Report of the Comptroller and Auditor General of India

For the year ended March 2008

Union Government (Defence Services) Air Force and Navy No. CA 18 of 2008-2009

CONTENTS

PREFACE

This Report for the year ended March 2008 has been prepared for submission to the President under Article 151 of the Constitution. The Report relates mainly to matters arising from test audit of the financial transactions of Ministry of Defence, Air Force, Navy, Coast Guard, associated Research and Development Units and Military Engineer Services. Results of audit of Ministry of Defence, in so far as they relate to Army and Ordnance Factories, Army HQ, Ordnance Factory Board, field units of Army, Ordnance Factories, associated Research and Development units and Military Engineer Services have been included in Report No. CA 17 of 2008 - 09.

The Report includes 30 paragraphs.

The cases mentioned in the Report are among those which came to notice in the course of audit during 2007-08 and early part of 2008-09 as well as those which came to notice during earlier years, but could not be included in the previous Reports.

OVERVIEW

The total expenditure of the Defence Services during 2007 - 08 was Rs 95,094 crore. Of this, the Air Force and Navy spent Rs 24,050 crore and Rs 16,052 crore respectively. The combined, of the two services accounts for 42 per cent of the total expenditure on the Defence . A -significant portion of the expenditure of the Air Force and Navy is capital in nature, almost 56 percent of their expenditure.

Some of the major findings arising from test audit of transactions of the Air Force, the Navy, Guard and associated units of the Defence Research and Development Organisation and Engineering Services included in the Report, are discussed below:

I Inadequate assessment and management of risks associated with acquisition of an aircraft carrier.

The objective of inducting an aircraft carrier in time to fill the gap in IN has not been achieved. The cost of acquisition has more than doubled to USD 1.82 billion (Rs. 7,207 crore) in four years. At best, IN would be acquiring, belatedly, a second hand ship with a limited life span by paying significantly more than what it would have paid for a new ship.

(Paragraph 2.1)

II Undue favour to vendor in acquisition of submarines

Despite Indian Navy's depleting force level, Ministry took nine years to conclude a contract for construction of six submarines. The inordinate delay led to enormous increase in the project to the extent of Rs 2,838 crore. The procurement procedure lacked transparency and the design had not proven its efficacy in any other navy worldwide. Technical evaluation for the 'Y' class submarine including the missile to be fitted on-board was not comprehensive and was biased in favour of the vendor. Contractual provisions have resulted in financial advantage to the vendor to the minimum extent of Euro 58.20 million (Rs 349 besides other unquantifiable benefits.

(Paragraph 2.2)

III Denial of Offset benefits of Rs. 2,711 crore in acquisition of an aircraft

In placing the order for the acquisition of 40 aircraft 'M' costing Rs. 9,036.84 crore, Ministry/IAF failed to go in for the offset clause as stipulated in the DPP[1]. This led to the denial of corresponding benefit, amounting to Rs. 2,711 crore, to Indian defence industry. The objective of urgent acquisition has also not been achieved.

(Paragraph 2.7)

IV Delay in payment of UN Death/Disability compensation

Although more than five decades have elapsed since the first deployment of troops under UN Peace Keeping Missions, Ministry is yet to frame a policy on the mechanism to monitor the initiation and the settlement of the claims of the deceased/disabled soldiers deployed for the settlement of the claims of the deceased/disabled soldiers deployed for the missions. Ministry delayed disbursement of the compensation amount to personnel/family members of the deceased.

(Paragraph 2.10)

V Procurement of defective missiles and excess missile launchers

42 of the 300 air-to-air 'X' type missiles acquired by IAF at a cost of Rs. 76 crore became unserviceable during the warranty period. Further, 165 missiles remained unserviceable for significant periods. Though the shelf life of all the missile would expire by June 2010 and despite having a stock of 440 missile launchers, the Air HQ procured 145 additional launchers between August 2006 and March 2008 rendering the expenditure of Rs. 66.86 crore on their procurement largely in fructuous.

(Paragraph 3.2)

VI Inordinate delay in installation of a radar on an aircraft

Five radars imported at a cost rs. 24.88 crore could not be installed for more than three to five years after their acquisition. In the process the radar have not only lost 50 per cent of their life but also remained unavailable for operational purpose.

(Paragraph 4.1)

VII Improper implementation of radar fitment policy

Navy) procured six radar `R' for its modern stealth frigates and landing ship tankers under construction at a cost of Rs 18.85 crore, even though performance of the radar had been sub-optimal and its phasing out was under active consideration.

(Paragraph 4.5)

VIII Integrated Logistic Management System (Air)

The ILMS (Air) application was implemented in August 2001' to enhance the efficiency of air logistics organisation with regard to inventory provisioning, procurement, warehousing distribution. The Navy needs to use ILMS optimally for effective and cost efficient managerial decisions.

(Paragraph 4.6)

IX Failure to have unsuitable equipment replaced promptly

The Navy failed to persuade a foreign firm to replace unsuitable items supplied. As a result, the 'tore of Rs 3.85 crore on their import was yet to yield any operational benefit to the Navy.

(Paragraph 4.7)

X Tardy progress in development of a radar

Despite almost a decade in developmental effort and spending Rs 27.88 crore, DRDO has been unable to provide a radar as per the requirements of Navy, It closed the original project and initiated another `Staff Project' with the same goals and new funding. Resultantly, the main aim of providing maritime radar for helicopter `A' remains unfulfilled.

(Paragraph 4.8)

CHAPTER I : INTRODUCTION

1.1 About the report

The office of the Principal Director of Audit, Air Force and Navy (PDA/AFN) is responsible for auditing the accounts and the financial transactions related to Indian Air Force, Indian Navy, Indian Coast Guard and associated Research and Development (R&D) undertaken by the Defence Research and Development Organisation of the Ministry of Defence, linked Military Engineer Services (MES) offices and integrated Defence Accounts Department units dealing with these services. The audit exercise is carried out on behalf of the Comptroller and Auditor General of India in accordance with Article 151 of the Constitution of India.

The audit effort can be classified under three distinct types of audits: Financial Audit, Compliance Audit and Performance Audit.

Financial Audit is the review of financial statements of an entity that seeks to obtain an assurance that the financial statements are free from material misstatements and present a true and fair picture.

Compliance Audits scrutinise transactions relating to expenditure, receipts, assets and liabilities of the audited entities to ascertain whether the provisions of the Constitution of India, applicable laws, rules, regulations and various orders and instructions issued by the competent authorities are being complied with.

Performance Audits are in-depth examinations of a program, function, operation or the management system of entity to assess whether the entity is achieving economy, efficiency and effectiveness in the employment of available resources.

This report is on matters arising from the Compliance Audit of Indian Air Force. Indian Navy, Indian Coast Guard and associated activities and entities. The report contains findings pertaining to capital and revenue acquisitions, installation/upgradation of systems, blockage of funds and work services. Total financial value of cases commented upon in this report is Rs 5,710 crore. A brief financial analysis of the expenditure incurred on the Air Force, Navy, R&D (related to Air Force and Navy) and Coast Guard as a part of the over-all Defence budget of the country has also been included.

1.2 Authority for Audit

Article 151 of the Constitution of India and Section 13 of the Comptroller and Auditor General's (Duties, Powers and Conditions of Service) Act, 1971 govern the scope and extent of audit. Detailed methodology of audit and reporting formats are prescribed in the `Regulations of Audit and Accounts, 2007'.

1.3 Planning and Conduct of Audit

Audit areas are prioritised through an analysis of risks so as to assess their criticality in key operating units. Expenditure incurred, operational significance, past audit results and internal control issues are amongst the prime factors which determine the severity of the risks. This exercise in turn guides the formulation of the annual audit programme. The number of units selected for audit is determined by matching the high-risk areas with available resources. Besides, high-value capital acquisitions and procurements are audited by specially constituted dedicated teams under the personal supervision of senior officers.

