They hoped to complete the first frigate in 5½ years and the second in 4½ years.

2.21. As regards the equipment, instrumentation and armaments, the Committee were informed that in the case of first frigate about 85 per cent of equipment etc. would be from abroad, about 64 per cent in the second frigate and about 60 per cent in the third frigate. The Managing Director also stated that there was a Study Group, consisting of the representatives of DGTD, Department of Defence Production and the Navy to scrutinise the requirements of the frigates from an indigenous availability angle. There was also a Steering Committee under the Chairmanship of the Chief of Naval Staff to oversee the work of the Study Group. The frigates had given a good motivation to import substitution.

2.22. During the evidence, the Secretary Ministry of Defence stated that Mazagon Dock Ltd. had introduced 263 indigenous items of the value of Rs. 1 crore on the first frigate. He also pointed out some of the peculiarities with which they were confronted. As a warship had to stand enormous shocks on account of depth charges, bombing, etc., the instruments had to be necessarily very rugged. Another difficulty was that the collaborators were not prepared to guarantee the performance of the frigates on introduction of Indian items. The Ministry had to accept a calculated risk, because it was a question of introduction of indigenous items on the frigates.

2.23. The Managing Director informed the Committee that alterations, proposed to be made in weapons and fire-control systems in the second and third frigates had recently been finalised. Though it would not be possible to state categorically, changes were likely to affect the schedule of construction as well as costs adversely.

2.24. The completion of the first three frigates was expected to be achieved by end of 1973. Thereafter, the Managing Director

was of the view that Mazagon Dock Ltd. could deliver one frigate each year. He added that this frigate was one of the most sophisticated one of that size and if they could build that successfully, there was no reason why they should not be able to change over conveniently from frigates to other types of warships after the present assignment was over.

2.25. The Committee are happy to note that the first frigate was launched on the due date. This is no doubt a major break-through in the Indian shipbuilding industry, and the Committee hope that the Mazagon Dock Ltd. will endeavour to further improve its performance with experience. The efforts being made towards indigenisation of the frigates are laudable, and the Committee expect these efforts will be intensified to bring about further reduction in the imported components.

(ii) *Inshore Minesweepers*

2.26. Mazagon Dock Ltd. had undertaken construction of two inshore minesweepers for the Indian Navy. The order for building two inshore minesweepers was placed on it by the Government on 4th March, 1961. Considerable difficulties were experienced by the Company in locating indigenous sources of timber and non-ferrous fittings. As work progressed with lamination, it was realised that sufficient good quality timber would not be available and it was therefore decided that the Company would concentrate on building the first ship and that only after completing this ship, construction work on the second ship would commence.

2.27. The keel of the first ship was laid on 24th January, 1964. It was launched on 24th April, 1967 and commissioned on 12th June, 1968. The keel of the second ship was laid on 21st September, 1968. It is scheduled to be launched in May, 1969 and would be ready for delivery in May, 1970.

2.28. Mazagon Dock Ltd. had entered into collaboration with M/s J. Samuel White and Co. for the supply of technical know-how for the construction of these minesweepers. Mazagon Dock Ltd. had received only drawings and specifications from them before they went out of business in 1965. Mazagon Dock Ltd. received little help from them in the actual construction of the minesweeper, which started in the real sense only after 1965.

2.29. The Government of India agreed to a price of Rs. 42.5 lakhs for the first minesweeper, as against the actual cost of construction of Rs. 58.5 lakhs. The Company thus incurred a loss of Rs. 16 lakhs. The Company's request for an increase in the price for the second minesweeper was stated to be still under examination of the Government.

2.30. During evidence the Committee desired to know the reasons for losses incurred by Mazagon Dock Ltd. in the construction of two inshore minesweepers. The Managing Director stated that commitment for the collaboration agreement for the construction of two minesweepers was made with Messrs J. Samuel White & Co. before the take-over of the Company. In fact the collaboration agreement was between Messrs J. Samuel White & Co. and Messrs Garden Reach Workshops Ltd. Calcutta and it was later on transferred to Mazagon Dock Ltd. The collaborators went out of business in 1965-66 and the absence of proper information adversely affected the construction schedule at the yard. A number of techniques, including lamination with Indian timber, had to be developed by the yard itself and the trial and error process took time.

2.31. The Committee were also informed that the contract price was subject to cost plus procedure, but with a ceiling. In practice it actually meant that the ceiling was the quoted price. The estimates for the two ships were based on a very sketchy information received from the collaborators. Though the order for the two ships was given in March, 1961, the initial quotations were actually submitted a couple of years before, that is prior to the take over of the Company by the Government.

2.32. The Managing Director also stated that the cost of a similar imported vessel would be Rs 100 lakhs, as against indigenous cost of Rs. 58 lakhs, which, however, did not include the cost of equipment supplied by the Navy estimated at approximately Rs. 25 lakhs.

2.33. Mazagon Dock Ltd. stated that a paper giving justification to treat the order for minesweepers as a "Development Order" had been put up to the Government. The difficulties experienced and the cost incurred by the Company in the development of lamination technique, procurement of timber and non-ferrous fittings, etc., were explained in this paper. As a result of these factors as well as escalation in labour and material, the cost of the first and second minesweepers was now estimated to be about Rs. 61.90

lakhs (actuals Rs. 58.55 lakhs) and Rs. 70.33 lakhs respectively including overheads as against the contract price of Rs. 31.25 lakhs and Rs. 28.6 lakhs for the first and second minesweeper respectively. The development costs had not been fully accepted by the Government, man-hours were not fully allowed and escalation both on material and labour had not been fully accepted. Mazagon Dock Ltd. had also not been associated with the negotiations for the contract in the initial stages.

2.34. It had been stated that unless the order was treated as a development order, the Company would have to suffer a heavy loss in this contract. Though Mazagon Dock Ltd. was in favour of taking in hand the construction of the second minesweeper, the question of cost would have to be negotiated with the Government as the Company could not afford to bear the heavy loss.

2.35. The Committee are not aware of the reasons on account of which the Government had not treated the construction of minesweepers in the country for the first time as a development order. They however, feel that factors which have resulted in this huge loss were beyond the control of the present management. If Mazagon Dock Ltd. was expected to work as a commercial undertaking, the Committee hope that in future Government would ensure that financial risks involved in undertaking new item would be fully covered, particularly when specific orders are to be executed in accordance with the desire of the Navy.

C. Defective Estimates

2.36. A number of cases of defective estimates of new construction during the last five years came to the notice of the Committee. The cost of construction was much higher than the contracted price and in some cases even the selling price did not cover the prime cost. A few such cases including those pointed out by Audit, are narrated below:

- (i) An order was received by Mazagon Dock Ltd. for two vessels—Tug 'Kistna' and Tug 'Godavari' in August, 1961. The total cost of construction including overheads was Rs. 97.31 lakhs, whereas the contract price was Rs. 61.08 lakhs. The prime cost alone was Rs. 73.42 lakhs. The total loss suffered by the Company, if overheads were included was Rs. 36.23 lakhs.

- (ii) In the case of the following vessels, the actual cost of construction was appreciably more than the estimates, on the basis of which tenders were submitted:—

Vessel	Date of Estimate	Actual cost including overheads	Loss (Rs. in lakhs)
A.	July, 1959	23.04*	6.43
B.	July, 1959	0.58*	0.03
C.	Dec., 1959	88.42	32.11
D.	April, 1960	2.36*	0.47
E.	Jan. 1960	97.31	36.23
F.	Jan. 1960		
G.	April, 1960	3.90	1.55
			76.82

*Excluding overheads as these are not available.

These losses were however in respect of construction works for which the estimates were prepared by the pre-take over Management.

- (iii) Even after take-over, the Company suffered a loss of Rs. 12.29 lakhs in respect of two vessels for which the estimates were submitted in September and November, 1961. The actual cost including overheads for these two vessels amounted to Rs. 11.29 lakhs and Rs. 19.96 lakhs respectively.
- (iv) In December, 1959, the Company quoted Rs. 42,75,000 for the construction of a passenger-cum-cargo vessel 'C'. This price was subject to escalation clause. The owners, however, insisted on a fixed price without any escalation to which the Company agreed in March, 1960 with the stipulation that price quoted should be increased by 2-1/2 per cent.
- On 9th September, 1960, the Company received the firm order at the increased price of Rs. 43.82 lakhs. Subsequently certain additions to the items of machinery and equipment were made and the final contract price was raised to Rs. 46.19 lakhs.

The work was completed in September, 1964 and handed over on the 12th January, 1965 after trials at a cost of Rs. 88.42 lakhs against which the owners paid Rs. 56.31 lakhs only. The Company thus suffered a loss of Rs. 32.11 lakhs in this deal.

- (v) The Company quoted Rs. 1.95 lakhs for the construction of a Police launch (vessel 'G') for the Madras Port Trust. The offer was open upto 25th September, 1960, but the contract was accepted in April 1961 for Rs. 2.35 lakhs including transport charges, insurance etc. Although, in the meantime, there was rise in the cost of imported materials required for the construction owing to revaluation of German currency, the Company did not revise its rate nor ask for insertion of escalation clause for the imported equipment. The designs for the launch were prepared after receiving the order, with the result that a more powerful engine than originally contemplated had to be imported at an extra cost of Rs. 12,432 to fulfil the guaranteed speed. The construction of the launch was completed in June, 1964 at a cost of Rs. 3.90 lakhs involving a loss of Rs. 1.55 lakhs to the Company.
- (vi) 500-ton Water Boat VARIDA: There was no escalation clause. The loss was due to defective estimating and the escalation in labour and material costs between the date of submission of the estimates and the date of completion of the work.
- (vii) Fishing trawlers for the DGS&D, steam tug for Kandla and ferry craft for Cochin Naval Base: The increase in cost was due to escalation in labour costs due to increase in the cost of living index, increase in the material prices due to long gap between the date of submission of the quotation and the actual completion of the craft and under estimation of labour and material costs. The Company had recovered prime cost but there had been under-recovery of overheads.
- (viii) Barges : Devi, Raneer and Gauri : The order for these was placed by a firm in Goa. The price was based on a cost estimate for the construction of these barges in Goa and took into account the comparative quotations which the customer was likely to receive for this type of barge from other parties. The barges were, however, built in Bombay, where the labour cost was higher than Goa. As such the total cost was more than the contract price.

