

MINISTRY OF SHIPPING

CHAPTER : XII

Dredging Corporation of India Limited

Dredge Repairs

Highlights

The Company had spent Rs.374.42 crore towards repair and maintenance of its Dredgers, which constituted 34 per cent of the total operating expenditure.

(Para 12.1)

Delay in dry-docking beyond the prescribed period of 18 months led to decline in dredging production of 35.58 lakh M³.

(Para 12.3.1)

Delay in obtaining statutory clearances for establishing the sea-worthiness of the vessels led to idling of the dredgers and increased repair time resulting in loss of revenue of Rs.7.12 crore.

(Para 12. 3.3)

Cost overrun compared to the contracted cost ranged from 21 to 91 per cent involving an additional expenditure of Rs.13.13 crore in nine dry-docks.

(Para 12.4.1)

Time over run compared to the agreed time ranged between 17 to 75 days with a variation of 51 to 183 per cent in respect of 17 cases of regular dry-docks. Because of this delay the Company suffered loss of revenue of Rs.14.40 crore in 13 cases after adjusting Rs.9.30 crore recovered towards liquidated damages from the repair firms.

(Para 12.4.2)

The Company lacked ability to prepare cost estimates for dry-dock package in house. It relied on the tariff information obtained from local shipyard at Visakhapatnam though it was in the business for the last 28 years.

(Para 12.4.3)

The Company awarded works to a private yard due to incorrect evaluation in two cases by ignoring PSU shipyards where they were the lowest. In one case the Company cancelled the global tender and sought a fresh quotation on nomination basis. This resulted in loss of revenue of Rs.3.19 crore.

(Para 12. 5)

The work orders contain a security clause against premature failure of repairs within a period of 90 days. However, in no case were these provisions invoked and the Company absorbed the entire repair cost besides sustaining loss of revenue of Rs.6.40 crore in two cases.

(Para 12.6.1)

The Company ought to ensure the exact availability of dry-dock slots before the Dredgers sail to the repair yards to avoid idling, loss of dredging time and loss due to unnecessary voyages. However, the Company allowed vessels to sail without first ascertaining the availability of dry-dock slots resulting in idling of the dredgers, avoidable expenditure on voyage and loss of time and revenue of Rs.1.72 crore in two cases.

(Para 12.6.2)

Although the Company spent Rs.185.13 crore on stores and spares during 1999-00 to 2003-04, it did not have proper inventory control techniques like Vital Essential and Desirable analysis, fast/slow moving items analysis, etc.

(Paras 12.7 & 12.7.1)

The Company without verifying the actual use, continued to dispatch stores and spares to dredgers (on board) resulting in huge accumulation of on board inventory which stood at Rs.77.08 crore as of March 2004.

(Para 12.7.2)

12.1 Introduction

Dredging Corporation of India Limited (the Company) was incorporated in March 1976 as a fully owned Government Company with its Registered Office in New Delhi and Corporate Office at Visakhapatnam. Its authorised capital and paid-up capital as on 31 March 2004 were Rs.30 crore and Rs.28 crore respectively. The Government disinvested (September 1992) 4,02,300 shares of the Company valuing Rs.40.23 lakh. Further disinvestment of 56,00,000 shares was offered to the public during February - March 2004. The shares of the Company are listed in Delhi, Kolkata, Mumbai and National Stock Exchanges.

The Company has been catering to the dredging needs of all major and some minor ports, Indian Navy and shipyards in the country. As of 31 March 2004, the Company had 10 Trailer Suction Hopper Dredgers (TSHD) and two Cutter Suction Dredgers (CSD). The depreciable age of a Dredger is about 14 years. Out of the 12 Dredgers owned by the Company, seven were substantially old and fully depreciated as on 31 March.2004.

Maintenance and repairs of the Dredgers is broadly classified as:

- (i) routine maintenance and minor repairs carried out at the work site in afloat condition
- (ii) major repairs undertaken at repair yards both in afloat condition and by dry-docking the vessels and
- (iii) emergency repairs, depending on the nature of the defect, undertaken immediately both at the work site and at repair yards.