In general, interaction with the auditee is encouraged from the initial stage in the auditing process. Audit findings are communicated during discussions at the end of an audit exercise and followed up in writing through Local Test Audit Reports / Statement of Cases. The response from the auditee is considered and results in either settlement of the audit observation or referral to the next audit cycle for compliance. Some of the more serious irregularities are processed for inclusion in the audit reports which are submitted to the President of India under Article 151 of the Constitution of India, for laying them before each House of Parliament.

At present, the audit universe of the office comprises 1,090 units. During 2007-08, audit of 304 units/formations was carried out by using 12,196 man days.

1.4 Internal Control and co-ordination between Internal and External Audit

The Finance Division of the Ministry of Defence is headed by the Secretary (Defence/Finance)/ Financial Advisor (Defence Services). The SDF/FADS is responsible for financial scrutiny, vetting, advice and concurrence of all proposals of the Ministry of Defence. He is also responsible for internal audit and for accounting of the Defence Expenditure. Internal financial advice is provided both at the Headquarters level as also at levels of Command Headquarters and other units.

Internal financial control is further aided by periodic internal audit by the Controller General of Defence Accounts (CGDA), the Head of the Defence Accounts Department, who functions under the Financial Adviser, Ministry of Defence. The Principal Controllers of Defence Accounts, Air Force and Navy functioning under CGDA are located at Dehradun and Bombay respectively. They are responsible for internal audit, financial advice at unit level and for scrutiny and clearance of personnel claims and official bills received from Air Force and Navy units.

The internal audit mechanism is expected to be effective in implementing the rules, procedures and regulations enunciated in the form of Defence Procurement Procedure, Manual, Codes, etc. The office of PDA/AFN actively seeks assistance and co-operation from internal audit in audit examination and scrutiny. Internal auditors carry out 100 *per cent* checks. The external statutory audit bases its audit on sample / test check. The Inspection Reports (1R) generated by external audit on the basis of Local Audit are issued to auditee units as well as their internal auditors i.e. Defence Accounts Department. These IRs are pursued to their logical conclusion after ascertaining the views of the internal auditors. Draft paragraphs proposed to be included in the audit report are sent to Defence Secretary. Simultaneously, a copy is also forwarded to CGDA. The Ministry furnishes its response only after vetting by the FADS.

1.5 Auditee Profile

1.5.1 Organisation – Key responsibilities

The Ministry of Defence at the apex level frames policies on all defence related matters. The Ministry is divided into four departments, namely Department of Defence, Department of Defence Production, Department of Research and Development and Department of Ex-Servicemen Welfare. Each department is headed by a Secretary. The Defence Secretary functions as the Head of the Department of Defence and is also responsible for coordinating the activities of other departments

The Indian Air Force is headed by the Chief of Air Staff. Air Headquarters (Air HQ) is the apex body and chief management organisation of the Indian Air Force. The ultimate and overall administrative, operational, financial, technical and maintenance control of IAF rests with Air HQ. Operational and maintenance units of IAF normally consist of Wings and Squadrons, Signal Units, Base Repair Depots and Equipment Depot.

The Indian Navy is headed by Chief of Naval Staff. Naval Headquarters (NHQ) is the apex body and chief management organisation and is responsible for command, control and administration of the Indian Navy. Operational and maintenance units of Indian Navy consist of Warships and Submarines, Dockyard, Naval Ship Repair Yards, Equipment Depots and Material Organisation.

The Coast Guard is the youngest service of the armed forces of India and was created to protect the country's vast coastline and offshore wealth. The Director General, Coast Guard exercises general superintendence, direction and control of the Coast Guard.

Military Engineer Services (MES) is one of the largest Government construction agencies. Engineer-in-Chief is the head of the MES. The MES is responsible for conclusion of contracts, execution of work services and maintenance of existing buildings of the Armed Forces. It works under the Engineer-in-Chief Branch of Army Headquarters.

The Defence Research and Development Organisation undertakes design and development of weapon systems and equipment in accordance with the expressed needs and the qualitative requirements laid down by the services. Certain laboratories are dedicated exclusively to Air Force and Navy like the Gas Turbine and Research Establishment (GTRE), Aeronautical Development Agency (ADA), Electronics and Radar Development Establishment (LRDE) and Centre for Airborne System (CABS) etc. These organisations also render scientific advice to the Service Headquarters. They work under the Department of Defence Research and Development of Ministry of Defence.

The Defence Accounts Department is headed by the Controller General of Defence Accounts, New Delhi who functions under the Financial Advisor, Ministry of Defence. The Department provides services to the Armed Forces in terms of financial advice and accounting of Defence Services receipts and expenditure as well as Defence Pensions.

1.6 Significant Audit Observations

Audit has, over the years, commented on many critical areas of Defence Sector pertaining to Indian Air Force, Indian Navy, Indian Coast Guard and dedicated R&D projects. The present Audit Report points out significant deficiencies/ short comings in the procurement processes followed - both under Capital and Revenue - by Ministry of Defence as well as by the Services Organisation. The Ministry of Defence, on its part, over the years, has taken several measures to improve the

procurement procedures. Most important of them are the introduction of Defence Procurement Procedure and Defence Procurement Manual and their regular updation.

The present report highlights several important cases involving substantial expenditure, in which either the procurement has been delayed or has failed to achieve its objective.

Induction of ship `Q' (Paragraph 2.1) has been dogged by delay in completion of its repair and refit and drastic increase in scope of repairs with consequential cost increase. Procedures were circumvented in the procurement of additional 40 aircraft `M' (Paragraph 2.7). This led to denial of corresponding benefit, amounting to Rs 2,711 crore to Indian defence industry. Besides, the objective of urgent acquisition has also not been achieved. There was an inordinate delay in acquisition of `Y' class submarines (Paragraph 2.2). The delay led to an enormous increase in project cost to the extent of Rs 2,838 crore. Contract for acquisition of an aircraft (Paragraph 2.3) was concluded 22 years after the need was felt for inducting Jet trainer aircrafts to meet training requirements of IAF. The aircrafts were acquired on the basis of ASRs formulated in 1987 i.e 17 years earlier. There was an additional expenditure of Rs 298 crore in procurement of aircraft `L' (Paragraph 2.5). The induction of a vital system on an aircraft fleet has not fructified despite a lapse of almost a decade (Paragraph 3.1). IAF acquired missiles from Russia which subsequently proved to be highly unreliable. Air Force also procured additional launchers for the missiles without taking into account the existing stock, which led to infructuous expenditure of Rs 66.86 crore (Paragraph 3.2). Failure to ensure cost neutrality in UNPK Missions of IAF led to a lesser reimbursement of Rs 245 crore (Paragraph 2.9).

1.7 Financial Aspects

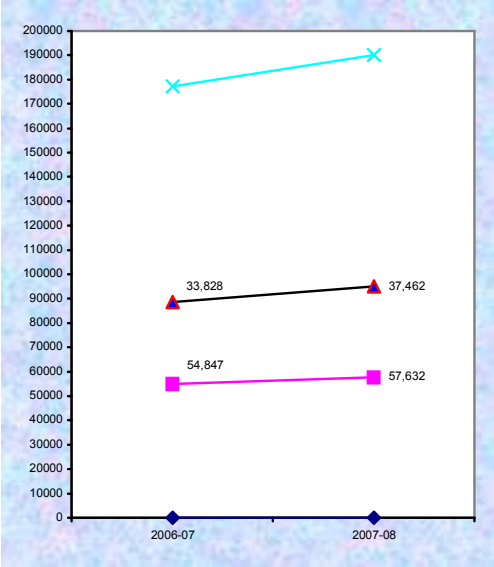
India's Defence Budget is broadly categorised under Revenue and Capital Expenditure. While Revenue expenditure includes Pay and Allowances, Stores, Transportation and Work Services etc., Capital expenditure covers expenditure on acquisition of new weapons and ammunition and replenishment of obsolete stores with modem variety.

Indian Defence expenditure increased by 7.23 per cent from Rs 88,675 crore in 2006-07 to Rs 95,094 crore in 2007-08. The share of the Air Force and the Navy in the total expenditure on Defence Services in 2007-08 was Rs 24,050 crore and Rs 16,052 crore which together constituted approximately 42 per cent.