- (ix) Barges Jay Menaka & Jay Sharda: The two barges were sold at Rs. 9.75 lakhs each. There was, however, no loss on prime cost. This order was undertaken to avoid lay-off of productive labour and avoiding idle capacity.
- (x) Assault boats: This order for assault boats was accepted after discussions with the Government at a price lower than what Mazagon Dock Ltd. had quoted. The Company was aware at the time of accepting this order that it would not be able to recover full overheads on these orders. This was done with a view to utilise otherwise idle capacity.
- (xi) Centre pontoons & End pontoons—The quotations were made by the Company during the early part of 1965.

2.37. Apart from these, Mazagon Dock Ltd. also expected that the second inshore minesweeper, AVCAT tankers and M.V. 'Onge', now under construction, might result in losses.

2.38. Broadly speaking the following reasons had been assigned by the Company for defective estimating:

- (i) under-estimation of labour cost and of customs duty.
- (ii) increase in cost of materials.
- (iii) non-availability of steel and foreign exchange.
- (iv) under-estimation of total mandays required.
- (v) omission to include a number of items of material.
- (vi) absence of escalation clause.
- (vii) under-estimation of overheads.
- (viii) knowingly accepting the orders to avoid loss on account of non-utilisation of idle capacity/labour.

2.39. During the course of evidence, the Secretary, Ministry of Defence admitted that it was true that in a number of cases estimating was not correct, but in almost all the above cases the work of estimating was started before the shipyard was taken over by the Government. It was also pointed out that the Company was a privately run yard before 1960 and the then Management evidently accepted orders by quoting lower prices in order to fill up the order book before the sale of the Company. The Defence Secretary also informed the Committee that the Government took over all the personnel of the Company on take-over and it was only after one or two years' experience that the Company started changing the personnel. After the change over, it was expected that the incidence of defective estimating would come down.

2.40. In a note submitted to the Committee after the evidence it was stated:

“The customer while placing orders did not accept the inclusion of the escalation clause in the agreement. Even now customers prefer a fixed price contract and exclude escalation clause. However, whereas possible provision for escalation to the extent acceptable to the customer is made. For example, the clause allowing escalation on labour, overheads, imported material and import substitution has now been included in the standard new construction contract concluded with the Navy.

Where the loss anticipated on account of idle labour and idle capacity is more than the anticipated loss on a job, it is better to take up that job. This is advisable not only from financial point of view, but also from psychological point of view. Once the labour remains idle for some period, their morale, efficiency and productivity go down and their efficiency on subsequent jobs is reduced. The shipbuilder has no choice but to accept such orders occasionally if they want to build ships, as they cannot switch over to other type of work.”

2.41. A new system of estimating was introduced by Mazagon Dock Ltd. in the year 1965. Under this system quicker data compilation and estimating had to be evolved and had to function before there could be any significant improvement in the accuracy of the estimates. The implementation of the new system was a time consuming process as standards and norms had to be fixed for estimating and a system of documentation and data compilation had to be evolved for the purpose. The Company appointed the Administrative Staff College of India's Consultancy Division to undertake this work in 1965. The Consultants completed their work in 20 months though their interim suggestions were discussed and impleted from time to time. The full system became effective in April, 1967. It was stated that it was the policy of Mazagon Dock Ltd. to include in its contracts an escalation clause providing for increase in rates of labour, material and overheads. In the case of the Navy, the standard new construction contract did include an escalation clause now. In the case of other customers, an escalation clause was invariably proposed but its inclusion was a subject of negotiation.

2.42. The Committee were given to understand that while Mazagon Dock Ltd. had now a better system of estimating than it had before but it was still possible that it would continue to undertake ship-building jobs which would show a loss against the booked costs. It

had also been stated that shipbuilding was a low profit industry and often for reasons of competition and for utilising capacity, the Management had to accept work even at a sacrifice.

2.43. Although in bulk of cases where losses had been incurred, the estimates had been formulated in the pre-take over period or in the period immediately after the take-over, the Committee are unhappy to note that even at present some of the orders for new construction are expected to result in losses to the Company. This indicates that all the factors contributing to the cost of construction of a vessel are not being accurately assessed. The Committee trust that with the introduction of the new system of data compilation and estimating, the Company would show better results.

D. Orders from Private Sector

2.44. The Committee observed that the number of orders coming to Mazagon Dock Ltd. from the private sector shipping industry was too small. It had received orders from the private sector only for small craft like barges and launches and no non-Governmental organisation had placed orders for large ships. Explaining the reasons for this, the Managing Director stated that firstly Mazagon Dock Ltd., was rather new in the field and secondly it was chiefly due to non-availability of credit facilities to shipowners. A shipowner had to pay only 10 per cent on delivery while buying a ship from abroad and the rest of the payment was spread over a period of eight to ten years at an interest of only 3 to 5 per cent. But such a thing was not possible for Mazagon Dock Ltd. He stated that unless Government provided directly or indirectly some form of subsidy or tariff concession as was being done by all maritime ship building countries, the prices of Mazagon Dock Ltd., could never be comparable with international parity price. He added that Mazagon Dock Ltd., had preferred to have a fixed price and had so far neither asked for any subsidy nor had Government given any. The Managing Director also informed the Committee, "In case of merchant ships, the practice in all maritime countries is to provide a subsidy either directly or indirectly to the shipbuilders. The reason is that it has been accepted by and large in all countries including Japan that shipbuilding as such is not a profitable line or business".

2.45. While discussing the objectives of Mazagon Dock Ltd. during evidence, the Managing Director stated that it was primarily a Defence Establishment, but was being run on commercial lines. The Defence Secretary also stated that though the naval work was given priority, the quantum of work available could not keep Mazagon

Dock Ltd. fully engaged, so it undertook commercial work and in both cases it was being run on commercial lines.

2.46. The Committee note that the quantum of work available with Mazagon Dock Ltd., is not enough to keep it fully engaged and it desires to work on commercial lines so as to secure orders from shipping companies. The Committee feel that as there is ample scope for expansion of shipping in the country Mazagon Dock Ltd., could play a useful role in that direction. They would, however, like to stress that the ships to be built by it should be fully competitive in price, quality and performance so as to win customers through competitive rates.

2.47. The Committee are given to understand that ships are being offered by leading maritime countries on very attractive terms and conditions. The Committee suggest that in the interest of developing the infant ship building industry in the country, Government may consider how best the Indian ship builders could be placed in a position to offer equally attractive terms and conditions so that the Indian shipping lines are induced to purchase their ships from indigenous shipyards. At present about 90 per cent of the ships brought under India flag are being purchased from abroad. The Government should help the Indian ship builders and Mazagon Dock Limited in particular to expand their building activities so as to build more ships and where possible, bigger ones. This will result in double benefit. On the one hand it will save foreign exchange which would have gone to a foreign builder of ships and on the other it will benefit the infant home industry which will be able to grow and give more employment.

III

SHIP REPAIRING

A. Value of Ship Repair Work

The ship repair work undertaken by the Company includes special surveys, annual surveys, damage repairs (which include grounding, collision and fire damage) and voyage repairs. The Company can undertake repairs of main-engine, hull and electrical repairs to any type and size of ocean-going vessels such as naval ships, tankers, bulk carriers, cargo vessels, passenger vessels, dredgers, drilling rigs, etc. Under-water repairs can also be carried out to any type and size of vessel that can enter Bombay Port Trust Dry Dock i.e. upto about 40,000 to 50,000 tonners.

3.2. The purchase of Mazagon Dock Ltd. by Government in April, 1960, was principally to augment the capacity for undertaking shiprepairing work of naval ships. It has been able to undertake all ship repair work of the Navy awarded to it, which it was not possible for the naval dockyard to handle. For naval work, first preference is given to naval dockyard and what cannot be handled by them is then offered to other shipyards and mainly it has been given to Mazagon Dock Ltd., Bombay and Garden Reach Workshops, Calcutta.

3.3. Besides the Navy, Mazagon Dock Ltd. has entered into regular agreements with some customers such as B.I. & P.O. group, and the Mogul Line Ltd. The Shipping Corporation of India and Jayanti Shipping Company also entrust their work to it even though they do not have any formal agreement with it in this regard. It charges all these companies actual cost of repairs plus a small margin of profit.

3.4. It has been stated that certain customers supply 'defect list' of repairs to be carried out to a particular ship and then Mazagon Dock Ltd. quotes a fixed price for the items in the defect list. In such cases it bills them as per the price agreed to. In quite a few other cases, although customers supply a defect list, they do not ask for a fixed price. Mazagon Dock Ltd. bills them for the actual cost on these jobs plus its usual profit margin.

3.5. In both the cases, quite often additional work not indicated in the defect list comes up during the course of repair. Mazagon Dock Ltd. undertakes and completes the work on these items also either on the basis of a fixed price, if it can prepare an estimate, or on a cost plus profit basis depending upon the nature of the job.

3.6. It has been further stated that Mazagon Dock Ltd. has a schedule of standard rates for standard jobs, which it supplies to the customers. Voyage repairs are normally carried out on an open order basis.

3.7. The value of ship repairing work done by the Company since 1964-65 and its percentage to the total value of production is as follows:—

(Rs. in lakhs)

Year	Value of ship repair work	Value of total production	% of (2) to (3)
1	2	3	4
1964-65	265.10	386.63	62.3
1965-66	250.92	390.91	61.6
1966-67	311.17	501.27	62.1
1967-68	358.94	692.84	51.8

3.8. The value of ship repair work done during 1965-66 was less than during the previous year by Rs. 14.18 lakhs. This was mainly stated to be due to reduction in work from foreign shipping companies during the three to four months following hostilities with Pakistan. Another reason was that B.I. Group of Companies had a somewhat reduced fleet of ships based at Bombay as compared to 1964-65. Although the ship repair turnover of the Yard in 1967-68 registered an increase of 15 per cent over the previous year's performance, its percentage to the total value of production however, came down from 62.1 per cent in 1966-67 to 51.8 per cent in 1967-68. During the course of evidence, the Managing Director informed the Committee that from about 1965, which was a bad year due to Pakistan conflict, when there was a tremendous drop in the ship repair work, the ship repairing capacity of Mazagon Dock Ltd. had been utilised right upto December, 1968. He added that from December, 1968, onwards there was a sudden drop in the quantum of work due to lack of shipping in Bombay.

3.9. It has been further stated that the shortfall in shipping in Bombay has been due to a number of factors acting collectively, viz:

- (a) the strike of the longshoremen on United States Sea Ports since December 1968. A large number of ships intended for Indian Ports are stuck there.
- (b) Reduction in the import of goods from abroad.
- (c) The closure of the Suez Canal resulting in ships coming round the Cape preferring to unload their cargoes at Cochin and Madras.
- (d) Reduction in import of foodgrains.