The Company evolved a written manual viz., Company Procedure Manual (CPM) only in July 2001 setting out the procedures to be followed for operation and maintenance of the dredgers. It undertook 38 major repairs including eight cases as emergency repairs during the period 1999-00 to 2003-04. Of these, 19 cases were entrusted on global tender basis, six on limited tender and 13 on nomination basis. The following table gives year-wise details of operational expenditure incurred during the last five years ended 31 March 2004:-

Year	Operational Expenditure						Percentage of Repair expenditure to Total operational expenditure
	Minor Repairs	Major Repairs	Stores & Spares	Total Expenditure on Dredge Repairs	Others incl. wages, fuel cost etc.	Total Operational Expenditure	
	(Rs. in crore)						
1999-00	4.40	23.88	22.68	50.96	98.14	149.10	34
2000-01	3.09	33.87	31.85	68.81	130.48	199.29	35
2001-02	6.80	25.48	33.97	66.25	154.27	220.52	30
2002-03	6.09	30.37	44.89	81.35	177.02	258.37	31
2003-04	4.92	50.39	51.74	107.05	172.48	279.53	38
Total	25.30	163.99	185.13	374.42	732.39	1106.81	34

As may be seen from the above, the Company incurred Rs.374.42 crore towards repair and maintenance of its Dredgers, which constituted 34 per cent of the total operating expenditure.

12.2. Scope of Audit

In order to assess the efficiency and effectiveness of the system, the activity of dredge repairs with reference to dry-dockings during the last five years from 1999-2000 to 2003-04 was reviewed in July 2004.

12.3. Delay in dry-docking

The planning of dry-docking of the dredgers is to be made keeping in view the statutory requirements, need to maintain the vessel in prime condition and loss of revenue during the dry-docking period. As per statutory requirement, ocean going vessels are to be dry-docked twice in five years and the gap between two consecutive dry-docks should not exceed three years. The dredgers have a lot of machinery and work round-the-clock in shallow waters compared to other ocean going vessels, resulting in increased rate of wear and tear. The Company evolved a policy to dry-dock the dredgers once in 18 months. According to the Company's Accounting Policy (from 2000-01) a provision for dry docking expenses is made for every dredger on the assumption that they are dry docked once in 12 months. The Company's technical consultants viz. KPMG, also opined (March 2001) that dredgers should be dry-docked once in one to one and a half years and any slippage would affect the efficiency of the dredging operations. Delays in dry-docking have had adverse impact as brought out in the succeeding paragraphs.

12.3.1 Impact on Production

It is the regular overhauls and repairs during dry-docking that keep the level of efficiency of a dredger at the normal level. Therefore, when a vessel is not dry docked in time, it is likely that its production would deteriorate.

Out of 38 major dry-docks, in the case of 24 (excluding emergency cases and other six cases) the dry-docking should have been done within 18 months from the previous dry-dock. While in 16 cases dry-docks were undertaken within the requisite period, in eight cases, there were delays ranging from three to 17 months. Of these, in six cases, on account of delay, the production was adversely affected. The tabulation below brings out the position.

Dredger	Slippage (months)	Average production (M ³ /hour)		Percentage of increase in production	Loss of production (Lakh M ³)
		During slippage period	After dry dock		
XIV	7	566.676	601.247	6	1.28
VIII	14	974.710	1161.092	19	10.77
XII	9	526.606	638.536	21	5.83
XI	10	746.733	969.259	30	8.42
VIII	3	1158.882	1430.331	23	5.29
XI	6	788.827	917.138	16	3.99
Loss of total production due to delay in dry-docking the dredgers on time					35.58

As is evident from the above, there was improvement in the production performance of the dredgers after dry-docking ranging from six to 30 per cent. Had the dry-docks been undertaken within the scheduled 18 months, the production of the Company would have been higher by 35.58 lakh M³ in the above six cases. This loss in production was a direct consequence of Management's inability to put into effect its own policy regarding dry-docking of dredgers.

The Management replied (July 2004) that

- (i) the delay period had to be reckoned with reference to previous dry-docks including emergency dry-docks because during such emergency repairs other defects were also repaired.
- (ii) the parameters of output of a dredger were extremely variable as they were dependent upon a number of factors like soil, siltation pattern, littoral flow, etc.

The Management's contention is not tenable as:

- (i) even though some normal defects were also attended to during emergency repairs, the audit point is with reference to the Company's own policy of dry docking once every one and a half years.
- (ii) the Management, itself agreed that the dry-dockings were undertaken for improving the operational efficiency and
- (iii) the conditions of working of dredgers were similar in the two periods i.e. the ports before and after the dry-docks were the same during the slippage period and after dry-dock period in three cases.