1.7.1 Defence Expenditure

1.7.2 The Indian defence expenditure does not include the expenditure on the pensionary benefits of retired defence personnel and expenditure incurred on Defence civilian staff like Defence Accounts organisation, Defence Estates Organisation, secretariat of the Ministry of Defence, Defence Canteens and Coast Guard Organisation. Indian defence spending increased from Rs 83,660 crore in 2005-06 to Rs 95,094, crore in 2007-08 with an average annual growth of 6.83 per cent. However, as a percentage of GDP, the Defence expenditure has shown a downward turn during this period from 2.25 per cent to 1.98 per cent.

Historically, revenue expend-editure accounts for the bulk of the Defence Budget. The share of Revenue expenditure has, however, come down in recent years, owing to greater focus on Capital Acquisitions. Out of the total Defence expenditure, the share of revenue defence expenditure has gone up from 38.65 per cent to 39.39 per cent during the same period.



Defence Expenditure

Year	Annual Expenditure			Percentage increase over previous year	Expenditure as percentage of CGE	Expend-ture as percentage of GDP
	REVENUE	CAPITAL	TOTAL			
2005-06	51,322	32,338	83,660	6.39	15.91	2.25 (P)
2006-07	54,847	33,828	88,675	5.99	14.64	2.06 (Q)
2007-08	57,632	37,462	95,094	7.24	13.04	1.97 (A)

1.7.2.1 Air Force and Navy Expenditure

The total expenditure incurred by the Indian Air Force and Navy from 2005-06 to 2007-08 ranged between 42.17 and 46.26 *per cent* of the total Defence Budget. In this period, while Air Force expenditure rose by 9.70 *per cent* from Rs 21,924 crore to Rs 24,050 crore, the Navy expenditure increased by 12.89 *per cent* from Rs 14,219 crore to Rs 16,052 crore. The distribution of Defence expenditure is depicted in the following table:

Year	DISTRIBUTION OF DEFENCE EXPENDITURE					
	Army	Air Force	Navy	Ordnance Factories	R & D	Total
2005-06	40,862	21,924	14,219	1,329	5,326	83,660
2006-07	51,141	24,692[2]	16,322	1,135	5,385	88,675
2007-08	47,421	24,050[3]	16,052	1,425	6,146	95,094

1.7.2.2 Air Force Expenditure

A broad summary of Air Force expenditure is given below :

Air Force Expenditure

Year	Total	Percentage change over previous year	As a percentage of total Defence Expenditure	Revenue	Capital
2005-06	21,924	(-) 5.62	26.21	9,393	12,531
2006-07	24,692	(+) 12.62	27.85	10,065	14,627
2007-08	24,050	(-) 2.60	25.29	10,558	13,492

1.7.2.3 Capital Expenditure

The capital expenditure on Air Force rose by nearly 7.69 per cent during 2005-06 to 2007-08. In absolute terms, capital expenditure increased from Rs 12,531 crore in 2005 - 06 to Rs 13,492 crore in 2007-08.

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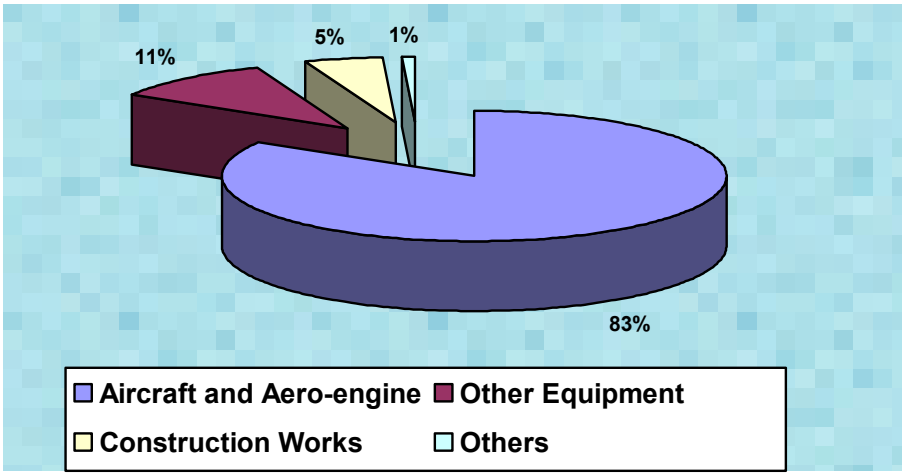
[2] It includes withdrawal of Rs. 4,672 crore on 30 March 2007 for meeting the expenses in next financial year (2007-08).

[3] It includes withdrawal of Rs. 15,00 crore on 28 February 2008 for meeting the expenses in next financial year (2008-09)

The capital expenditure of 1AF was mainly incurred on acquisition of new aircrafts and modernisation/ upgradation of the existing aircrafts. The average annual distribution of expenditure over different categories for the last three years is depicted below:



1.7.2.4 Revenue Expenditure

During the three year period under consideration, revenue expenditure increased by 12.40 per cent from Rs 9,393 crore in 2005-06 to Rs 10,558 crore in 2007-08. Repairs and maintenance of aircrafts including procurement of airframe and aeroengines, aviation stores of spares and POL[4] etc account for nearly 60 per cent of the revenue expenditure of the 1AF. Besides, the pay and allowances of the IAF personnel consume nearly 27 per cent of the IAF revenue expenditure. The remaining expenditure is accounted for by transportation, works and other expenditure.

1.7.2.5 Indian Navy Expenditure

A broad summary of Navy expenditure is given below :

Navy Expenditure

(Rs in crore)

Year	Total	Percentage change over previous year	As a percentage of total Defence Expenditure	Revenue	Capital
2005-06	14,219	(+) 4.74	16.99	6,415	7,804
2006-07	16,322	(+) 14.79	18.41	6,836	9,486
2007-08	16,052	(-) 1.65	16.88	7,117	8,935

[4] POL = Petroleum, oil and lubricants

1.7.2.6 Capital Expenditure

Indian Navy has also strived to modernise its naval fleet by acquiring new warships and upgrading the existing ships during the period. The capital expenditure of Navy increased by 14 per cent primarily on account of acquisition/construction/ upgradation

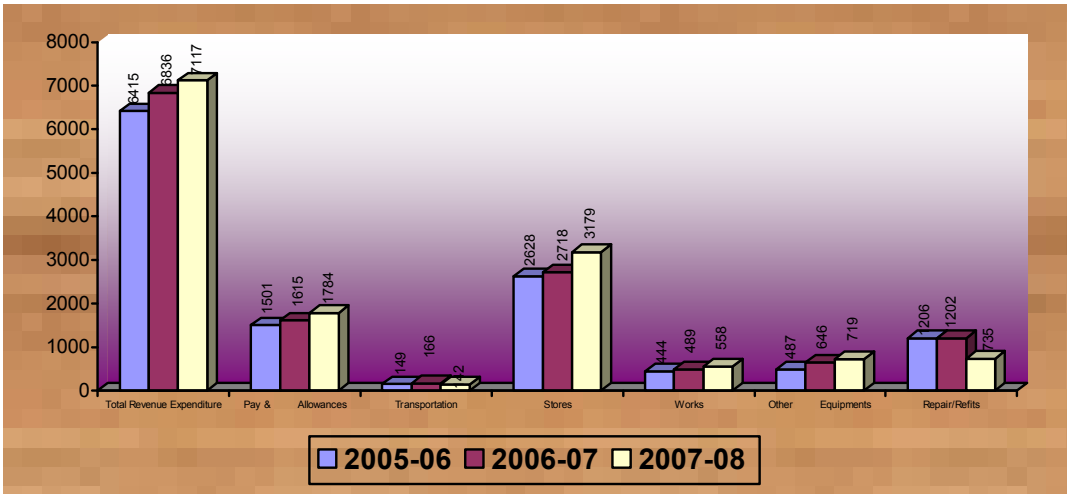
Capital Expenditure

(Rs in crore)

Year	Naval Fleet	Naval Dockyard	Aircraft and Aero engine	Construction Works	Other Equipments	Others	Total
2005-06	4,477	367	1,071	148	1,509	232	7,804
2006-07	7,080[5]	465	366	186	1,187	202	9,486
2007-08	6,162[6]	668	410	285	1,162	248	8,935

1.7.2.7 Revenue Expenditure

Revenue expenditure increased by a 11 percent during the period 2005-06 to 2007-08 from Rs. 6,415 crore to Rs. 7,117 crore. Repairs and refits of



[5] Include Rs 1,464 crore paid to 3 DPSUs (MDL, GRSE & CSL) in Feb/March 2007 for meeting the expenses that would arise in the next financial year 2007-08.

