

Executive Summary

Background

India is a major maritime nation with vital economic and security interests linked to the seas. Although the Indian Navy's major role revolves around deterrence of security threats yet by virtue of India's emergence as an economic power and its geography, the Indian Navy's role has expanded considerably during peace-time as well. To do justice to this role, it is imperative that the Navy be equipped with the requisite number of ships. The Indian Navy has in place a detailed ship-building plan which has been prepared after considering specific requirements for ships, funds availability, and decommissioning schedule of various ships. Indian Navy has based its vision of ship acquisition on construction of its ships at Indian shipyards.

Warship construction is a complex task and effective management of all related activities is vital for ensuring that the ships have the potential to achieve the capabilities envisaged. An earlier audit report¹ in 1998 on the construction of frigates indicated significant time and cost over-runs and deficiencies in internal controls. A decade later, audit has re-visited this topic as the Indian Navy has invested on an average almost 55 *per cent* of its capital budget during the period 2005 - 2009 on the Naval Fleet. Audit sought to assess whether there have been improvements in the construction process and whether key issues highlighted in the 1998 report have been appropriately addressed.

Audit Approach

Out of four projects sanctioned between 1986 and 2003, this performance audit reviewed three projects which are at varying stages of construction. These are the P15A (Destroyer), P17 (Frigate) and P28 (ASW Corvettes) projects respectively. The period covered under the audit was 2005-06 to 2009-10.

The performance audit was initiated by discussing the audit scope, objectives of audit and criteria with management level at

¹ C&AG's Report No. 8 for the year ended 1998

the Ministry of Defence and Naval Headquarters. Subsequent audit examination consisted of scrutiny of documents/ records at the Ministry of Defence, Naval Headquarters and the Public Sector Shipyards (Mazagon Dock Limited, Mumbai and Garden Reach Shipbuilders and Engineers, Kolkata).

Ministry / Indian Navy response

The review was issued to the Ministry of Defence in August 2010 and the updated report was again forwarded to Ministry in December 2010. However, their reply was awaited as of February 2011.

Structure of the Report

This Report has been structured into six chapters. Chapters 1 and 2 are introductory and provide the background to warship building and the audit perspective. Chapter 3 outlines the financial considerations with comments on the effectiveness of the contracts to create the environment in which the ships will be delivered. Chapter 4 reviews project management and delivery including the infrastructure created at the shipyards to take on the increased scope of work. The chapter also discusses the monitoring mechanisms put in place to govern timely delivery of the ships. Chapter 5 details findings relating to procurements made by shipyards for the three projects and Chapter 6 sums up the audit conclusions.

Key Findings

1. Delays in ship building

Over the years, the strength of warships in Indian Navy has been stagnating and despite construction of warships indigenously, Indian Navy is facing large short-falls against its planned levels. By the year 2012, Indian Navy may retain only 61, 44 and 20 *per cent* of the envisaged force levels for frigates, destroyers and corvettes. Delays in the projects (15A, 17 and 28) commented upon in the current report are primarily due to delay in finalisation of the structural drawings, timely availability of steel and inadequate infrastructure of the Defence Public Sector Unit (DPSU) shipyards. The lead ship in all projects is delivered or expected to be delivered after a delay ranging from

four to five years from the original delivery date. Till date only one frigate of P17 has been commissioned. As a result, Navy will continue with a reduced fleet strength.

(Para 4.1, 4.2.1)

2. Poor cost estimation

Navy methodology for estimating costs of ships has resulted in unrealistic approvals for funding projects with every likelihood of cost growth at the time of project sanction itself. The competent authority is constrained to sanction shipbuilding projects on the basis of limited information like the budgetary quotes received from the DPSU shipyards. A professional mechanism does not exist to provide reliable and accurate data regarding costs to the decision making authority. There has been an increase of 260 *per cent* and 226 *per cent* in the approved costs of Project 17 and Project 15A respectively.

(Para 3.1.1, 3.1.2)

3. Contract management

There was undue delay in the conclusion of the contracts for Project 15A and Project 17. The contract for Project 28 is yet to be concluded even after seven years of the commencement of the project. The contracts for Project 15A and Project 17 were concluded after five and eight years of the placement of the Letter of Intent (LOI) on the DPSUs. Meanwhile, the DPSUs had achieved 42 *per cent* and 87 *per cent* physical progress on the first ships of P15A and P17 respectively. The contract for the P28 ships has still not been signed (as of June 2010) even though the LOI was signed in March 2003.