12.3.2 Impact on fuel consumption

Expenditure on fuel is one of the major costs in undertaking dredging. The Company incurred Rs.470.14 crore towards fuel during the period of review, which was 42 per cent of total operating expenditure. Periodical dry-docks ensure efficient fuel consumption.

In the course of audit it was observed that on account of delays in dry-docking in two cases, there was excessive consumption of fuel during the slippage period compared to period after dry-dock. The excess fuel consumption was of the order of 788 Kilo litres involving an additional cost of Rs.1.38 crore to the Company, which was avoidable.

12.3.3 Impact of delay in obtaining Statutory clearances

Mercantile Marine Department of Director General of Shipping (MMD), Government of India is the statutory authority which conducts the necessary periodical surveys/inspections of the vessel and issues certificates like Load Line Certificate, Docking Survey, Safety certificates, etc. The Indian Register of Shipping (IRS) also conducts the necessary surveys and advises regarding the repairs to be undertaken. As per the statutory requirements, dredgers are not allowed to operate without valid certificates. Keeping in view the substantial revenue earned by the dredgers per day, it is essential to ensure that all certificates are renewed/revalidated without fail.

However, it was observed in Audit that there were lapses in this regard as discussed below:

- (i) The docking survey of Dredge-IX was due by March 1999. Accordingly, the Company planned to dry-dock in April 1999 and also in May 1999. On both the occasions, the Management obtained extension of time for re-validation of certificates and diverted the vessel to commercial operations without dry-docking as planned. Subsequently, when it attempted to dry-dock in May 1999 at Cochin Shipyard Limited (CSL), the latter expressed inability to provide a dry-dock slot. Hindustan Shipyard Limited (HSL) also, when contacted (May 1999), indicated its inability to provide a dry dock slot at that time. As the Director General Shipping refused further extension of time, having no option the Company entrusted the work to Dredge Repair Company of India Limited (DRCIL). DRCIL took 74 days for completion of the work as against the agreed 30 days, which resulted in additional time of 44 days. Thus, due to not undertaking dry-dock when due, the Company was forced to entrust the work to DRCIL and sustained a loss of revenue of Rs.5.15 crore.
- (ii) The statutory survey of Dredge- VI was due by June 1998. The Company failed to synchronize the same during emergency dry-docking undertaken in January 1998. During inspection in February 1999, IRS recommended immediate dry-docking. As IRS denied further extension, the Company had to suspend the operations for 16 days before dry-docking the Dredger. Thus, the failure to get the survey synchronized at appropriate time and failure to dry-dock before expiry, resulted in idling of the vessel with consequential loss of revenue of Rs.1.06 crore.
- (iii) The statutory survey of Dredge- V was due before July 1999. Though, the dredger was dry-docked previously in July 1998, the statutory surveys were not synchronized. When the dredger was in Haldia during July 1999, it was kept idle for 13 days while the Company was attempting to obtain extension of time from the DG Shipping. Thus, the failure to synchronize the survey during previous dry-dock and failure to seek extension well before the expiry of the validity resulted in idling of the dredger for a substantial period and loss of revenue of Rs.91 lakh.

In respect of (i) above, the Management replied (July 2004) that while the vessel was on its way to Cochin Shipyard for dry docking, it had to be diverted to New Mangalore Port for emergency operations and once Cochin Shipyard expressed non-availability of dry dock it had no option but to dry dock the vessel at DRCIL. Due to the intermittent breakdowns of the infrastructure at the dry-dock and due to taking up of additional works, the work was delayed.

The reply is not tenable as the Company was reacting to situations rather than acting according to schedule for dry-docking.

While furnishing reply to (ii) and (iii) above, the Management agreed (July 2004) that the renewal of certificates had to be kept in view almost 18 months in advance to converge for successful renewal. However, in respect of the cases cited, the Company stated that the instances were five years old. The fact that these were old cases does not detract from the need for corrective action in such cases.