[6] Includes Rs. 1,584 crore paid to 3 DPSUs (MDL, GRSE & CSL) in March 2008 for meeting the expenses that would arise in the next financial year 2008.09.

Aircraft carriers/frigates/destroyers/corvettes/other warships including procurement of stores of spares and POL etc account for almost 60 percent of the revenue expenditure of the Navy. Besides, the pay and allowances of the Navy personnel consume nearly 25 per cent of the Navy revenue expenditure.

1.8 Coast Guard Organisation

The budgetary allotments and expenditure incurred during the last three years are tabulated below :

(Rs in crore)

Year	**Budget Estimates**	**Final Grant/Appropriation**	**Expenditure**	**Percentage of BE which could not be utilised**
2005-06	825.03	790.46	774.34	06
2006-07	1,075.00	820.19	704.48	34
2007-08	1,150.00	852.37	668.62	42

Although the Ministry obtained substantial hikes in the Budgetary Estimates for the Coast Guard in 2006-07 and 2007-08 from the Ministry of Finance/Parliament, more than one-third of the provisions approved could not be spent.

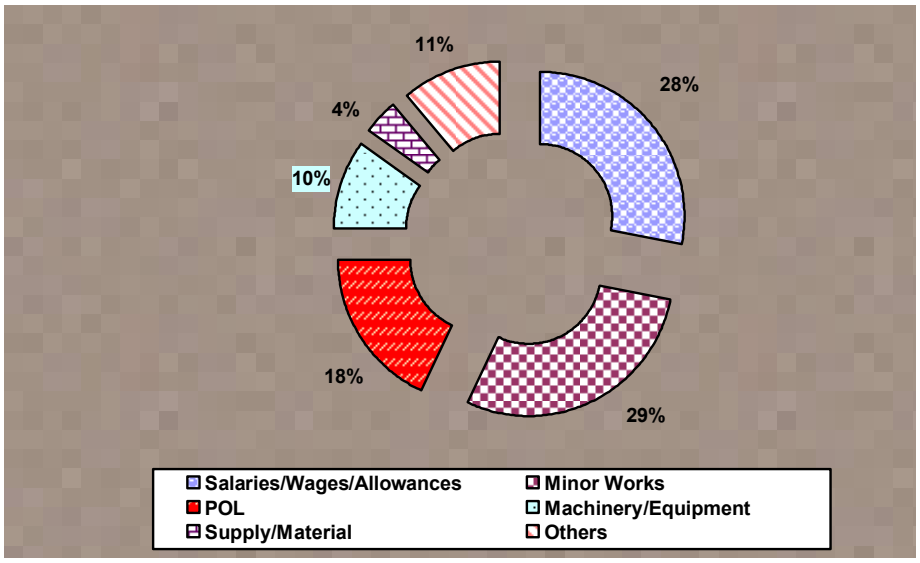
Major items of Capital Expensiture are enumerated below :-

(Rs in crore)

Year	Ships & Fleet	Major works and Land Acquisition	Acquisition of Aircraft	Total Capital Expenditure	Budget Estimates
2005-06	371.31	26.01	25.27	422.59	500.00
2006-07	288.22	37.09	13.04	338.35	645.00
2007-08	179.64	52.86	22.88	255.38	735.21

It would be apparent that the Coast Guard has not been able to utilise the funds approved in the Budget Estimates during the last three years. The nonutilisation of the BE provisions has been substantial in 2006-07 (48 per cent) and 2007-08 (65 percent).

Major items of Revenue Expenditure are also shown below :



1.9 Receipts of the Air Force, Navy and Coast Guard

The details of receipts and recoveries pertaining to Air Force and Navy and Coast Guard during the last three years for the services that they have provided to other organisations / departments are given in the table below:

Year	Receipt and Recoveries in respect of Air Force	Receipt and Recoveries in respect of Navy	Receipt and Recoveries in respect of Coast Guard
2005-06	228.95	78.60	1.65
2006-07	416.51	121.62	4.17
2007-08	374.71** (RE)	818.60** (RE)	8.13

** RE : Revised Estimate 2007-08

1.10 Appropriation and Expenditure

The summarized position of appropriation and expenditure during 2005-06 to 2007-08 in respect of the Air Force and the Navy is reflected in the table below :

(Rs in Crore)s

	Final Grant	Actual Expend-iture	Total Excess/ Savings (+)/(-)	Final Grant	Actual Expend-iture	Total Excess/ Savings (+)/(-)	Final Grant	Actual Expend-iture	Total Excess/ Savings (+)/(-)
AIR FORCE									
REVENUE	**2005-2006**			**2006-2007**			**2007-2008**		
Voted	9,349.08	9,391.84	(+) 42.76	10,115.89	10,062.96	(-) 52.93	10,663.58	10,556.01	(-) 107.57
Charged	1.19	1.01	(-) 0.18	5.93	1.54	(-) 4.39	1.94	0.98	(-) 0.96
CAPITAL									
Voted	12,554.33	12,531.09	(-)23.24	13,710.20	14,617.29	(+)907.09	13,594.87	13,489.68	(-)105.19
Charged	5.20	0.21	(-) 4.99	15.30	10.00	(-) 5.30	3.88	2.31	(-)1.57
	21,909.80	**21,924.15**	**(+)14.35**	**23,847.32**	**24.691.79**	**(+)844.27**	**24,264.27**	**24,048.98**	**(-)215.29**
NAVY									
REVENUE	**2005-2006**			**2006-2007**			**2007-2008**		
Voted	6,421.46	6,414.55	(-) 6.91	6,889.27	6,836.29	(-) 52.98	7,172.68	7,115.58	(-) 57.10
Charged	1.33	0.44	(-) 0.89	1.37	0.24	(-) 1.13	1.37	1.29	(-)0.08
CAPITAL									
Voted	7,817.61	7,801.84	(-) 15.77	9,607.77	9,484.64	(-)123.13	8,892.10	8,934.47	(+)42.37
Charged	1.70	2.19	(+) 0.49	3.60	1.07	(-) 2.53	6.40	0.69	(-)5.71
	14,242.10	**14,219.02**	**(-) 23.08**	**16,502.01**	**16,322.24**	**(-)179.77**	**16,072.55**	**16,052.03**	**(-)20.52**

An analysis of the Appropriation Accounts, Defence Services for each of the three years has been included in the Report of the Comptroller and Auditor General of India for the relevant years, Union Government - Accounts of the Union Government.

1.11 Audit Impact

1.11.1 Response of the Ministry to Draft Audit Paragraphs

On the recommendations of the Public Accounts Committee (PAC), Ministry of Finance (Department of Expenditure) issued directions to all Ministries in June 1960 to send their response to the Draft Audit Paragraphs proposed for inclusion in the Report of the Comptroller and Auditor General of India within six weeks.

The Draft Paragraphs proposed for inclusion in this Report were forwarded to the Secretary, Ministry of Defence between 2 June 2008 and Despite the instructions of

the Ministry of Finance issued at the instance of the PAC, the Ministry did not send replies to 17 Draft Paragraphs out of 30 Paragraphs included in this Report. Thus, the response of the Ministry could not be included in respect of these paragraphs.