All these have adversely affected the ship repair work of Mazagon Dock Ltd.

3.10. The Committee note that the available capacity of ship repairing work which had fallen to Rs. 250 lakhs in 1965-66 has risen to over Rs. 358 lakhs in 1967-68. The Committee are, however, constrained to note that there has been some decline in the quantum of repair work since December, 1968. The Committee would like Government and Mazagon Dock Ltd. to look into the matter urgently and initiate remedial measures to check the downward trend. In this connection, the Committee note that while the Mazagon Dock Ltd., has regular agreements for shiprepairing work with B.I. and P.O. Group and Mogul Line Ships, it does not have such formal agreements with Shipping Corporation of India and the Jayanti Shipping Company. The Committee consider that as the latter are leading shipping companies in India, Mazagon Dock Ltd. should endeavour to enter into regular agreements with them for repair of their ships. Suitable measures may also be taken by Government to induce ships registered in India to get their periodical repairs done by the Indian shipyards.

3.11. The Committee need hardly point out that if Mazagon Dock Ltd., desires to retain its position as the premier ship repairing yard it must make its rates, quality and time schedules for execution of works fully competitive with the facilities available east of the Suez. The Committee would like Government and the Mazagon Dock Ltd. to pay special attention to this aspect of operations so as not only to save foreign exchange by undertaking repairs to ships within the country but also to earn more foreign exchange by undertaking the repairs to foreign ships which come in such large numbers to India.

B. Losses on Ship repair

3.12. It has been stated that during the last five years, the Company carried out repairs to about 3000 ships and did not incur losses except in the following four cases under the circumstances explained below:—

(i) S. S. Malow	Loss incurred	Rs. 14,523
(ii) Moralia V	Do.	Rs. 45,311
(iii) S. S. State of Bombay	Do.	Rs. 15,657
(iv) Noor B	Do.	Rs. 44,732

3.13. In respect of (i), (ii) and (iv) above the Company had to prepare the bills urgently on completion of the repairs before the ships sailed from the harbour. The bills were prepared on the basis of cost bookings available at that time and the estimate of the Ship Repair Manager of the job costs. It turned out later that more cost had been booked. This could not be recovered from the owners as final bills had already been submitted.

3.14. In addition, the Audit pointed out that in May, 1961, the Company undertook a repair job of a sailing vessel entrusted to it by a foreign firm at a cost not exceeding Rs. 40,000 exclusive of sales tax. The work was, however, completed at a cost of Rs. 1,05,835 in October, 1961. The foreign firm did not agree to bear the increased cost of repairs on the ground that the original quotation of the Company included all the items of work involved. The solicitors of the Company also held in May, 1964, that the Company would not be entitled to charge any thing in addition to Rs. 40,000 as the offer had been accepted unconditionally.

3.15. According to the Management, the excess over the estimate was due to increase in the quantum of work as compared with that anticipated at the time of framing the estimate which was prepared in haste. In this case the Company was neither in a position to prepare the detailed drawings nor carry out a detailed examination, particularly that of under-water work, of the vessel. The defective assessment of the quantum of work involved, and non-preparation of a realistic estimate, resulted in a loss of Rs. 65,835. The loss was written off as a bad debt in the accounts for 1963-64.

3.16. Explaining the circumstances in which the Company had to prepare the estimates in a hurry in respect of the above vessel,

the Committee were informed that the owner of the vessel was returning to Colombo and wanted to take a decision prior to his departure. The quotation of an amount of Rs. 40,000 exclusive of sales tax was based on the estimate of the job which could be visualised. This was a normal practice for giving estimates in the ship repair jobs; the estimates for underwater work are given after the drydocking of the vessel. The time available to the Company was not enough to drydock the vessel. It was the understanding to assess the underwater work after the drydocking of the vessel but there was nothing in writing.

3.17. The Committee understand that the system of estimating and costing in Mazagon Dock Ltd. has since been streamlined. As in repair work time is of vital importance, it is necessary not only to prepare accurate estimates but also to record the cost of each job promptly and correctly so that complete and final bills can be given to the clients immediately.

3.18. The Committee would suggest that every case of defective estimating or loss should be examined by the Management expeditiously and suitable instructions issued with a view to avoiding its repetition.

C. Cost of Ship Repair

3.19. In early 1965, there was a general complaint from ship-owners in Bombay that the cost of ship repair work at Mazagon Dock Ltd. was high. This was due to various factors amongst which were: (i) ship repairing industry in Bombay was paying the highest wages to labour; (ii) the labour force employed was more than required and (iii) that their employment was not properly planned.

3.20. In order to remove the general impression among the customers that the charges by Mazagon Dock Ltd. for ship repairs and ship construction were on the high side, a cut on the amount of bills was imposed in early 1966 to make the rates more competitive and attract more business. Although this policy had restricted the profit for the year 1965-66, it was hoped by the Management that with the measures to economise by proper planning which were in hand, the policy would pay dividends in future.

3.21. Also realising the importance of conserving foreign exchange by increasing ship repair work, the Company as a matter of policy reduced the ship repair work rates by about 5 per cent in 1965-66. However, despite this measure the turn-over on account of ship repair work remained lower than 1964-65. It had been stated that this was due to false propaganda abroad against the safety of foreign ships in Bombay during the Pakistani conflict.

3.22. During 1966-67, devaluation made the ship repairing rates of the Company quite attractive for foreign owners. The reduced rates and devaluation brought about a substantial increase in ship repair work of ships flying foreign flags during the year 1966-67.

3.23. During evidence of the representatives of Mazagon Dock Ltd., the Committee enquired the reasons for the cost of repair work done at Mazagon Dock Ltd. being higher than the yards abroad particularly in the Eastern countries like Hong Kong or Japan. The Committee were informed as follows:—

“In so far as engineering repair work is concerned, ship repair costs in Mazagon Dock Ltd., are more or less on par with the costs abroad. In so far as steel work is concerned, costs in Mazagon Dock are higher by about 15 per cent on account of wide disparity between the prices of steel and electrodes obtained in India and abroad particularly in Japan, Hong Kong, etc.

“A substantial portion of the ship repair work, say about 75 per cent consists of labour. Therefore, apart from making continuous efforts for economical procurement of material requirements for ship repair, we are concentrating on preplanning of labour deployment in order to reduce the overall costs. The higher costs of steel and electrodes are not under the control of the Company”.

3.24. In the absence of detailed information about the rates charged by the shipyards abroad, it is difficult to judge the price structure of ship repairing jobs of Mazagon Dock Ltd. The Committee, however, find that the Management is itself conscious of the need for reducing the cost of ship repairing work. They hope that efforts in this direction will be continued, for if Mazagon Dock Ltd., has to create even a better image of itself in the world shipping industry, any impression of the costs of repairs, being high—created rightly or wrongly—has to be erased through proper publicity of its costs of repairs.

D. Quality of Work

3.25. It had been admitted by the Management that complaints were occasionally received from the customers. These mainly related to high costs and at times bad workmanship. As regards bad workmanship, complaints were generally vague and were settled on discussion with the customers. As regards high costs, it was stated that this was a general complaint and was based on a subjective estimate of a customer of the price for the repair work. It

was found that in some cases, this was result of wrong bookings of labour and materials as against different jobs on the same ship. These were discussed with the customers and settled. In some cases to satisfy the customer, bills were reduced or work redone.

3.26. During evidence of the representatives of Mazagon Dock Ltd., the Committee were informed that the percentage of repair work done, which had to be redone, in comparison to the total repair work was negligible. The general reasons for redoing the ship repair work were poor material and lack of supervision.

3.27. The Committee are happy to note that cases requiring re-doing of jobs are within reasonable limits in Mazagon Dock Ltd. They hope that greater quality control would be exercised over the repair jobs so that such complaints are further minimised.

E. Co-ordination in Repair Work

3.28. It was brought to the notice of the Committee that there was little liaison between the shopforeman incharge and the foreman incharge of the ship repairs and this resulted in loss of time. Jobs sent from the ships often lay in the shops without anyone attending to the repairs, because the instructions had not been passed on.

3.29. The Managing Director admitted during the course of evidence that there was sometimes lack of liaison between the man in the ship and the foreman in charge of ship repair in the past. He stated that a Planning and Production Department had been set up by the Company in 1966. When a ship needed repairs extending to a period of 3 to 4 weeks or more, Mazagon Dock Ltd., appointed co-ordinators for each ship, whose job was to ensure that the man on the ship and the man on the shop floor know exactly what was going on and the priorities accorded according to the needs. This practice was, however, not being followed in cases of day to day repairs or where a ship needed attention for one or two days.

3.30 The Committee feel that lack of proper co-ordination between various departments of the shipyards had in the past resulted in loss of time, increased costs and dissatisfaction of the customer. The Committee trust that with the establishment of the Planning and Production Department complete coordination and supervision in all respects will be maintained.

IV

EXPANSION SCHEME

On the 1st March, 1961, Sir Alexander Gibb and Partners, a firm of Consulting Engineers from the United Kingdom were asked to investigate the feasibility of developing dockyard facilities at Mazagon Dock Ltd., Bombay and to prepare the Project Report complete with preliminary designs, estimates of cost and time required for construction. Subsequently, their terms were enlarged to incorporate the provision of shipbuilding facilities suitable for the construction of Leander Class Frigates.

4.2. Sir Alexander Gibb and Partners submitted their report to the Company on the 8th November, 1961. The report outlined the feasibility of adopting several alternative schemes. After a detailed study of the report, the Board of Directors of the Company approved on the 20th February, 1962 a scheme, at the following cost as worked out by the Consultants:—

(Rs. in Lakhs)

Total Cost	Foreign Exchange Component
Rs. 133.50	Rs. 58.00
Rs. 218.20	Rs. 70.00
<u>Rs. 351.70</u>	<u>Rs. 128.00</u>

4.3. The Government of India, conveyed their sanction for the above expansion scheme at a total cost of Rs. 351.70 lakhs on the 28th September, 1962.

4.4. The report and estimates submitted by Sir Alexander Gibb and Partners covered mainly the civil engineering aspect of the development of Mazagon Dock Ltd. It was evident from the report that the total cost estimated by them did not include the following items:—

- (a) the acquisition of land
- (b) the acquisition of shipbuilding machinery and equipment except some cranes

- (c) the cost of dredging required in front of the slipways in the South Yard prior to the launching of a vessel
- (d) the provision for power supply for the operation of shipbuilding machinery and equipment etc.