12.4. Estimation of Repair Cost and Time

The Company has an established system for identifying defects for preparing work packages based on which quotations are obtained from the shipyards for dry-docking proposals. Immediately after completion of a dry dock, defects noticed from time to time are recorded for preparation of detailed work package of next dry-dock. However, in certain areas the extent of repairs is known only after opening the dredging machinery during the course of dry-docking. In addition the statutory agencies, on inspection, advise repairs in certain cases. Considering these aspects, all the repair yards are informed that there would be additional scope to the extent of 20 per cent towards unforeseen jobs. Accordingly, approvals are obtained for the quoted cost of the successful bidder plus 20 per cent towards unforeseen jobs.

12.4.1 Cost over-run in repairs

Inaccurate estimates of costs initially place the Company in a disadvantageous situation as the additional quantities have, perforce, to be entrusted at the rates offered by the Yard, which are not necessarily competitive. Further, the Management, while explaining the excess expenditure and time overrun in case of dry docking of a dredger assured the Board of Directors (May 1997), that it would take action to improve the existing system of cost estimation and also promised (January 2000) that it would, in future, carry out detailed examination of the vessel and work out the cost and time estimates with the assistance of Classification Societies such as Lloyd's Register of Shipping (LRS) and Indian Register of Shipping (IRS).

In the course of audit, it was observed that out of total 38 major repair works undertaken during the period under review, in nine cases the cost variations ranged from 21 to 91 per cent involving an additional expenditure of Rs.13.13 crore.

From this, it was evident that in spite of being aware of the problem of cost overruns, no such system of cost estimation and credible mechanism had been established to bring about reasonably accurate cost estimates.

The Management replied (July 2004) that the increase in expenditure was not due to only additional works but also on account of increased quantities and the comparison should be made with reference to estimated cost plus 20 per cent towards unforeseen jobs and not on the basic estimate only.

The reply is not tenable as the Company has been in the business of dredging for nearly three decades and it is expected that it would have developed certain expertise to estimate work packages (the items of repair to be done) more accurately, which, in turn, would help estimate costs more accurately.

12.4.2 Time over-run in repairs

As per the policy of the Company, normal completion period of each regular dry-dock is one month. However, depending on the size of the work package and time quoted by the repair yards, the repair periods are finalised. As the dredgers do not yield any revenue during the dry-dock period, completion of the dry-dock work within the quoted period is essential.

It was observed that out of 38 major repair works undertaken, there were delays in 33 cases. While the delay in 14 cases was minor, the time overrun in 17 cases of regular dry-docks (excluding two emergency cases) was significant and ranged between 17 and 75 days. As a percentage, this delay ranged between 51 per cent and 183 per cent over the quoted time, which adversely affected both production and revenue. The Company suffered a net revenue loss of Rs.14.40 crore after adjusting the liquidated damages of Rs.9.30 crore recovered from the defaulting repair yards in 13 cases.

These time overruns highlight the system deficiency in getting the works done within the contracted periods.

12.4.3 Absence of Standard Schedule of Rates

Standard Schedule of Rates would help to monitor the effective preparation of estimates and to assess the reasonableness of the price bids. This is particularly relevant in cases where the Company either has to award additional works to the same Yard or when the work itself has to be awarded on a nomination basis.

However, it was observed in Audit that the Company, which was in the business for the last 28 years, lacked in-house expertise to prepare cost estimates on its own. It failed to develop a 'Standard Schedule of Rates' based upon accumulated experience and relied on tariff information from the local repair yard viz., Hindustan Shipyard Limited, Visakhapatnam. Consequently, the Company, at times, was not in a position to compare the varying rates from a single repair yard within a short period for identical items of works and was forced to accept the same.

The Management replied (July 2004) that the tariffs of the yards varied on the basis of geographical location and to make the estimates realistic, the tariffs of one of the yards had to be necessarily adopted for the purpose of estimation. Historically, the Company being based at Visakhapatnam, tariff of Hindustan Shipyard Limited had been adopted as the benchmark for estimating the cost of dry-dock repairs.

The reply is not tenable as working out the cost estimates in-house by the Company would provide assurance that the rates quoted were reasonable.

12.5 Deficiencies in Tender Evaluation

The tendering process for deciding on the party which would undertake repairs of dredgers involves evaluation of competing bidders. Unlike in a normal evaluation of tenders where the lowest cost is the key criterion in evaluating price bids, in the case of repair of dredgers additional information regarding revenue loss during the repair period also needs to be considered. Thus, for finalising the decision on the bidders (a) the cost of repair and (b) extent of revenue loss during the quoted repair period and voyage period of the dredger to and from the repair yard, are to be taken into account. As the voyage period is dependent on the speed of a dredger, this is also one of the important considerations in evaluation. This evaluated cost would form the basis for finalisation of

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the tender. Further, price preference of 10 per cent is to be given to Public Sector Undertakings (PSUs), if they agree to match the price of the lowest tender of a private party.