1.11.2 Action Taken Notes on Audit Paragraphs of earlier Reports

With a view to enforce accountability of the executive in respect of all issues dealt with in various Audit Reports, the Public Accounts Committee desired that Action Taken Notes (ATNs) on all paragraphs pertaining to the Audit Reports for the year ended 31 March 1996 onwards be submitted to them, duly vetted by audit, within four months from the laying of the Report in Parliament.

Review of outstanding ATNs on Audit Paragraph relating to the Air Force, Navy and Coast Guard as on 31 January 2009 showed that the Ministry had not submitted the initial ATNs in respect of 8 out of 73 paragraphs included in the Audit Reports up to and for the year ended March 2007 as shown in Annexure-I.

1.11.3 Outcomes

Findings of earlier reports have resulted in various procedural changes in Defence Procurement Procedure as well as systemic changes in operations of the audit entity. In addition, each year's audit also results in savings and recoveries. During last three years, recoveries to the extent of Rs 72.42 crore (Rs 3.38 crore in respect of current Audit Report) and savings to the extent of Rs 8.01 crore (Rs 2.5 crore for current Audit Report) were affected at the instance of Audit.

CHAPTER II : MINISTRY OF DEFENCE

2.1 Inadequate assessment and management of risks associated with acquisition of an aircraft carrier

The objective of inducting an aircraft carrier in time to fill the gap in in has not been achieved. The cost of acquisition has more than doubled to USD 1.82 billion (Rs 7,207 crore[7]) in four years. At best, IN would be acquiring, belatedly, a second hand ship with a limited life span by paying significantly more than what it would have paid for a new ship.

Introduction

An Inter Government Agreement (IGA) was signed with a foreign country (vendor) in October 2000 for acquisition of ship `Q', a modified Kiev class heavy cruiser of the foreign navy as part of a package deal. The package deal included the `gift' of the cruiser to the Indian Navy (IN) with payments being made only for the Repair and Re-equipping (R&R) to be undertaken to convert the cruiser into an aircraft carrier and for the acquisition of certain fighter aircrafts for the carrier. After protracted discussions, the acquisition of the ship `Q' was approved by the Competent Financial Authority (CFA) in January 2004. The total outlay of the project sanctioned in January 2004 was Rs 8,927 crore, with the delivery scheduled for August 2008. The split up of the cost estimates was as indicated in the following table:

Sl. No.	Cost Element	USD	Rs in crore
1	Firm cost of refit and re-equipment of ship 'Q'	875,040,318	4,025
2	Cost ceiling on shore projects (ship 'Q')	78,000,000	358
3	Cost ceiling on Customer Supplied Equipment	--	400
4	Cost ceiling on Growth of Work	21,236,003	97
5	Fighter Aircraft	879,826,880	4,047
6	**Total**	**1,854,103,201**	**8,927**

[7] 1 USD = Rs. 39.60

The R&R of ship `Q' was the most significant element of the package agreement as this would determine the ultimate availability and capabilities of the aircraft carrier delivered. Out of the total 2,500 compartments spread over nine decks on the ship, 1,650 would either be newly created or extensively modified. Thus, almost two third of the ship would be renovated.

Ten months before the scheduled date of delivery, in October / November 2007, the vendor requested for extension in the delivery schedule by 52 months i.e till December 2012 and for an increase in the contract cost of the Carrier by USD 1.2 billion (137 per cent increase). Ministry of Defence (Ministry) was in the process of computing and finalising the additional cost at the time of audit. As of May 2008, preliminary work to be undertaken on the ship `Q' had mostly been completed. However, major items of work like cabling, mounting of structures etc. were still underway, the ship `Q' was not undocked and various acceptance trials were yet to begin.

Audit reviewed the circumstances leading to this acquisition, justification for the purchase, the R&R contract and its implementation. The re-negotiation process, acquisition of the fighter aircraft and infrastructure activities for the aircraft carrier in India were not taken up in audit. The Ministry's cooperation in taking forward the audit effort was less forthcoming than what is usually the case. Audit findings, based on documents made available, follow:

1. Lacunae in planning process

IN had two aircraft carriers, i.e `X'[8] and `Y'9, in its fleet. While the aircraft carrier `X' was to be decommissioned in 1997, aircraft carrier `Y' was likely to be decommissioned by 2007. Aircraft carrier `Y' is, however, presently undergoing repair/refit. The construction of indigenous Air Defence Ship (ADS) was expected to be completed by 2012. The acquisition of ship `Q' was to fill the five-year carrier void during 2007-2012. Audit scrutiny brought out the following aspects:

The proposal for an indigenous aircraft carrier was initiated in mid eighties. The decision to build the carrier in the country was taken only in 1999. By that time, however, two Indian delegations had undertaken evaluation visits to Russia in 1995 and 1998 in connection with acquiring ship `Q'.

The ship `Q' had met with a major fire accident in 1994, within a decade of its commissioning.

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8 Aircraft carrier 'X' was commissioned in Indian Navy in March 1961
9 Aircraft carrier 'Y' was commissioned in Indian Navy in May 1987

The acquisition of an aircraft carrier was critical for IN. A foreign country offered the cruiser as a `gift' but linked the offer to the R&R activities and fighter aircraft acquisition under the package deal.

Two IN delegations that visited the foreign country in August 1995 and January 1998 commented on the deteriorating material state of the ship and stated that it was apparent that little or no maintenance efforts had been undertaken. A third delegation (October 1999) also observed that the material condition of the ship `Q' had further deteriorated and that the process of deterioration was likely to accelerate with the passage of time. The delegation indicated that the state of machinery and systems had worsened to such an extent that the refit could hardly be called `repair'.

An aircraft carrier forms the centre of a full-fledged battle group consisting of `X' numbers large frigates with a few missile boats and an air complement. Given the expected force level of IN by the time ship `Q' was to be inducted as an aircraft carrier, it was not clear as how the IN could provide adequate complement battle group to the aircraft carrier.

The foregoing issues ought to have triggered enough concern in the Ministry to question not only the validity of costs in relation to the scope of the work but also the very justification of the purchase.

II. Design risk and risks associated with the shipyard

(a) Operationalising ship `Q' as a carrier required large-scale design changes as the ship `Q' was not an aircraft carrier but more of a cruiser equipped with a flight deck. Therefore, it had to be configured for a different type of service from that of its original design. However, the Working Design Documents and inputs from the original ship-builder. were not available. A large number of drawings required corrections and could not be finalised even three years after the conclusion of contract.

(b) The vendor's shipyard that was to undertake the R&R work, had neither built nor repaired ships of this magnitude nor had any work experience on aircraft carriers.

(c) In 2004, when IN agreed to award the contract worth USD 875 million, the shipyard's total revenue was USD 81 million.

(d) As of April 2008, Additional Operation Requirements (AORs) were being identified. Although certain AORs were identified in 2006, these were approved only by April 2008.

III. Limited operational capabilities of the carrier

Certain key capabilities which would enable the ship to meet potential threats / challenges had either not been provided for or had been postponed to a later date, as detailed below:

- The Close-In Weapon System (CIWS) is a vital naval shipboard point weapon for detecting and destroying incoming anti-ship missiles and enemy aircraft at short range. The anti-aircraft missile complex selected to be fitted in ship `Q' failed during trials and the R&R contract was, thus, concluded without the missile system. Estimated expenditure on the missile system was in the range of Rs 161 crore to Rs 230 crore. Due to the considerable time and cost overrun already prevalent in the R&R, it was decided to fit the CIWS on-board the ship after her arrival in India. This decision implied that:

  - *The ship would not have a CIWS till her first refit in India in 2017;*
  - *23 Compartments meant for the CIWS would remain vacant till refit.*

- The refit schedule did not cater for fitment of Jet Blast Deflectors[10] even though these are considered essential as the fighter aircraft is an aircraft that engages reheat for deck launches. As a result, there can be no movement, of men or aircraft, behind the aircraft taking off till it has left the deck. This deficiency was sought to be resolved by increasing the distance between the two planes though this would result in increased time lapse between two launches.