4.5. Not only no provision was made for the shipbuilding machinery and equipment and other facilities, but the scope of even the civil engineering works and crange was restricted in view of—

- (a) uncertainty of availability of the entire land then occupied by M/s. Mahindra and Mahindra.
- (b) inability to work out the optimum area required to accommodate the machinery and equipment, and crange to handle the ship units etc., as the details of the shipbuilding machinery and equipment etc., were not gone into by Sir Alexander Gibb and Partners.

4.6. On a detailed examination of the essential requirements for the frigate project, it became clear that the scope of the expansion scheme as envisaged by Sir Alexander Gibb and Partners would have to be substantially enlarged in order to ensure successful, economical and smooth implementation of the frigate project. Commensurate with technical necessity, economy and efficiency, it was found necessary to make a provision for certain items not included in the original scheme and enhance the scope of some items not adequately provided in Sir Alexander Gibb and Patners report.

4.7. The Company, therefore, drew up a revised Expansion Scheme which provided for creation of facilities on an enlarged scale at a total cost of about Rs. 716 lakhs with a foreign exchange content of Rs. 173.45 lakhs.

4.8. Consequent on the devaluation of the Indian Rupee in June, 1966, the foreign exchange outlay of the Expansion Scheme was reviewed and efforts were also made to reduce the foreign exchange requirements by resorting to indigenous substitution of equipment. The cost estimates of the Expansion Scheme were revised on this basis. The revised cost estimates came to about Rs. 802.03 lakhs, with a foreign exchange content of Rs. 188.45 lakhs against the previous estimate of Rs. 273.18 lakhs (after devaluation).

4.9. The scheduled dates of commissioning of the major units of the project as envisaged at the time of the commencement of the

expansion project and the actual dates of commissioning are given below:—

	Scheduled date	Actual date
<i>South Yard</i>		
(1) Slipway No. 1		March, 1965
(2) (a) Slipway No. 2	} January, 66	December, 1965.
(b) Associated Crane tracks, etc.		
(3) (a) Platers shops ready for installation of machinery	March, 66	December, 66
(b) Platers & Assembly shop	December, 1966	31st Jan. 1967
(c) G.A. Building & Stores	December, 66	February, 1968
<i>North Yard</i>		
Kasara Basin	August, 1968	December, 1968
Fitting on Board complex	April 68.	April/June, 68 progressively
<i>Dredging</i>		
Approaches Slipway	October, 68	October, 68
Main approach channel turning circle	August, 68-- end, 71 progressively	

4.10. All the facilities to be created under the Expansion Scheme had not been completed. The delay in completion of the Platers and Assembly Shop referred to at item 3 above was due to the fault of a contractor who was awarded contract for the civil works of these shops.

4.11. The progress of work by this contractor was very slow and a number of meetings were held at which the periodic progress of work was reviewed and the contractor was urged to improve his performance so that the works could be completed in time. On each occasion, the contractor promised to improve the performance, but every time he failed and ultimately the contract was terminated. The contractor obtained an injunction from a court and the legal proceedings started in the City Civil Court. The City Civil Court gave the verdict in favour of Mazagon Dock Ltd., but the contractor filed an appeal in the High Court, who also gave the verdict in favour of Mazagon Dock Ltd. Thereafter the contract was awarded to new contractors who completed the work expeditiously. In view of these circumstances, there was delay in

the completion of the civil works and also in the commissioning of the shop.

4.12. It had been stated that there was no loss to the Company on account of the termination of the contract as all additional costs were debited to the contractor's account. Apart from the bank guarantee of 10 per cent of the contract price (about Rs. 3.9 lakhs), the value of materials at site was about Rs. 1.55 lakhs; these two plus the unpaid bills more than covered the additional cost incurred by the Company.

4.13. The facilities envisaged in the Expansion Scheme were being progressively commissioned. As these facilities were part of an integrated project for shipbuilding and ship repair and each item of the project was connected with the other, it was too early to assess the financial working of the project until the entire scheme was completed and was fully operational.

4.14. The Expansion Scheme of the Company was divided into a number of contractors relating to separate items *e.g.*, slipway, shipbuilding berths, Platers and Assembly Shop, Kasara Basin, etc. The duration of most of these contracts was about one year, except the Kasara Basin the duration of which was 130 weeks. The progress of construction of these works was watched according to the schedule of completion of each contract rather than on the basis of percentage of construction each year. The original schedule date for completion of Kasara Basin was end of August, 1968; however, this work was substantially completed by the end of December, 1968. The main reason for delay was that after excavation work started, rock was found to be at a greater depth than originally envisaged, with the result that an additional work of about Rs. 30 lakhs was involved resulting in consequent delay in completion of the total works. The Production and Assembly Shop was fully operational in September, 1967, and the review of the utilisation of its capacity was proposed to be made on completion of one year of its working *i.e.*, in August, 1968.

4.15. The Expansion Scheme was expected to be substantially completed (about 95 per cent), excluding dredging of the channel, by April, 1969. The remaining 5 per cent finishing of work would be completed in another two to three months' time. Dredging of the channel would continue for another two years or so as scheduled.

4.16. In reply to a question, it had been stated that the firm—Sir Alexander Gibb and Partner at the time of selection by Mazagon Dock Ltd., were consultants for the Naval Dockyard Expansion

Scheme in Bombay. That being similar type of work, the task of preparing the project report was entrusted to Sir Alexander Gibb and Partners. However, before the work was actually undertaken tenders were called for and Sir Bruce White, Wolfe Barry and Partners were appointed as Consulting Engineers on the basis of their tender, to oversee the execution of the Expansion Plan. Sir Alexander Gibb and Partners were paid £2,000 for the preparation of the Project Report. For the detailed designs and drawings, Sir, Bruce White, Wolf Barry and Partners were being paid at the rate of $2\frac{1}{2}$ per cent to 3 per cent on a sliding scale for civil works and $1\frac{1}{4}$ per cent for plant and machinery.

4.17. The actual work on the scheme started in December, 1962, with the commencement of work for slipway No. 1 and associate crane tracks. The scope of the scheme had to be enlarged to cater to the needs of the frigate project. The Government of India entered into an agreement with Messrs Vickers Ltd., and Yarrow & Co., Ltd., for the construction of three frigates in December, 1964. The construction of the frigates was commenced in 1966. Therefore, the schedule of implementation of the various items of the Expansion Scheme was arranged in such a way as to dovetail with the frigate project as far as possible. On the date of signing the frigate agreement, work on slipway No. 1 and associated crane tracks was in an advanced stage of construction.

4.18. In reply to a question whether the Company was completely satisfied with the provisions made in the Expansion Scheme, Mazagon Dock Ltd., replied as follows:

“No. The project report submitted by Sir Alexander Gibb and Partners was later on modified and enlarged to cater for the construction of frigates. It may be noted that the report submitted by Sir Alexander Gibb and Partners did not provide for

- (i) Essential shipbuilding machinery
- (ii) Electrical services
- (iii) Other services, oxygen, acetylene, compressed air etc.
- (iv) Miscellaneous item”.

4.19. The Expansion Scheme did not include cost estimates of the acquisition of land, acquisition of shipbuilding machinery and equipment and cost of dredging slipways. These were excluded from the original plan as the type of the ships to be built was not known, at the time of taking up the Expansion Scheme either to

the Company or to the Consultants. Apart from this, the Consultants were principally a firm of consulting engineers for civil work and they did not take into account the shipbuilding machinery and equipment. The cost of acquisition of land was also dependent upon local conditions and was not known to the Consultants.

4.20. During the evidence of the representatives of Mazagon Dock Ltd., the Committee enquired the reasons for acceptance of the Detailed Project Report by the Company/Government in spite of certain vital details being not mentioned in the Detailed Project Report in respect of the Expansion Scheme, prepared by Sir Alexander Gibb and Partners. The Managing Director explained that in March, 1961, the Government of India asked Messrs Sir Alexander Gibb and Partners primarily to carry out a feasibility report, for the development of dockyard facilities; they had no knowledge of shipbuilding. He added that although the scheme was accepted for implementation, work on it in full swing, except on one slipway, was not commenced till the collaboration agreement for the frigates was finalised with Messrs Vickers' Ltd., and Yarrows and Co., in December, 1964. In between, negotiations were held by the Government with Sweden and the United Kingdom and along with this, the question of credit facilities was also linked up. The final project was in fact approved by the Board/Government in October/December, 1965, by which time the type of the ship to be constructed was known.

4.21. The Managing Director agreed that it was better and economical to take up the main expansion scheme soon after the type of ship had been decided.

4.22. The Committee are unable to appreciate the anxiety of Mazagon Dock Ltd., to appoint Sir Alexander Gibb and Partners in March, 1961, for preparation of a feasibility report for the Expansion Scheme of Mazagon Dock Ltd., without even knowing the type of ship that was to be built and the country from which the credit facilities would be forthcoming. It took the Government nearly three years to decide the ship and the source of credit and during this period except for one slipway, the work of construction was not taken up. Thus, Mazagon Dock Ltd., in no way gained by entering into an agreement with the said firm early. In fact, the report prepared by the firm had to be substantially revised subsequently, raising the cost of Expansion Scheme from Rs. 3.51 crores to Rs. 7.16 crores. The Committee are, therefore, of the view that the Expansion Scheme should have been undertaken only after all the requirements were known.

V.

GENERAL ENGINEERING WORKS

A. General Works

The primary object of the Company was to increase the ship-building and shiprepair capacity of the country in order to ensure that the requirements of the Indian Navy and the Indian Merchant Fleet for the new ships as well as repairs of existing fleet were met within the country. The Expansion Project of the Company has to a large extent concentrated on augmentation of capacity for this purpose. However, whenever, extra capacity in any shop was available the same was utilised for general engineering work.

5.2. In the past some capacity has been utilised for general engineering work. This work consisted of repairs to various types of machinery and equipment, castings, manufacture of burshane tanks, etc. Apart from this, the Yard was also manufacturing diesel engines of its own design the MAZDOCK Oil Engine. With the limited space available within the Yard, it was however, not possible for the Company to undertake any further programme of diversification of production. The Company had therefore no further plans for diversification at present.

5.3. It has been stated that the modernization of workshops and augmentation of facilities have resulted in an enormous increase in the engineering capacity of the Yard. The Company can undertake a variety of heavy engineering works such as manufacture of large pressure vessels, precision machining, radiograph quality welding, overhauling of steam, diesel and petrol engines, forging of single pieces weighing up to 3 tonnes, crankshaft repairing and regrinding, heavy turbine rotor and casing repairs, metal spraying and surface and internal grinding, ferrous and non-ferrous castings and rewinding of motors and generators. In 1967-68 the Company undertook the task of installation of equipment and machinery in the Plates and Assembly Shop of their South Yard.