In the course of Audit it was observed that in three cases there were shortcomings in evaluation of tenders by the Management as detailed below:

Sl. No.	Dredger Dry-dock month and year	Repair work assigned to	Facts of the case	Financial implication
a)	Dredge-XI (April 2001)	WISL, Goa	Port of deployment after dry-dock repairs was to be considered as Paradip. However, while evaluating the offers, the Company wrongly considered the same as Kandla. As a result evaluated cost of Hindustan Shipyard Limited Vishakhapatnam (a PSU) became higher than that of Western India Shipyard Limited (WISL), a private party. Even though, HSL offered to undertake repair work at WISL's quoted price and at reduced repair time, order was placed on WISL. The erroneous consideration resulted in loss of six dredging days.	Loss of revenue of Rs.84 lakh. (@ Rs.14 lakh per day for six days)
b)	Dredge-XII (August 2000)	WISL, Goa	By considering the speed of Dredge-XII as eleven nautical miles/hour, instead of the actual speed of nine nautical miles/hour, the offer of HSL Vishakhapatnam was projected to be higher by 12.31 per cent over that of WISL, Goa. Though HSL offered to match the cost of WISL, their offer was ignored and order was placed on WISL. Had the Company accepted the offer of HSL and negotiated there would have been a saving of voyage time by 13.5 days.	Loss of revenue of Rs.2.03 crore. (@ Rs.15 lakh per day for 13.5 days)
c)	Dredge-XI (May 2003)	HSL, Visakhapatnam	The Company cancelled the global tender for repair and finally ended up awarding the tender to the same firm viz., HSL at a higher cost and for a longer repair period.	Excess repair cost of Rs.48.72 lakh and loss of revenue of Rs.32 lakh.

In respect of (a) above, the Management replied (July 2004) that the operations department confirmed in March 2001 Kandla to be the port for deployment after dry-docking and accordingly the tender was evaluated. The reply is not tenable as, firstly, the marketing department clarified (March 2001) that Dredge-XI would be deployed at Kandla or Haldia after dry-dock depending on the performance of another dredger viz., Dredge-IX at Kandla; secondly, Dredge-IX sailed from Haldia to Kandla well before the approval (April 2001) of Tender Committee. As such, it was clear that Dredge-IX had

replaced Dredge-XI at Kandla as it was already in Kandla by the time the approval was obtained. In respect of (b) above, the Management replied (July 2004) that the speed of the vessel was not specified in the tender and for evaluation the speed was considered at eleven nautical miles. The reply is not tenable as the correct speed of the vessel was only nine nautical miles which was confirmed in the subsequent tender invited in January 2002. The Company's action was thus not justified.

In respect of (c) above, the Management replied (July 2004) that it noticed during evaluation that the port of redeployment after dry-docking was erroneously indicated as Kandla instead of Paradip; therefore, the global tender was cancelled. Since HSL stood lowest in the above tender considering Paradip, the work was entrusted to HSL on nomination basis with negotiated 27 per cent discount. The fact remains that the Company had to incur avoidable extra expenditure and suffer loss of revenue because of its own mistake.

Thus, due to wrong evaluation of the tender offers on two occasions and cancellation of global tender in one case, the Company suffered loss of revenue of Rs.3.19 crore and incurred extra expenditure of Rs.48.72 lakh, which were avoidable.

12.6 Execution of repair work

12.6.1 Failure to invoke Security clause against premature failures

The work orders contain a security clause against premature failure of repairs within a period of 90 days. They also stipulate that repairs arising within 90 days would be undertaken by repair yard at their risk and cost.

However, it was observed in Audit that in no case were the provisions of security clause invoked and the Company absorbed the entire repair cost besides sustaining loss of revenue. Two instances are discussed below.