- The fighter aircraft, after landing on the flight deck of the carrier is decelerated by means of an arresting gear system. Trials for the three sets of arresting gears before fitment were scheduled for May/June 2008. However, the trials could not be undertaken in the vendor country. Alternatives were being worked out. Trials and fitment onboard would take about 18 months to complete and delay in this activity would also increase the risk of further delay in the delivery of the ship. Further, vendor's shipyard had sought to limit the trials to one. The risk associated with less number of trials than scheduled needed to be evaluated.

- The 'crash barrier' that assists in recovery of an aircraft in the event of loss of tail hook, had not been provided for.

- The ship is to be provided with 94 life rafts catering for 1,880 personnel against a requirement of 106 for 1,924 personnel.

[10] Jet Blast deflectors prevent the air/gas blast of the aircraft taking off from damaging anything behind the aircraft, specifically the plane behind which would take off next.

IV. Contractual risks

(a) The contract as finalised had gaps. These are tabulated below:

Particulars	Remarks	Impact	Estimated Financial Implication
Insurance	While the contract stipulated that safety of the ship was the responsibility of the Yard it did not specify the party which would pay the insuran premium.	The Yard has demanded Extra payment without clearly specifying whether the ship had, in actuality, been insured.	USD 35.80 million
Trials	Participation of foreign navy was not costed.	Contract was concluded at a 'guess' estimate of USD 27 million.	USD 522 million
Liquidated Damages	LD could be levied from 91 day of delay at the rate of or *per cent* of contract value pe month on either customer or supplier for failure to adhere to deadlines.	There was no LD leviable for delay at stages. Supplier's liability is, in effect, limited to three months only as new contract was to be negotiated in case there was a delay greater than six months in delivery of aircraft carrier.	Unascertainable
SPTA	Ceiling on SPTA was USD 149 million despite IN's own Assessment that USD 705 million needed to be provided.	Project costs were decreased to that extent showing a lower price for the ship 'Q'.	USD 222 million

(b) Stage payments

In general, payment terms should be linked to demonstrate physical outputs that take forward the achievement of the contractual objective. In the contract for R&R, these would include submission drawings, erection of hull, placement of orders for major equipment, percentage of construction completed, successful trials, etc. Each of the stage payments as stipulated in the contract, however, was to be released at intervals of 71 days. Further, they related to activities that did not contribute significantly to the completion of

the R&R of ship 'Q', viz, dismounting of ship's armament and equipment, dismounting and unloading of side shaft, handing over of documents, submission of Additional repair Sheet etc.

Audit reviewed the status of project and found that a major portion (65 *per cent)* of the contracted work was outstanding (August 2007). These included: 100 *per cent* of

`readiness of the compartments', 100 *per cent* of cabling, 98 *per cent* of installation of equipment and 33 *per cent* of deck work. However, USD 407.05 million, representing 66 *per cent* of the contracted cost had been paid although the R&R work, after completion of about 35 *per cent* of the work over all, had come to a stand still (August 2007).

V. Monitoring and Supervision

The Project is monitored by three committees, namely, the Empowered Apex Committee (EAC), Project Steering Committee and a third committee headed by ACCP[11]. Additionally, a Warship Overseeing Team (WOT) of 45 members Was also constituted[12] for the entire duration of ship's repair and reequipping. The following points came to light in audit scrutiny:

- None of the committees adhered to the frequency fixed for the meetings. Neither was the enormity of the situation foreseen nor appropriate action taken till the vendor presented the revised cost estimates and delivery dates in October/ November 2007.
- The WOT, responsible for monitoring progress on a day-to-day basis was positioned almost a year late. Thus, there was no scope for feedback for the first year.

VI. Project costs increases

Additional work revealed in the course of repair determination was to be intimated through Additional Repair Sheets (ARS) and agreed upon within 12 months of the commencement of the R&R. The Indian side's liability was limited to USD 21.24 million. The ARS projected by the vendor within stipulated period, in March 2005, did not indicate the cost. The third list (ARS3) was submitted in November 2007 i.e 33 months after the time limit with a cost implication of USD 1.2 billion. An analysis of the projected demand showed that additional work amounting to USD 71.5 million was not envisaged during finalisation of R&R contract. Further, there had been significant instances of equipment replacements rather than repairs contributing an extra USD 154.4 million.

The most substantial increase (USD 522.57 million), however, was on account of sea trials. The cost of the trials as originally contracted was USD 27 million. However, it had increased by almost twenty times to USD 550 million (more than 60 *per cent* of the original estimated cost projected for R&R). The sea trials were expected to take approximately 35 months as against envisaged trial period of 19 months.

After factoring in a 26 *per cent* decrease on additional payments sought by the vendor that was achieved earlier during protracted negotiations, the additional demand of USD 1.2 billion in 2007 would work out to USD 849 million at 2004 prices.

[11] ACCP-Assistant Controller Carrier Projects

[12] To be located at Russian Shipyard

The seeming advantage of faster acquisition to bridge the gap has also become questionable owing to delays.

IN had compared the cost of a new carrier vis-a-vis the ship `Q' (after Repair and Re-equipment) in 2004 at the time of approval of the project. The details were as in the following table.

Particular	New Aircraft Carrier	Ship 'Q'
Cost (in million USD)	1,145	974
Design and development	two years	within 46 to 50 months of conclusion of contract
Ship construction period	eight years	
Life	40 years	20 years

Thus, it can be seen that IN was acquiring a second hand refitted aircraft carrier that had half the life span of and was 60 *per cent* more expensive than a new one.

VII. Risk of further delay

Within eight months of commencement of work (November 2004), the vendor proposed amendments in the Master Schedule and reiterated the need for revision (May 2005 and June 2006) citing reasons of inclement weather for certain activities of R&R.

A Revised Master Schedule, as shown below, was received in October 2007 indicating delivery of ship in December 2012. The IN was, as on date (December 2008), negotiating the schedule.

Activity	Date as per contract	Revised Dates	Delay in months
First undocking	September 2006	August 2008	23
Commencement of Mooring Trials	End May 2007	November 2010	41
Completion of ERT Phase I	October 2007	October 2011	47
Completion of ERT Phase I	May 2008	August 2012	51
Delivery of ship	August 2008	December 2012	52

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Overall work progress continued to be slow and needed to be accelerated to meet even the revised schedule. Even the `first event', i.e undocking of the ship was not achieved. Given the work that needed to be done preceding the undocking and the cascading effect of delay in undocking on down-stream activities, there was a risk that the Delivery Acceptance Trials of the ship would not be completed by 2012.

VIII. Other points of interest

Payment of USD 31 million was questionable:

- The 10th stage payment amounting to USD 18.52 million was made on the basis of a certificate furnished by the vendor that there was no additional dock work. However, machining of new rudder stocks and some structural works were not completed by then.

- An ARS was projected and the 5th stage payment of USD 12.33 million obtained. However, cost implication for the additional repair works was not indicated in the ARS.

Additionality of Rs 41.34 crore caused by delay:

- Because of delay in delivery of the carrier, IN would be constrained to continue deputation of 35 members WOT in Russia beyond 2008. This would result in extra expenditure of Rs 25.56 crore (2012) / Rs 38.34 crore (2014).

- Modifications being carried out on the ship for operating the aircraft 'Z' would be redundant as by the time ship 'Q' joins IN in 2012, aircraft 'Z' would already have been decommissioned. Resultantly, the expenditure of approximately Rs 3 crore on facilities to cater specifically for the aircraft 'Z', would be infructuous.

CSEs risk of becoming obsolete:

- Out of 14 Customer Supplier Equipment (CSE) worth Rs 93.96 crore, only 11 have been supplied (May 2008). Joint Receipt Inspection of delivered equipment divulged serious discrepancies / unserviceability. Besides, due to delay in the project, all the customer supplied equipment need to be rechecked for preservation. As all the CSEs were electronic and electrical items, they face the risk of becoming obsolete and of losing their guarantee cover.

IX. Conclusion

The objective of induction of ship 'Q' as an aircraft carrier in time to bridge the gap in IN capabilities has been defeated. The decision to go in for R&R of a second hand ship has become questionable as a new aircraft carrier would have cost much less and would have had twice the life span.