5.4. The foundry of the Company was capable of undertaking quality grey iron castings up to 14-16 grade, and 6½ tonnes a-piece. A well-equipped metallurgical and chemical laboratory was maintained for the purpose of controlling and analysing the production. Non-ferrous castings of various types could also be undertaken. The

capacity for non-ferrous work in the foundry, was mainly absorbed by internal requirements. The melt in the cast iron section in November, 1968 was on an average 83.20 tonnes per month. There were some proposals to expand the foundry in stages, provided sufficient quantum of work was forthcoming.

5.5. The company has installed an annealing furnace which has a length of 7.92 m and breadth and height of 3.05 m. The temperature of the furnace was controlled from a nearby cabin. A recorder on the control board automatically recorded the temperature at various points in the furnace. The work in the annealing furnace has been profitable. The total earnings since installation about 3-1/2 years ago were in the region of Rs. 6.5 lakhs.

5.6. The Company has also undertaken the manufacture of one 80-ton fixed lift crane and one 15-ton level luffing crane in collaboration with M|s Kampnagel of West Germany. Negotiations were in progress with M|s Kampnagel for a long term and exclusive collaboration agreement for the manufacture of port, dock, shipbuilding and floating cranes of their design in the Bombay Yard. The two cranes, which are the largest of this type fabricated within the country, under construction would be utilised by the Company itself.

5.7. The Company can undertake the survey, testing, repair and recertification of marine inflatable life rafts. The work on repairs to marine inflatable life rafts was commenced in November, 1967. Till the end of November, 1968 it had serviced about 136 life rafts and the total value of work done was about Rs. 37,200.

5.8. Mazagon Dock Ltd. has also been appointed the authorised agents in Bombay for providing technical assistance, maintenance, spares and repair to Motor Fiat marine engines fitted in ships visiting Bombay. Negotiations are also in progress for the manufacture of some parts for these engines. No specific work had so far been undertaken in this line.

5.9. The value of general engineering works done by the Company since the take-over by Government was as follows:—

(Rs. in lakhs)

1960-61	44.69
1961-62	27.28
1962-63	33.44
1963-64	33.03
1964-65	45.08
1965-66	29.92
1966-67	32.33
1967-68	52.87

5.10. Mazagon Dock Ltd. introduced the system of preparation of budgets and review of performance against the targets in the budgets only from the year 1966-67. The budgeted amount under the head of 'General Engineering' for 1966-67 and 1967-68 along with the actual performance is given below:—

	(Rs. in lakhs)			
	1966-67		1967-68	
	Budgeted	Actuals	Budgeted	Actuals
General Engineering	32.33	32.33	48.25	52.87

5.11. It has been stated that for general engineering works, no market survey had been carried out, firstly because Mazagon Dock Ltd. did not manufacture any standard product and secondly they restricted general engineering work only to the extent of absorbing surplus capacity, if any, in the shops from primary activities viz. shipbuilding and shiprepairing.

5.12. With the implementation of the Expansion Scheme, increased engineering capacity had been created in the different shops. This capacity was primarily to meet the requirements of building frigates. The utilisation of the capacity would fluctuate. It has therefore been stated that it was not practicable to draw any hard and fast plans. As and when it would be foreseen that some spare capacity might be available, efforts would be made to utilise that by taking jobs on contract from other parties.

5.13. In reply to a question as to what would have been the loss of Mazagon Dock Ltd., had it not utilised its idle capacity/labour and what was the present loss/profit by utilising that capacity in general engineering works, it has been stated as follows:—

“The amount of loss that would have occurred if the idle capacity/labour had not been utilised cannot be assessed in very precise terms as the ship repair load on which the surplus labour/capacity depend is a fluctuating factor. Broadly, however, it could be stated that an average of about 300 permanent workmen would have remained idle for a period of five to six months every year had Mazagon Dock not utilised them on general engineering work and construction. This represents 10 to 15 per cent of the regular permanent strength employed in

Mazagon Dock and would, on a rough basis, mean idle labour amounting to Rs. 1 to 1.5 lakhs per month. The labour overheads, which also would have had to be incurred in any case, would have been of the order of another Rs. 5 to 7 lakhs. Thus, the total loss on account of non-utilisation of labour on general engineering works would have been of the order of Rs. 10 to Rs. 12 lakhs per annum.

The utilisation of idle capacity/labour on general engineering works has resulted not only in avoiding the loss which would have occurred as indicated above, but has actually resulted in some net profit. Although the amount of profit in general engineering work cannot be fully related to the utilisation of idle labour transferred from ship repair work, it could be broadly stated that but for such transfer, the profit earned by general engineering work, would have been less."

5.14. To an enquiry of the Committee, the Managing Director stated during evidence that in order to avoid loss on account of idle|spare capacity, shipyards all over the world took up various types of general engineering works, as workload in shipbuilding and shiprepairing always fluctuated. The Company undertook this work only to the extent that it did not interfere with its primary function and that 90 per cent of the work came from private parties.

5.15. The Committee find that it is normal all over the world for shipyards to undertake general engineering works. This not only provides utilisation of idle|spare capacity, but also yields a high margin of profit. The Committee would suggest that Mazagon Dock Ltd. should concentrate on those items of general engineering works which are ancillary to naval engineering or for which there is a scarcity of capacity in the country.

B. Mazdock Oil Engine

5.16. The Mazdock Oil Engine is being manufactured by the Company since 1950. The design was made available to the Yard by Messrs. Campbell Oil Engine Co. of the U.K. The manufacture of this engine has been one of the important general engineering works of Mazagon Dock Ltd.

5.17. The production of the engine in its present form 6 HP Vertical Oil Engine and certain other models of the horizontal engine, was undertaken in Mazagon Dock Ltd., in 1959, as a means to absorb the idle labour due to seasonal fluctuations in the ship-repair activity of the Yard. No specific market survey as such was done as the production of these engines was on a limited scale and the management felt that whatever engines were produced would be lifted. Subsequently, a market survey was carried out by an agent in 1967, who was later appointed as sole distributor for these engines. It was stated that the selling agent had an extensive network of sub-agents throughout the country and although he did not give the details of the extensive survey carried out by him, he was confident of good sales prospects namely an average of 75 engines per month in the first year and 100 per month in the second year.

5.18. It was noticed that the sale of these engines, in spite of promises by the selling agent, continued to be unsatisfactory, so much so that in June 1967, the Board of Directors decided that until there were clear prospects of sale of engines at a satisfactory rate, the production should be maintained at not more than 10 to 15 engines per month.

5.19. The number of engines in stock as on 31st March, 1968, was 368 valued at Rs. 8.28 lakhs. In addition, materials and components for the Mazdock Oil Engines in stock as on that date were valued at Rs. 8.48 lakhs. The actual number of engines sold during the last seven years is as given below:—

Year	No. of engines sold
1962-63	371
1963-64	466
1964-65	485
1965-66	176
1966-67	335
1967-68	58
1968-69	174

5.20. The agent was not only the sole distributor but also provided after sales services through his sales network. With the addition of the agency fees, sub-agency fees, overheads etc. the

market price (F.O.R.) of a Mazdock Oil Engine quoted by the agent varied from Rs. 2,925 to Rs. 3,150 in various States. It has also been stated that Mazagon Dock Ltd. has been and is making efforts to persuade the selling agent to decrease his margin of profit so that the engines could be sold out expeditiously. This might facilitate speedy sale of the present stock holding, including the materials and components.

5.21. It was mentioned that the production of this engine was not started as an independent business proposition but to absorb an otherwise idle capacity during the lean period of shiprepair work. Later as a result of the extensive market survey carried out by the selling agent it was considered that this would be a profitable venture.

5.22. The cost of the engine has been stated to be more than the selling price prior to 1965 due to (i) fluctuating manufacturing programme in the shop, which was dependent on the order position and (ii) higher internal costs of manufactured items on account of higher wage structure.

5.23. The Committee enquired the reasons for the demand not catching up with the supply of these engines. Mazagon Dock Ltd. stated as follows:—

“The main reason is that large manufacturing concerns such as Kirloskars, Rustons, Coopers, Listers etc., who produce diesel engines on a mass scale have established themselves in the market and it is not easy for others to make a break-through. Moreover, because of the mass production and comparatively lower wages, their production cost per unit is low. They have also their own sales organisations.

A number of small manufacturers have also come up in low wage areas on the lines of small scale industries and co-operative societies. Because of low wages and low overheads, their overall prices are much lower.”

5.24. It has also been stated that during 1967, there was a general recession in the oil engine trade and all engine manufacturers were known to have suffered difficulties in marketing their products. There was now evidence to show that in 1968 the sales of these engines picked up and other small manufacturers in the private sector did not seem to have difficulty in this regard.

5.25. The Managing Director stated during evidence that they had 214 engines in stock and that they had an assurance from their selling agent that these engines would be sold. He also informed the Committee that Mazdock Oil Engine needed a small strength of staff and it was an entirely independent line of manufacture, which did not interfere with the main work. It would be more profitable if the offtake was greater.

5.26. The Committee are of the view that production of a simple oil engine does not seem to be in line with the overall pattern of production of sophisticated warships. The cost of production of the oil engine was higher than those produced elsewhere in the country, stocks had accumulated and the chances of selling them were also not bright. The Committee find that the shipbuilding activity of the Company has increased considerably with the result that idle capacity has become negligible. The management of the Company was already thinking in terms of closing down this line of manufacture. The Committee feel that this is a step in the right direction and the sooner it was closed the better, so that full efforts of Mazagon Dock Ltd. could be concentrated on its main activity of shipbuilding and shiprepair.