- (i) Dredge – IX was dry-docked at Western India Shipyard Limited (WISL), Goa during November and December 2001. However, immediately on completion of repairs during sea trial itself, machinery damages occurred and to rectify these damages/defects, the repair period was extended by 31 days. The Preliminary Inquiry Report (January 2002) concluded that WISL was also responsible for the damages to the machinery. Based on this, the Chairman & Managing Director directed that suitable deductions be made from the repair bill and ordered a final enquiry. However, without waiting for the conclusion of the Final Inquiry Report, based on a note initiated by the operations department, the balance payment of Rs.78 lakh was released (June 2002) without any deductions towards damages to the machinery. The damages/defects during sea trials after dry-dock resulted in additional repairs at a cost of Rs.35.40 lakh and extended period of dry-dock with consequential loss of effective dredging time and revenue of Rs.4.41 crore.

The Management replied (July 2004) that the defects leading to extended dry-dock period were not attributable to the yard and departmental action was taken against the concerned officials of the Company.

The reply is not tenable in view of the facts that

- (a) the preliminary enquiry, based on which departmental action was taken against the concerned officials, was ignored for taking action against WISL,

- (b) final Inquiry Report findings were not considered at all and
- (c) although Mercantile Marine Department (MMD) surveyors were also requested to investigate the matter, the Company failed to obtain MMD's report. Thus, the Company's action of absolving WISL by reversing its own preliminary enquiry findings without considering the final inquiry report and the report of MMD was not in order.

(ii) Dredge-XII was dry-docked (September 1999) on emergency basis at Netaji Subhash Dry Dock, Kolkata mainly to rectify the leakages in bottom doors and the repairs were completed in October 1999. However, in spite of continued leakages from the first day after completion of dry-dock, no penal action was initiated against the repair yard. Further, the Company suffered loss of revenue of Rs.1.99 crore as Kolkata Port Trust - the customer, imposed penalty by deducting this amount from the dredging bills on account of continued bottom door leakages.

The Management replied (July 2004) that after emergency dry-docking the Company could reduce the leakage to 15.39 per cent compared to the leakage of 20 per cent prior to dry-docking at Netaji Subhash Dry Dock, Kolkata and there was reduction in penalty.

The reply is not tenable as the purpose of emergency dry-dock, which was to stop the bottom door leakages, was not met. Further, the reply fails to take note of the repair cost and loss of revenue during the emergency dry-dock amounting to Rs.30 lakh and Rs.3.72 crore respectively.

The above instances highlight the necessity that the Management should initiate penal action against premature failures as provided in the contract so that it is assured of satisfactory repairs.

12.6.2 Sailing dredgers without ensuring dry-dock slots

The Company must ensure the exact availability of dry-dock slots before the Dredgers sail to the repair yards to avoid idling and loss of dredging time due to unnecessary voyages. However, it was observed that the Company allowed the dredgers to sail without first ascertaining the availability of dry-dock slots resulting in idling of the Dredgers, infructuous expenditure towards voyage and loss of time. Some illustrative cases are discussed below:

- (i) Dredge V was allowed to sail from Haldia to Hindustan Shipyard Limited (HSL), Visakhapatnam, in September 1999, at a time when HSL was not in a position to undertake the repairs. Since no dry-dock slot was available, the vessel was sent back to Haldia and commenced dredging in October 1999. Thus, due to sailing without confirming the availability of dry-dock slot, 12 dredging days were lost, resulting in loss of revenue of Rs.84 lakh.

The Management replied (July 2004) that HSL informed that their dry-dock was not available for Dredge-V and when the Company contacted Haldia to ascertain the status of the vessel, it was learnt that the vessel had already started sailing to Visakhapatnam.

The reply is not tenable as the Management should not have allowed the vessel to sail without obtaining a date for dry-docking at HSL. It could have also taken immediate action to give instructions to the Dredge Master en-route to return to Haldia.

- (ii) With the intention to dry dock Dredge XVI at Cochin Shipyard Limited (CSL), Kochi, the vessel was allowed to sail (May 2002) from Taichung, Taiwan, without even contacting CSL. When CSL expressed its inability to undertake the repairs, having no alternative the Company deployed the dredger for Kochi Navy's work for a brief period of two weeks. Meanwhile, when a dry-dock slot was obtained at HSL, the Dredger undertook voyages to Visakhapatnam and, after dry-dock repairs, to Goa for commercial operations. Had the Company ascertained the availability of dry dock slots from both HSL and CSL before the vessel sailed from Taichung, there would have been substantial saving in voyage time of about five days by sailing it directly to Visakhapatnam and a loss of revenue of Rs.88 lakh would have been avoided.