In sum, the Government has paid USD 407.05 million (August 2007) and is now faced with an additional demand for USD 1.2 billion (November 2007) for a second hand carrier whose delivery schedule is uncertain.

The matter was referred to the Ministry in September 2008; their reply was awaited as of January 2009.

2.2 Undue favour to vendor in acquisition of submarines

Despite Indian Navy's depleting force level, Ministry took nine years to conclude a contract for the construction of six submarines. The delay led t6 increase in the project cost by Rs 2,838 crore. The submarine design selected had not proven its efficacy in any other navy. The contractual provisions resulted in undue financial advantage to the vendor of a minimum of Euro 58.20 million AR.349Trore) besides other unquantiflable benefits.

In October 2005, Ministry accorded sanction for the construction of six 'Y' class submarines at MDL[13] at a total cost of Rs 18,798 crore including Rs 12,210 crore in Foreign Exchange (FE). Based on the sanction, two contracts were concluded in October 2005 between M/s `A', a French firm and M/s MDL and between M/s MDL and Government of India (Government) for construction of these submarines at a total cost of Rs 12,022.34 crore. A third contract was signed between Government and M/s `B', France for acquisition of `S' missiles weapon system at a cost of Rs 1,061.9 crore. The vessels were targeted to be introduced between 2012 and 2017. Audit examination of the acquisition from initiation till culmination revealed the following:

I. Delay in finalisation of acquisition

Indian Navy, in 1985, envisaged a force level of `N' number of submarines by the year 2000. Accordingly, the Competent Financial Authority (CFA) in August 1999 approved a project for series construction wherein fifty *per cent* of the envisaged force level was to be constructed during the first phase (2000-2012) and the balance in second phase (2013 -2030). It took almost a decade, after formulation of NSQRs, to finalise the contract for construction of 25 *per cent* of the envisaged force level. Resultantly, the first submarine is likely to be inducted by 2012 only by which time the inventory of the operational submarines available for the Navy would be at its lowest ebb. This would lead to serious operational ramifications.

II. Unfruitful effort on indigenous design

Subsequent to the commissioning of the first `X' class submarines in 1986, Submarine Design Group (SDG) of the Indian Navy undertook the task of finalising an indigenous conventional submarine design based on the `X' class design. In February 1997, the CFA accorded formal approval for the indigenous construction of two submarines with the design being developed by the SDG and validated by M/s `U', France. However, the project was abandoned in 1998. The `Y' submarine deal that ensued has an outsourced design and material package with indigenous content in value terms limited to 35 *per cent.* Thus, the objective of constructing a submarine with an indigenous design stood abandoned.

[13] MDL - Mazagaon Dock Limited

III. Vendor selection

Since 1990s, Navy had been exploring different avenues for acquiring a Tube Launch Missile (TLM) with the potential of retro-fitment on the existing submarines in its inventory. Towards this end, Ministry identified three firms for missile installation and retro-fitment and selected M/s `T', France[t4]. *This* decision was taken on the grounds that the firm would also be able to supply the particular class of TLM missiles required for the submarines. The French Government, in September 1999, made the offer of release of the TLM missile to the Indian Navy conditional upon substantial involvement of French interest in the submarine construction programme and refused to release the missile in case the prime foreign collaborator was not a French Company. As the indigenous submarine construction programme had been shelved, Mls `T', France, became the sole firm involved in different aspects of either submarine construction or upgradation of existing submarine combat capabilities.

IV. Acceptance of Design

As per Defence Procurement Procedure 2002, submarine should be trial evaluated in Indian waters or the design should be validated through computer simulations and model testing before accepting proposal for submarine. This was to enable the evaluation of the performance of the submarine with reference to Naval Staff Qualitative Requirement (NSQRs). Ministry accepted the unproven design of the `Y' submarine based on the validation of the design through computer simulation, despite the fact the design of the `Y' submarine had not proved its efficacy in other navies.

The provision for compensation to the maximum extent of Euro 710 million (Rs 4,260 crore) for the first two submarines in case their performance does not match NSQRs would not fully cover the Rs 11,142 crore that would have been invested towards the construction of the submarines.

V. Technical Evaluation

Audit examination of the technical evaluation undertaken for the submarine and missile revealed the following deficiencies:

(a) **Submarine -** Deviations were noticed in respect of parameters such as diving depth, speeds, endurance, noise levels, meta centric heights etc as compared to the NSQR. However, Navy, in April 2001, accepted the technical evaluation in the offered configuration after clarifications were given by the respective directorates and on the basis of further technical discussions held in December 2000 with the French delegation. Audit noticed that no fresh compliance report was prepared after final technical discussions so as to ensure that all the deficiencies in the parameters had been addressed by the French side. More importantly, given the long time-span for construction and induction, the submarines with a potential operational life of about 20 - 25 years, will have to persist with this technology offered by the submarine builder in the absence of any modifications during the future construction activity.

(b) **Missiles** - The NSQR for the TLM missile, prepared in 1992, projected a range of `M - N' Km/Nm. Although it was the requirement of the missile that guided the choice for a particular class of submarine, Navy accepted the missile with reduced range by amending the NSQR.

VI. Price escalation

The submarine project cost increased from Rs 12,609 crore since the initial price negotiations in October 2002 to Rs 15,447 crore by October 2005 when the contract was finalised. . The increase in cost was primarily due to escalations and Exchange Rate Variations (ERV). Further, the cost of the `S' TLM was negotiated at Euro 174.45 million in 2002 but had escalated, even after a discount of 1.03 *per cent* by the vendor, to Euro 201.5 million by the time the contract was firmed up in October 2005. The inaction in concluding the contract for three years led to an escalation in the price of submarines by more than Rs 2,800 crore and to an additional Euro 27.05 million commitment on the procurement of the missiles.

VII. Concessions to the vendor

Wide-ranging negotiations were carried out between Ministry and NHQ personnel on one side and vendor on the other for the contract concluded between MDL and M/s `A' to supply the six combat systems. A summary of concessions extended to the vendor is tabulated below:

Warranty	Separate bank guarantees were to be provided for performance and warranty. By providing a combined guarantee, the vendor avoided providing a warranty of Euro 58.20 million.
Performance Bank Guarantee (PBG)	As per contract, PBG was 5 *per cent* of the Basic Price (BP) for specified period and would be reduced to 1 *per cent* of the BP on signing of the Sea Acceptance Trail protocol of the second submarine or 96 months after Signed Date of Contract (i.e December 2013), whichever is earlier. This deviated from the DPP requirement of 5 *per cent* of the BP and validity of three months from the date of receipt of last consignment. By offering a discount of Euro 0.8 million the vendor had limited his liability for poor performance to one *per cent* for 48 months after December 2013.
Escalation Formula	Elements such as Transfer of Design Document, Technical Data Package and License and System Engineering have been included in the escalation formula, though these elements should have been kept out as these activities are generally completed within the first few years of the project. These accounted for 11.06 *per cent* escalation.
Arbitration Clause	As per the DPP, arbitration proceedings shall be

	conducted in India under the Indian Arbitration and Conciliation Act 1996, whereas, the contractual provision stipulated that all disputes arising out of or in connection with the contracts shall be settled by arbitration in Geneva, Switzerland according to the rules of Arbitration of the International Chamber of Commerce. Given that claims were likely to be dropped due to the higher fees payable for International Arbitration, leverage for Indian side stood reduced.
Agency Commission	This clause was not included though DPP stipulates its inclusion in the contract so as to initiate penalty for undue influence.
Liquidated Damages (LD)	DPP envisaged imposition of LD at the rate of 0.5 per cent for every week, whereas, the rate of LD incorporated in the contract is 0.5 *per cent* per completed month.
Adherence to Performance Parameters	Specific provisions exist regarding imposition of LD in case Main Performance Parameters are not met. However, since either the limits gave ample room to the vendor to achieve the target or they have not been quantified, the formalisation of this safeguard has been inadequate.