VI

FINANCIAL MATTERS

A. Financial Position

6.1. The comparative financial position of the Company for three years in a summarised form is as given below:

(Rs. in lakhs)

	1965-66	1966-67	1967-68
1. Share capital	168.00	268.00	300.00
2. Loans from Government	139.00	236.00	453.00
3. Reserves	45.25	55.07	80.42
4. Production Shiprepair	250.92	311.17	358.94
New Construction	110.07	157.77	281.03
General Engineering and Miscellaneous work	29.92	32.33	52.87
	390.91	501.27	692.84
5. Interest	7.09	11.83	20.15
6. Provision for Taxation	9.75	7.31	
7. Net Profit	8.23	17.59	40.71
8. Working Capital	261.49	298.53	330.90
9. Payment to employees	184.83	234.51	290.78
10. Bonus	6.28	11.17	14.24
11. Development Rebate Reserve	1.63	7.23	39.45
12. Depreciation	7.38	3.50	13.91
13. Dividend	5.82	9.93	14.33

B. Working Results

6.2 The working results of the Company for three years are tabulated below:

	(Rs. in lakhs)		
	1965-66	1966-67	1967-68
(1) Profit before tax	17.98	24.90	40.71
(2) Tax provision	9.75	7.31	..
(3) Profit after tax	8.23	17.59	40.71
I. Percentage of profit before tax			
(a) To sales	4.3	4.6	8.9
(b) To gross fixed assets	11.3	10.7	8.4
(c) To capital employed	5.3	5.6	5.6
II. Percentage of profit after tax			
(a) To net worth	3.9	5.4	10.7
(b) To equity capital	4.9	6.6	13.6
(c) To capital employed	2.4	3.9	5.6
III. The debt-equity ratio for the Company was			
0.83	:	I in 1965-66	
0.88	:	I in 1966-67	
1.5	:	I in 1967-68	

C. Sundry Debtors

6.3. The following table indicates the value of book debts and sales for five years:

	Total book debts		Sales	% of debtors to Sales
	Considered good	Considered doubtful	(Rs. in lakhs)	
31st March, 1964	147.62	0.19	448.69	32.9
31st March, 1965	128.41	0.19	408.33	31.5
31st March, 1966	196.71	0.19	416.75	47.2
31st March, 1967	271.93	..	537.37	50.6
31st March, 1968	269.89	..	458.39	58.9

6.4. The sundry debtors represented about 4 months' turnover in 1963-64 and 1964-65, 5.7 months' turnover in 1965-66, 6.1 months' turnover in 1966-67 and 7 months turnover in 1967-68.

6.5. It has been stated that as against a sum of Rs. 271.93 lakhs outstanding as on the 31st March, 1967, the Company had been able to collect a sum of Rs. 229.51 lakhs as on the 1st December, 1968 and only a sum of Rs. 42.42 lakhs remained to be collected.

6.6. Similarly book debts as on the 31st March, 1968 amount to Rs. 269.89 lakhs. Out of this amount, a sum of Rs. 189.75 lakhs had been realised. The balance outstanding as on the 1st December, 1968 was Rs. 80.14 lakhs.

6.7. It has been stated that Mazagon Dock Ltd. allowed a credit period of normally 30 days from the date of presentation of bills. However, in respect of regular customers they had been forced to make exceptions from time to time. The debts outstanding beyond this customary period as on the 30th November, 1968 were as below:

	(Rs. in lakhs)
Indian Navy	17.00
Other Government Departments	14.75
Public Undertakings	8.83
Foreign Parties	45.81
Other Indian companies	34.81
TOTAL	<u>121.20</u>

6.8. In reply to a question it was stated that Mazagon Dock Ltd. had not yet been successful in charging penal interest. Constant follow-up action to recover the dues was taken and in cases where the debtors became difficult and did not pay up, legal action had been taken. In some cases ships had been arrested and amounts duly realised.

6.9. During the course of evidence, the Committee pointed out that a sum of Rs. 45.81 lakhs was outstanding against foreign parties out of a total of Rs. 121.20 lakhs. The Managing Director explained that this problem was not peculiar to Mazagon Dock Ltd. only but was also being faced by other yards. He stated that they were able to realise the dues more reasonably and quickly through Government organisations.

6.10. The Committee regret to note that the ratio of sundry debtors to the sales had been constantly increasing since 1964-65. The huge outstandings increase the working capital requirements and reduce the profitability of Mazagon Dock Ltd. The Committee, therefore suggest that vigorous steps should be taken to realise the outstandings within the credit period. If it is not found practicable to levy penal interest on delayed payments, the Management may consider offering some discount for prompt payment of bills.

D. Payments from the Navy

6.11. A review of the outstanding bills as on 31st July 1966 for repair of ships showed that an amount of Rs. 40.21 lakhs pertaining to works executed during the period from 1961-62 to 1965-66 was outstanding against the Navy, out of which Rs. 9.57 lakhs pertained to works executed before April 1963. The bills were pending because of non-finalisation of contracts and non-completion of check by the Controller of Defence Accounts (Navy).

6.12. It has been stated by the Ministry of Defence that the major portion of outstandings related to work done in excess of Government sanction on authorisation by the Naval authorities and a considerable amount was outstanding on account of objections raised by cost audit on issues like rebate, scrap value, basis for pricing of material, etc. and the procedure followed for sub-contract work.

6.13. The year-wise break-up of the total amount outstanding against the Navy as on 30th November, 1968 is as below:

1960-61	Rs. 0.60 lakhs
1963-64	Rs. 0.60 lakhs
1965-66	Rs. 1.36 lakhs
1966-67	Rs. 2.13 lakhs
1967-68	Rs. 12.31 lakhs
TOTAL	<u>Rs. 17.00 lakhs</u>

6.14. In a written note submitted by the Ministry of Defence, after the evidence, it has been stated as follows:

"Of the sum of Rs. 17.00 lakhs mentioned above, an amount of Rs. 9.3 lakhs is on account of escalation claimed in respect of the dredger, Nikarshaka. The balance of Rs. 7.7 lakhs represents the last 2½ per cent which is payable

under the ship repair contracts after completion of the cost audit. The institution of cost audit, however, was delayed partly because of certain terms in the ship repair contract which were to govern all these cases and which were finally settled about 2 years ago. It may also be mentioned that of the total claim of Rs. 17 lakhs, an amount of about Rs. 7 lakhs may have to be adjusted ultimately against counter claims of the Navy against Mazagon Dock Ltd. The position which now obtains after the procedures have been spelt out is a substantial improvement on the situation which used to obtain in the past when claims to the extent of about Rs. 100 lakhs were outstanding.

No period for the completion of cost audit by the Controller of Defence Accounts (Navy) has been prescribed for the payment of the last 2½ per cent of the contract price. It is hoped that now after the agreement on the standard contract, the problem of outstandings from naval ship-repair work will not be of any objectionable magnitude specially in relation to the value of work done."

6.15. It has been further stated that the forms of Naval Ship Repair and New Construction Contracts had been finalised in which procedures had been laid down to ensure speedy payments. In so far as ship repair work was concerned, payments would be made as follows:

92½ per cent on presentation of bills.

5 per cent on completion of job analysis by the Senior Officer Workshop Team (in the Yard).

2½ per cent on cost audit by Controller of Defence Accounts (Navy).

6.16. As regards new construction, stage payments have been provided in the standard contract, such as laying of the keel, launching etc. as indicated below:

5 per cent on placing of order.

15 per cent on allocation of steel.

15 per cent on laying of keel.

15 per cent on fabrication of 40 per cent of hull.

20 per cent on launching of vessel.

15 per cent on trials and handing over.

6.17. However, in case of the frigate, Mazagon Dock Ltd. was earlier reimbursed on the basis of estimates of expenditure to be incurred by it during the ensuing quarter. This had subsequently been further improved by the grant of an imprest of Rs. 20 lakhs recoupable against actual expenditure.

6.18. During evidence, the Defence Secretary admitted that their procedure for inspection, passing the bills and making payments was somewhat cumbersome, specially with reference to repair bills. He however stated that they had persuaded the Ministry of Finance to have a proper repair contract and the terms had been settled to streamline the system. He also informed the Committee that a statement of pending bills was put up to the Board of Directors regularly with a view to check that the bills were not held up only due to procedure.

6.19. Mazagon Dock Ltd. is primarily meant for service of the Navy and as such any delay on the part of the Navy in respect of payments adversely affects the efficient and economic functioning of the Yard. The Committee recommend that this matter may be considered at the highest level by the Defence Ministry and it should be ensured that the past dues of Mazagon Dock Ltd. are cleared by the Naval authorities without delay. They hope that with the introduction of the new procedure, there will be no outstandings against the Navy in future beyond the agreed dates of credit.

VII

MISCELLANEOUS

A. Ancillary Industries

Shipbuilding was regarded as an assembly industry and it had to depend upon the products of ancillary industries for many components such as steel plates, marine engines and engine room auxiliaries, deck auxiliaries, hull fittings, electrical fittings and instruments, navigation instruments, sanitary appliances, fire fighting equipment and scores of other items. While attempts were being made for the indigenous manufacture of these by encouraging the establishment of ancillary industries, many difficulties were being experienced in this respect. One of them being low demand, which restricted the output and pushed up the cost. It was, however, necessary to ensure regular and timely supply of these items at reasonably competitive rates.

7.2. Mazagon Dock Ltd. stated that on receipt of an order for a ship, a list comprising of hull equipment, machinery and electric items was prepared by the Company and submitted to DGTD for clearance from the indigenous angle. Only such of those items which were not manufactured within the country were cleared and allowed to be imported, and that the Company was constantly endeavouring to substitute indigenous spares and components in consultation with the manufacturers. There was a Ship Ancillary Industries Committee for the development of marine ancillary industries in India set up by the Ministry of Shipping & Transport. As recommended by this Committee, a Development Cell of Hindustan Shipyard Ltd., Garden Reach Workshops Ltd. and Mazagon Dock Ltd. had been set up at Calcutta. The function of this Cell was to codify and categorise the various items of marine ancillary industries and to lay down priorities for indigenous production thereof. It would help in the development of the indigenous marine ancillary industries by providing detailed technical data including drawings and specifications to the industry.

7.3. It was further stated that the Department of Defence Production, Ministry of Defence also encouraged the development of such ancillary items of equipment which were required for the construction of frigates and other Naval Ships. During the last two years

the Department had succeeded in bringing about a number of collaboration agreements between foreign firms and indigenous manufacturers for the manufacture of frigate equipment such as main and auxiliary switch-boards, main turbines, main gearing, auxiliary machinery, etc.

7.4. While discussing this point during evidence, the Managing Director, Mazagon Dock Ltd. drew attention of the Committee to the work being done by the Steering Committee and the Study Group for indigenisation. He stated that Mazagon Dock Ltd. was also in constant touch with the local manufacturers in this connection. The Development Cell at Calcutta also looked after this work. He informed the Committee that the twenty fishing trawlers were completely indigenous, except for the fish finding equipment.

7.5. The Defence Secretary stated during evidence that the Committee set up by the Ministry of Shipping and Transport for ancillary industries encouraged import substitution. He was, however, personally not satisfied with the progress made in import substitution on the shipbuilding side so far. The frigates had given a good motivation to import substitution. He further added that a Study Group was set up in April 1965 and another Steering Committee with the Chief of Naval Staff as the Chairman, was set up in August 1966 for the purpose of taking decisions on various matters of import substitution and of introduction of Indian equipment. He also stated that the Ministry had many a time helped Indian firms to get in touch with corresponding foreign firms and in striking a good bargain, including collaboration, where necessary.