The Management replied (July 2004) that on completion of assignment at Taichung the vessel sailed to Cochin to be deployed for Cochin Navy assignment and to dock the vessel at CSL. When no slot was available at CSL, the vessel was brought to Visakhapatnam. The voyage to HSL was inevitable.

The reply is not tenable as the Company did not contact HSL also from Taichung. It contacted only CSL and allowed the vessel to directly sail to Cochin without confirming the availability of dry dock slot at CSL. The above, illustrations indicate lapses on the part of the Company in not ascertaining the dry-dock slots before sailing the dredgers. Such lapses need to be reviewed by the Management.

12.7 Material Management

The Company procures all stores and spares required for maintenance / repairs on specific requirement and issues them Dredgers for consumption/replacement. More than 90 per cent of the stores and spares are imported and in most of the cases, materials are procured on proprietary basis. An expenditure of Rs.185.13 crore was incurred on spares and stores during 1999-00 to 2003-04. A scrutiny of the activity of 'Material Management and Inventory Control' in the Company revealed the following:

12.7.1 Absence of inventory control tools

Inventory control tools like "ABC Analysis", "Vital, Essential and Desirable (VED) Analysis", "Fast/slow Moving, Analysis" would help the Management to exercise effective inventory control. The technical consultants engaged by the Company, M/s. KPMG, also opined (March 2001) that the Company should have implemented VED Analysis to effect better material management.

However, it was observed that the Company had not fixed any maximum or minimum levels of stores and spares to be maintained in the central stores at Head Office/on board the Dredgers. Inventory control tools like "ABC Analysis", "VED Analysis", "Fast/slow Moving, Analysis", etc., were also not being employed.

The Management replied (July 2004) that though VED analysis was ideal for the Company, the same could not be implemented due to a number of variable factors peculiar to dredging industry.

The reply of the Management is not tenable in view of the fact that Management has itself accepted the report of KPMG in this regard.

12.7.2 Inventory holdings on board the dredgers

All dredgers of the Company maintain substantial quantities of stores and spares on board the dredger. As per the policy of the Company, all purchases are made against indents raised by the dredgers. The indents are to be raised against specific requirement. For effecting better inventory control, it is required to maintain both financial and numerical accounts of the inventory. However, the accounting policy of the Company with reference to consumption of stores and spares is such that the inventory is treated as consumed, irrespective of value, as soon as it is issued to the dredger and not at the time of actual consumption.

Adoption of the above accounting policy resulted in a situation where inventory, though physically available on board the dredgers, is not reflected in the financial accounts. Non-maintenance of financial accounts, over a period of time, resulted in Company's inability to value all the inventory items. When the Management attempted to assign values to the existing on board inventory, only 14,312 types of items out of 18,385 items on board of 11 out of 12 dredgers at the end of March 2004 could be valued, which amounted to Rs.77.08 crore. In the absence of proper financial accounts, the chances of misappropriation cannot be ruled out.

The Management replied (July 2004) that

- (i) the Company was in the process of streamlining the teething problems and action was on hand to improve document procedure, etc and
- (ii) in view of the working environment of the dredgers, it was necessary to keep sufficient quantity of spares on board the dredgers.

The reply of the Management is not tenable since:

- (i) considering that the Company was in operation for the last 28 years such controls should have been in place and
- (ii) the Management did not furnish any specific justification for the increasing trend in the on board inventory.

12.8 Recommendations

- (a) The Company should improve the planning of dry docking of vessels so that all dredgers are dry docked when due and statutory surveys are conducted during the regular dry docks in order that they are not dry-docked exclusively for surveys.
- (b) The Company should create immediately, for each dredger, a database of all defects (work packages), costs (estimated and actual), repair history, spares consumed, etc. and data of production performance (dredge per hour, fuel per hour, etc.) together with variable factors such as location and tidal conditions, should be captured and analysed on a regular basis. Such a database would be a useful Management Information System to take decisions on cost and time for repairs more accurately.
- (c) The Management should avoid, as far as possible, awarding repairs on nomination basis. Where it is inevitable, in emergencies, it should have a mechanism of satisfying itself that the costs are reasonable.

- (d) The Company must improve its on board spares management. It must maintain value records and not merely the quantities and also reflect the same in financial accounts.

The review was issued to the Ministry in September 2004; its reply was awaited (March 2005).