(Para 3.2.1)

4. Infrastructure issues

Despite inadequate infrastructure at the DPSU shipyards for undertaking warships construction, Ministry / Indian Navy did not take effective steps for augmenting such infrastructure through timely interventions and planning. Lack of readiness of the shipyards has resulted in delays in ship construction. In the case of the P15A ships, the construction of the second and third ship

was delayed by a year each due to inadequate facilities at the MDL shipyard.

In the absence of alternatives like adequate reserves or low interest financing schemes, the modernisation has been funded primarily through the ship building projects in the form of Navy financed assets. Piecemeal augmentation of infrastructure facilities has been sanctioned as part of the ship construction projects and the Indian Navy has spent over ₹ 600 crore from 2003 onwards for the modernisation of MDL and GRSE through different projects² with the aim to arrest time and cost overruns. However, audit found undue delay in completion of the infrastructure upgradation programs taken up at these shipyards. Thus, the Projects from which funds have been sanctioned have not benefitted in full measure from the modernization activities.

(Para 4.1)

5. Design and technology issues

Significant design delays are evidenced through non-freezing of design prior to start of production, delayed decisions on main systems and delay in receipt of binding data. Thus, construction of the first P17 ship commenced after a delay of 17 months due to the non-finalization of structural drawings. The process of equipment selection is also critical in ensuring that time-lines are adhered to. Unless the process of equipment selection, technical evaluation, conduct of price negotiations, and placing of supply orders is complete, binding data is not available and design cannot be frozen. Nomination of numerous developmental systems for the ships under construction under Project 15A, 17 and Project 28 has resulted in receipt of binding data only progressively, which has delayed the freezing of design parameters. Besides, certain equipments/systems have been approved for use in the ships, despite their non-compliance with technical requirements formulated.

(Para 4.2.2.1, 4.3.1)

6. Procurement

Procurement of indigenous weapons and related sensors under development or existing in service is being carried out by the

² P75, P17 and P28

shipyard as per Ministry of Defence guidelines. Audit examination revealed that some of procurements like steel, Gas Turbines, Auxiliary Control System, Bow Sonar Dome, etc. exhibited price inefficiencies, lack of competition and non-transparency.

(Para 5.2)

7. Financial management

The DPSUs were sanctioned advances which remained unutilized with them for years. The categorization of advances viz. interest bearing or non-interest bearing was also done in an *ad hoc* manner. Audit noticed instances of parking of funds with DPSUs, loss of interest on the advances paid and arbitrary release of funds etc.

(Para 3.3)

Recommendations

- *Single point accountability for the ship building project should be fixed taking care of all the aspects related to the ship building.*
- *There should be an institutionalized mechanism in place in NHQ and the Ministry to verify the correctness of budgetary costs submitted by DPSU shipyards. Besides, NHQ and the Ministry should conduct independent cost estimation using internationally accepted best practices and compare the results thereof with the quotes received from the shipyard.*
- *Sanctions for the warship constructions should be more realistic, based on appropriate verifiable criterion and contain provisions for escalation of the anticipated build period so as to avoid significant cost revisions at a later date.*
- *MOD may revisit its policy of getting its warships built only through DPSUs by including capable shipbuilders either in public or private sector also.*
- *All shipyards should be modernized and necessary resources be made available to them so as to bring them on par with best shipyards of the World.*

- *Sanctioning of shipyard modernization plans during the construction or even at the time of selection of shipyard should be revisited.*
- *MoD should select shipyards that possess adequate capacity and infrastructure keeping in view, the features of ships to be built to ensure adherence to timelines and costs.*
- *Conclusion of contract with the shipyards should be within a prescribed period in order to facilitate proper execution and monitoring of the project. Intermediate milestones and responsibilities of both parties to be fulfilled within stipulated timeframes should be spelt out.*
- *In keeping with modern thinking that the ship is built around weapons and sensors, primacy should be accorded to timely selection and finalization of weapons and sensors.*
- *Equipment, weapons and sensors under development should be replaced with proven systems in case the development process does not synchronize with the time lines planned for the ship construction.*
- *A ship building project should be seen as a plan with definite timelines and milestones with cut off dates for all stake holders including Professional Directorates of Indian Navy for fulfilling their obligations. In the case of non performance, this should be escalated to higher levels to ensure performance. Accountability should be fixed for delays and suitable action taken by the Ministry.*
- *Procurement of similar equipment for different projects should be in bulk quantity to avail competitive prices and bulk/volume discounts in the pricing.*
- *Navy need to expand their vendor base so as to increase competition through an open transparent tendering system.*
- *PCDA (Navy) should maintain a statement of accounts for each shipbuilding project at the end of each financial year and also keep track of the liquidation of advances paid to the firms against equipment procurement and expenditure incurred through an effective and reliable mechanism.*