7.6. The Committee note that the main stumbling block in the way of satisfactory development of ship ancillary industries are the low offtake of such equipment and rigid standards laid down for marine purposes. The Committee hope that with the establishment of the second shipyard at Cochin and the expansion programmes in the Hindustan Shipyard Ltd., Mazagon Dock Ltd. and Garden Reach Workshops Ltd., this problem of low offtake would be resolved and manufacture of marine ancillary items would become a viable proposition.

B. Steel Requirements

7.7. The steel requirements of Mazagon Dock Ltd. could be classified into special steel requirements for the frigate programme and the general steel requirements for other ships and ship repair work.

7.8. For the frigates, the requirement of steel falls under the following categories :

- (a) Mild Steel Plates
- (b) 'B' quality Steel Plates
- (c) Mild Steel Sections
- (d) 'B' Quality Steel Sections

7.9. The Steel Plates and Sections are required in various thicknesses and sizes and each type in different quantities. ('B' quality steel is alloy steel which has certain special properties of impact resistance at very low temperatures).

7.10. The Ministry stated that the requirements of each type of steel sections were insufficient to sustain an economic rolling programme. Even the mild steel plates and 'B' quality steel plates of the specifications required were not being manufactured by steel mills in India in December, 1964 when the frigate agreement was signed. As a result of the efforts made, in the case of the first frigate, all the mild steel plates, which constituted 65 per cent of the total steel plates, were rolled in India and the balance were imported. In respect of the second and third frigates, 95 per cent of the mild and 'B' quality steel plates would be rolled in India.

7.11. For the general steel requirements it was stated that, the Company placed demand on the Joint Plant Committee direct.

7.12. During the course of the evidence the Managing Director informed the Committee that Mazagon Dock Ltd. was meeting 70 per cent of steel requirements indigenously. At present the Shipbuilding and Shiprepairing Division of the Indian Engineering Association was coordinating the demands of all the shipyards and projecting them to the Joint Plant Committee at Calcutta, which enabled the steel mills to formulate their rolling steel programme.

7.13. The Committee are happy to note the efforts being made in this direction by the Company/Government. They suggest that a long term planning should be done in this regard by all the shipyards in the country so that the Indian steel plants could be informed in advance so as to enable them to meet the requirements of steel in full.

C. Design Organisation

7.14. The design organisation of the Company comprised the

following sections, which were under the overall charge of the Design Manager:—

(a) Merchant Ship Drawing Office

This office prepared designs of Hull, Machinery and Electrical drawings for ships, cargo ships, tankers, dredgers, ferries, launches, barges, trawlers, coasters, lighters and other specialised craft.

A separate section in this office comprised of estimators. The estimators worked in conjunction with the drawing office and prepared estimates and quotations for all the new constructions, ship repairs and commercial engineering items.

(b) The Optical Loft Drawing Office

The draftsmen here reduced various drawings to one tenth scale which were photographed to produce negatives to a scale of one-hundredth. These negatives were sent to the optical tower located in the prefabrication shops and projected to hundred times magnification on steel plates for marking out. The optical marking camera and projector were of German origin.

(c) The Frigate Section

This section processed drawings and information about the frigate received from the collaborators for use in shops. The material schedules for the various Hull, Machinery and Electrical items were also prepared by this section.

(d) Expansion Scheme Section

This section processed drawings and information for the Expansion Scheme received from the Consulting Engineers for the use of various sub-contractors and was a temporary feature for the period of the Expansion Project.

(e) Radiography and Photography Section

In addition to non-destructive testing, this section also carried out general photography in the yard, photography of drawings and preparation of negatives for projection in the optical loft.

The total strength of the Design Organisation was about 80 persons.

7.15. The Committee were informed during evidence that Mazagon Dock Ltd. did not possess workers with two important skills necessary for the construction of warships, viz., Weapons and Elec-

tronics. Recruitment and training was, therefore, undertaken to make good this deficiency and this included deputation of some personnel to the United Kingdom for training.

7.16. In reply to a query whether Mazagon Dock Ltd. was dependent upon the Navy for research, development and design, the Managing Director informed the Committee that in most of the Navies of the world basically the design was done by the Navy. The normal practice was that the Navy had their own organisation, which generally laid down the broad parameters and requirements for a ship. According to the Managing Director it was not possible for an individual yard to do pure research in this field. In fact in Holland all the shipyards had combined together and set up a research organisation. In Mazagon Dock Research & Design Organisation, the Managing Director stated, they had made designs of fishing trawlers and of two passenger ships of 15,000 and 11,000 DWT.

7.17. To another enquiry whether Mazagon Dock Ltd. had gathered sufficient expertise to independently take up the designing and development of a vessel suitable to the needs of either the Indian Navy or the Shipping Corporation of India, the Managing Director replied in affirmative and stated that the designs of ships meant for the S.C.I. had been tried, tested and vetted by Lloyds and found satisfactory. For the Navy they wanted to build a ship as indigenous as could be possible, depending upon the requirements and strategy.

7.18. The Defence Secretary also informed the Committee during evidence that their interest was largely on design of naval vessels. In September, 1964 a design organisation was sanctioned in the Navy. That organisation was working on various designs, but they had not yet done any complicated job and that organisation was expected to expand in stages during the next three or four years.

7.19. He further stated that Mazagon Dock Ltd. had a drawing office which had designed 'State of Madras' 'State of Bombay' and fishing trawlers in collaboration with AFCO. The Design Office was also being expanded.

7.20. Besides, the Defence Secretary stated, there was an establishment in Bombay Naval Dockyard which dealt largely with the corrosive effects of sea-water on ships. There is also laboratory in Cochin and one is being set up in Visakhapatnam.

7.21. The Committee were also informed that the Ministry of Shipping & Transport did not have any design organisation of their

own though they did encourage other people. For ancillary industries, that Ministry had set up a Development Cell in Calcutta to which Mazagon Dock Ltd. and Garden Reach Workshops Ltd. contributed Rs. 50,000 each.

7.22. The Committee are conscious of the fact that shipbuilding industry is a highly specialised industry and techniques thereof are constantly advancing through research. It is, therefore, essential to keep abreast of the developments in the technical and economic fields in foreign countries. The Committee, feel that it would be desirable to build up a well equipped Research and Development Organisation which is vital to national welfare and security. The Government of India should take up this responsibility by offering substantial help in this direction. It should not only study the economics of different operations in the public sector shipyards with a view to minimising the costs and maximising utilisation of capacity but also undertake basic research in order to achieve technological advancement in the shipbuilding industry.

D. Coordination

7.23. At present the following Public Undertakings in India are engaged in shipbuilding and ship-repairing industry.

- | | | |
|--|---|---|
| 1. Hindustan Shipyard Ltd.
Visakhapatnam | . | Cargo freighters of 12,300 ton dwt. capacity. |
| 2. Mazagon Dock Ltd. Bombay | . | Frigates, passenger ships of 15,000 ton dwt. cargo freighters, dredgers tugs, trawlers and other craft. |
| 3. Garden Reach Workshops Ltd.
Calcutta. | . | Coasters, dredgers, tugs, trawlers and other craft. |
| 4. Central Inland Water
Transport Corporation | . | Tugs, trawlers, barges and other craft. |
| 5. Goa Shipyard Goa | . | —do— |

Another shipyard is in the offing at Cochin.

7.24. It will be seen from the above that in respect of large ocean-going vessels, capacity is available for the construction of these vessels in the two undertakings—Hindustan Shipyard Ltd., and Mazagon Dock Ltd. The Cochin Shipyard will perhaps build bigger ships. As regards smaller vessels like dredgers, tugs, trawlers etc. four undertakings—Mazagon Dock Ltd., Garden Reach Workshops Ltd., Central Inland Water Transport and Goa Shipyard, were on the job.

7.25. During the course of evidence, the Committee enquired from the Secretary, Ministry of Defence as to how coordination was ensured between the three shipyards under his Ministry's control so as to avoid overlapping of work and competition. The Defence Secretary stated that the Ministry had not issued any directive under the Articles of Association in this regard to the three shipyards under its control—Mazagon Dock Ltd., Garden Reach Workshops Ltd., and Goa Shipyard Ltd. The capacity of each yard was specific and different work was allotted to each according to its capacity. In case of Garden Reach Workshops Ltd. and Mazagon Dock Ltd., however there was overlapping in respect of capacity—both of them could refit any of the naval ships, do repair to merchant ships and construct small vessels. There was often competition between the two yards, which was a healthy feature.

7.26. The Defence Secretary was also of the view that till all the yards had developed fully, it would not be worthwhile to consider their amalgamation nor would it be advisable to bring all the Yards in India under the administrative control of one Ministry. He was of the opinion that while they were being developed, they must remain independent of each other for supervision and control and in competition with each other.

7.27. The Committee also enquired whether there was any regular agency to coordinate the information or experience of the different units to each other. The Managing Director stated that among the different Indian Shipyards themselves, the coordination and exchange of information was at the present only at the level of common Directors at the Board-level and that there was no specific coordination cell.

7.28. The Committee understand that the trend in some of the maritime countries is towards closure of smaller yards and amalgamation of bigger units. They, therefore feel concerned about the absence of any regular coordinating machinery among the different yards in India. In a highly sophisticated and fast developing industry like shipbuilding, a close link and a common approach to the problems facing the industry is necessary. The Committee feel that effective coordination in all fields of activity cannot be achieved only through one or two common Directors. They would, therefore recommend that the Government may examine the desirability of setting up a joint machinery to achieve effective coordination among the activities of the shipyards in the country and look after the interests of the industry as a whole.

7.29. The Committee would further recommend that technical personnel from one yard might be sent to another, for a short period, for in-yard training and observations. They should on return to their parent company submit reports about their observations and experience gained. This exercise may be carried on till a joint co-ordinating machinery is set up.

G. S. DHILON,

Chairman,

Committee on Public Undertakings.

NEW DELHI;

April 11, 1969.

Chaitra 21, 1891 (S).

APPENDIX

Summary of Conclusions Recommendations of the Committee on Public Undertakings contained in the Report

S. No.	Reference to p. r. N. in the Report	Summary of Conclusions/Recommendations
(1)	(2)	(3)
1	2'13	The Committee find that till recently Mazagon Dock Ltd. had been proceeding in an ad hoc manner with frequent short run and uncertain orders. It started projecting firm plans in terms of money only from the year 1966-67. The Committee are unable to understand why it was not possible for it to prepare targets for new construction even in terms of money prior to 1966-67. Proper planning in a phased manner is essential for making best use of men and resources and as a check or control device on operations so that timely corrective action could be taken where results did not work out according to plans and forecasts. The Committee hope that with the completion of the Expansion Scheme Mazagon Dock Ltd. will work out yearly as is being done now as well as long range production schedules.
2	2'25	The Committee are happy to note that the first frigate was launched on the due date. This is no doubt a major break-through in the Indian shipbuilding industry, and the Committee hope that the Mazagon Dock Ltd. will endeavour to further improve its performance with experience. The efforts being made towards indigenisation of the frigates are laudable, and the Committee expect these efforts will be intensified to bring about further reduction in the imported components.
3	2'35	The Committee are not aware of the reasons on account of which the Government had not treated the construction of minesweepers in the country for the first time as a development order. They, however, feel that factors which have resulted in this huge loss were beyond the control of the present management. If Maza-

(1)	(2)	(3)
		gon Dock Ltd. was expected to work as a commercial undertaking, the Committee hope that in future Government would ensure that financial risks involved in underatking new items would be fully covered, particularly when specific orders are to be executed in accordance with the desire of the Navy.
4	2·43	Although in bulk of cases where losses had been incurred on account of building ships, the estimates had been formulated in the pre-take over period or in the period immediately after the take-over, the Committee are unhappy to note that even at present some of the orders for new construction are expected to result in losses to the Company. This indicates that all the factors contributing to the cost of construction of a vessel are not being accurately assessed. The Committee trust that with the introduction of the new system of data compilation and estimating, the Company would show better results.
5	2·46	The Committee note that the quantum of work available with Mazagon Dock Ltd. is not enough to keep it fully engaged and it desires to work on commercial lines so as to secure orders from shipping companies. The Committee feel that as there is ample scope for expansion of shipping in the country Mazagon Dock Ltd. could play a useful role in that direction. They would, however, like to stress that the ships to be built by it should be fully competitive in price, quality and performance so as to win customers through competitive rates.
6	2·47	The Committee are given to understand that ships are being offered by leading maritime countries on very attractive terms and conditions. The Committee suggest that in the interest of developing the infant ship building industry in the country, Government may consider how best the Indian ship builders could be placed in a position to offer equally attractive terms and conditions so that the Indian shipping lines are induced to purchase their ships from indigenous shipyards. At present 90 per cent of the ships brought under Indian flag are being purchased from abroad. The Government should help the Indian ship builders and Mazagon Dock Limited in particular to expand their building activities so as to build more ships and where possible,

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bigger ones. This will result in double benefit. On the one hand it will save foreign exchange which would have gone to a foreign builder of ships and on the other it will benefit the infant home industry which will be able to grow and give more employment.

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|---|----------------|--|
| 7 | 3 10 | <p>The Committee note that the available capacity of ship repairing work which had fallen to Rs. 250 lakhs in 1965-66 has risen to over Rs. 358 lakhs in 1967-68. The Committee are, however, constrained to note that there has been some decline in the quantum of repair work since December, 1968. The Committee would like Government and Mazagon Dock Ltd. to look into the matter urgently and initiate remedial measures to check the downward trend. In this connection, the Committee noted that while the Mazagon Dock Ltd. has regular agreements for shiprepairing work with B.I. & P.O. Group and Mogul Line Ships, it does not have such formal agreements with Shipping Corporation of India and the Jayanti Shipping Company. The Committee consider that as the latter are leading shipping companies in India, Mazagon Dock Ltd. should endeavour to enter into regular agreements with them for repair of their ships. Suitable measures may also be taken by Government to induce ships registered in India to get their periodical repairs done by the Indian shipyards.</p> |
| 8 | 3 11 | <p>The Committee need hardly point out that if Mazagon Dock Ltd. desires to retain its position as the premier ship repairing yard it must make its rates, quality and time schedules for execution of works fully competitive with the facilities available east of the Suez. The Committee would like Government and the Mazagon Dock to pay special attention to this aspect of operations so as not only to save foreign exchange by undertaking repairs to ships within the country but also to earn more foreign exchange by undertakings the repairs to foreign ships which come in such large numbers to India.</p> |
| 9 | 3 17 &
3 18 | <p>The Committee understand that the system of estimating and costing in Mazagon Dock Ltd. has since been streamlined. As in repair work time is of vital importance, it is necessary not only to prepare accurate estimates but also to record the cost of each job promptly and correctly so that complete and final bills can be given to the clients immediately.</p> |

(1)	(2)	(3)
		The Committee would suggest that every case of defective estimating or loss should be examined by the Management expeditiously and suitable instructions issued with a view to avoiding its repetition.
10	3·24	In the absence of detailed information about the rates charged by the shipyards abroad, it is difficult to judge the price structure of ship repairing jobs of Mazagon Dock Ltd. The Committee, however, find that the Management is itself conscious of the need for reducing the cost of ship repairing work. They hope that efforts in this direction will be continued, for if Mazagon Dock Ltd. has to create even a better image of itself in the world shipping industry, any impression of the costs of repairs, being high—created rightly or wrongly—has to be earned through proper publicity of its costs of repairs.
11	3·27	The Committee are happy to note that cases requiring redoing of jobs are within reasonable limits in Mazagon Dock Ltd. They hope that greater quality control would be exercised over the repair jobs so that such complaints are further minimised.
12	3·30	The Committee feel that lack of proper co-ordination between various departments of the shipyard had in the past resulted in loss of time, increased costs and dissatisfaction of the customer. The Committee trust that with the establishment of the Planning and Production Department complete co-ordination and supervision in all respects will be maintained.
13	422	The Committee are unable to appreciate the anxiety of Mazagon Dock Ltd. to appoint Sir Alexander Gibb and Partners in March, 1961, for preparation of a feasibility report for the Expansion Scheme of Mazagon Dock Ltd. without even knowing the type of ship that was to be built and the country from which the credit facilities would be forthcoming. It took the Government nearly three years to decide the ship and the source of credit and during this period except for one slipway, the work of construction was not taken up. Thus, Mazagon Dock Ltd. in no way gained by entering into an agreement with the said firm early. In fact, the report prepared by the firm had to be substantially revised subsequently, raising cost of Expansion Scheme from Rs. 3.51 crores to Rs. 7.16 crores. The Committee are, therefore, of the view that the Expansion Scheme should have been undertaken only after all the requirements were known.

(1)	(2)	(3)
14	5 15	<p>The Committee find that it is normal all over the world for shipyards to undertake general engineering works. This not only provides utilisation of idle/spare capacity, but also yields a high margin of profit. The Committee would suggest that Mazagon Dock Ltd. should concentrate on those items of general engineering works which are ancillary to naval engineering or for which there is a scarcity of capacity in the country.</p>
15	5 26	<p>The Committee are of the view that production of a simple oil engine does not seem to be in line with the overall pattern of production of sophisticated warships. The cost of production of the oil engine was higher than those produced elsewhere in the country, stocks had accumulated and the chances of selling them were also not bright. The Committee find that the shipbuilding activity of the Company has increased considerably with the result that idle capacity has become negligible. The management of the Company was already thinking in terms of closing down this line of manufacture. The Committee feel that this is a step in the right direction and the sooner it was closed the better, so that full efforts of Mazagon Dock Ltd. could be concentrated on its main activity of shipbuilding and shiprepair.</p>
16	6 10	<p>The Committee regret to note that the ratio of sundry debtors to the sales had been constantly increasing since 1964-65. The huge outstandings increase the working capital requirements and reduce the profitability of Mazagon Dock Ltd. The Committee, therefore suggest that vigorous steps should be taken to realise the outstandings within the credit period. If it is not found practicable to levy penal interest on delayed payments, the Management may consider offering some discount for prompt payment of bills.</p>
17	6 19	<p>Mazagon Dock Ltd. is primarily meant for service of the Navy and as such any delay on the part of the Navy in respect of payments adversely affects the efficient and economic functioning of the Yard. The Committee recommend that this matter may be considered at the highest level by the Defence Ministry and it should be ensured that the past dues of Mazagon Dock Ltd.</p>

(1)	(2)	(3)
		are cleared by the Naval authorities without delay. They hope that with the introduction of the new procedure, there will be no outstandings against the Navy in future beyond the agreed dates of credit.
18	7.6	The Committee note that the main stumbling block in the way of satisfactory development of ship ancillary industries are the low offtake of such equipment and rigid standards laid down for marine purposes. The Committee hope that with the establishment of the second shipyard at Cochin and the expansion programmes in the Hindustan Shipyard Ltd., Mazagon Dock Ltd. and Garden Reach Workshops Ltd., this problem of low offtake would be resolved and manufacture of marine ancillary items would become a viable proposition.
91	7.13	The Committee are happy to note the efforts being made in procuring the steel requirements by the Company/Government. They suggest that a long term planning should be done in this regard by all the shipyards in the country so that the Indian steel plants could be informed in advance so as to enable them to meet the requirements of steel in full.
20	7.22	The Committee are conscious of the fact that shipbuilding industry is a highly specialised industry and techniques thereof are constantly advancing through research. It is, therefore, essential to keep abreast of the developments in the technical and economic fields in foreign countries. The Committee feel that it would be desirable to build up a well equipped Research and Development Organisation which is vital to national welfare and security. The Government of India should take up this responsibility by offering substantial help in this direction. It should not only study the economics of different operations in the public sector shipyards with a view to minimising the costs and maximising utilisation of capacity but also undertake basic research in order to achieve technological advancement in the shipbuilding industry.
21	7.28	The Committee understand that the trend in some of the maritime countries is towards closure of smaller yards and amalgamation of bigger units. They, therefore feel concerned about the absence of any regular co-ordinating machinery among the different yards in India. In a highly

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sophisticated and fast developing industry like shipbuilding, a close link and a common approach to the problems facing the industry is necessary. The Committee feel that effective co-ordination in all fields of activity cannot be achieved only through one or two common Directors. They would, therefore recommend that the Government may examine the desirability of setting up a joint machinery to achieve effective co-ordination among the activities of the ship-yards in the country and look after the interests of the industry as a whole.

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7.29

The Committee would further recommend that technical personnel from one yard might be sent to another, for a short period, for in-yard training and observations. They should on return to their parent company submit reports about their observations and experience gained. This exercise may be carried on till a joint co-ordinating machinery is set up.

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			66		59

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