VIII. Warranty for the Missiles

As per contract for missiles, the seller warranties the equipment /materials for eighteen months from the completion of the corresponding Factory Acceptance Trials or twelve months from delivery, whichever is later. The performance guarantee is valid until effective date of contract plus 106 months. The missiles are to be delivered in four batches of nine each from the 70^{th} to the 106^{th} month. Since the actual fitment of the missile on the first submarine is likely to be completed only after 84 months as per the scheduled date of delivery, the warranty for the missiles likely to be delivered in the first two batches will expire before their commissioning and the warranty for the remaining missiles will be effective for only a partial period. By synchronizing the delivery of the missile with the delivery of submarine, the warranty clause incorporated in the missile contract has been rendered ineffective.

IX. Contract Execution

As per contract, first submarine is to be delivered by December 2012 i.e. on completion of 84 months from the Effective Date of Contract (EDC). Though construction activities for the first submarine commenced in December 2006, progress achieved up to December 2008 was merely 9.34 *per cent* as against the envisaged achievement of 27.43 *per cent.* In particular, procurement activities were lagging behind. Further, despite the contractual provisions that only up to 18 months from EDC i.e up to March 2007 release of payments were to be made

from rolling imprest, these payments were continued till March 2008. Ministry stated in reply to this audit observation, in December 2008, that milestone - based payment has been put in place from May 2008.

To sum up, over nine years were taken to finalise the contract. Apart from the price escalation, it is also likely to adversely impact the operational capability of the Navy. The Ministry / Naval HQ scaled down the original technical specifications and extended undue financial benefit to the vendor.

The matter was referred to Ministry in September 2008; their reply was awaited as of January 2009.

2.3 Infirmities in contracts for purchase of an aircraft

It took 22 years to finalise contracts towards fulfilling the felt-need for inducting an aircraft to meet essential training requirements of the IAF Pilots. The supply and production of the aircraft was based on Air Staff Requirements that were not reviewed since their issue in 1987. The restriction in utilisation of aircraft would compromise operational and training requirements.

Government, in March 2004, concluded five contracts with M/s `A' and one contract with M/s B' to procure 24 aircraft `V' in flyaway condition and for manufacture of 42 aircraft `V' and 51 engines `M' under license agreement by Hindustan Aeronautics Limited (HAL) at a cost of Rs 6,176.03 crore. Pursuant to this, IAF, in February 2007, concluded a contract with HAL for supply of 42 aircraft `V' for Rs 1,944 crore. Delivery of fly-away aircraft by M/s `A' was to be completed by February 2008 while HAL-manufactured aircraft `V' were to be supplied between March 2008 and March 2011. As of December 2008, M/s `A' had supplied 23 aircraft `V' while HAL has delivered one aircraft `V'. Detailed findings follow:

I. Inordinate delay in finalisation of contract

Mention was made in Para 2.9.4.1 (iv) and (v) of CAG's Performance Audit Report No. 5 of 2008 that IAF could finalise procurement of aircraft `V' only in 2004 although the need for trainer aircraft was felt as early as 1982. Inordinate delay in acquisition of these trainer aircraft had impacted pilot training adversely as the aircraft, besides being vital for air safety, is considered essential for improving the skill levels of IAF pilots graduating from low speed trainers to advanced high performance fighter aircrafts in the IAF.

Ministry stated (December 2008) that lack of the trainer aircraft was mitigated by increased intensity of supervision by Flying Instructors. Audit, however, noticed that out of 259 aircrafts that were lost between 1992 and 2003, IAF had lost 101 aircrafts (costing several hundred crore[15]) which was officially attributed to human error.

II. Contract concluded on single tender basis without review of Air Staff Requirements

IAF initiated the tendering process three times, i.e in 1986, 1992 and finally in 1999. It was only by March 2004 that a contract could be formalised for acquiring aircraft `V'. It was observed that:

- The ASR issued in 1987 had not yet been formally reviewed at the time of issue of RFP in 1999.
- In response to the revised RFP issued in July 1999 to M/s `A' and M/s `D' only M/s `A' responded and, thus, became the lone vendor. In 1986, during a comparative evaluation with the `N' trainer, aircraft `V' had been shown to have fatigue life of 4,000 hours only while the `N' trainer had a fatigue life of 10,000 hours. However, the revised RFPs that were issued in July 1999 did not specify the fatigue life of aircraft for flying training and tactical weapon training. As a result, the aircraft `V' was technically accepted with the offered fatigue life of 6,000 flying hours.
- The acquisition contract was finalised with M/s `A' in March 2004, without confirmation of warranty bond from any authorised Indian Banks and without furnishing performance or warranty bonds for license agreement and contracts for services to HAL.

Ministry stated (December 2008) that ASRs for fighter trainer class of aircraft remain fairly applicable for decades. However, as per IAF rules, the ASRs in general, are relevant for ten years. Moreover, the Special Committee which had recommended the optimised training model for IAF had stated that the model should not be treated as binding for longer periods, and, the Standing Committee on Defence in 1999 had insisted that the ASRs for the trainer aircraft be reviewed.

Ministry further stated that the performance bond and bank guarantee clauses were based on the then prevailing DPP 2002 and that offset clause was not mandatory. The Ministry added that ex post facto sanction for these deviations was accorded by the competent financial authority (CFA) in October 2005. But the fact remains that the liquidated damages and offset clauses deviated from the standard clauses of the contract and the RFP issued in 1999 and that no Indian authorised bank holds guarantee/warranty bond against M/s 'A'.

III. Limitation on operational role

Aircraft `V' has primary role of Lead-in-Fighter Trainer with a secondary role of operational engagement during hostilities. To achieve the fatigue life of 6,000 hours, aircraft `V' had to be flown to a spectrum mix of 60 *per cent* flying training and 40 *per cent* tactical weapon training. However, pending development of Software Development Environment and integration of Electronics Weapons suite, aircraft `V' would not be available for tactical weapon training. Therefore, the tactical flying hours (40 *per cent* of flying hours) would accumulate.

Ministry stated (December 2008) that weapon delivery flying is part of training course and if the actual exploitation of aircraft is milder/more aggressive, then the fatigue life will be greater/lesser than 6,000 hrs respectively and that the fatigue life can be maximised through appropriate fleet management.

[15] Unit cost of aircraft: (i) MiG 21 variants: Rs 7.50 crore to Rs 15 crore (ii) MiG 23 BN: Rs 33 crore (iii) MiG 29 aircraft: Rs 55 crore (iv) Jaguar Twin Seater Rs 95 crore (v) Jaguar Single Seater: Rs 109.50 crore (vi) Mirage-2000: Rs 150.54 crore

IV. Interim flying training arrangements

IAF initially proposed to acquire 24 used aircraft on lease to meet the shortfall of training requirement in July 1999 pending actual delivery of aircraft `V'. Later, however, it was decided to train 75 pilots at M/s `A' in country X.

The main objective for training of IAF pilots in country `X' was to reduce flying training load on other Operational Flying Training Units due to capacity constraints as well as to build up expertise on aircraft `V' in India. However, due to depletion of other trainer aircrafts, restriction in utilisation of aircraft `V' and delay in manufacturing of aircraft, the available flying training hours on aircraft `V' would be much less than what was deemed necessary. Ministry admitted (December 2008) the inadequacy of the flying training hours on aircraft `V' but added that training needs had been fulfilled by using other aircrafts.

V. Acquisition of Synthetic Training Equipments

Synthetic Training Equipment (STE) is a prerequisite for many training sorties in flying training syllabus and has a crucial role in the achievement of the objective of training pilots for advanced jet flying. Audit observed that piecemeal approach in the acquisition of these systems had resulted in delay and cost over-run as indicated below:-

- In August 2006, Air HQ projected a requirement of additional two full-mission dome simulators on the ground that the number of STE devices contracted for already were insufficient and had limitations to conduct the desired training.

- Air HQ, in May 2007, also revised the requirements for equipment to be used with the STE, i.e. commercially off the shelf (COTS) equipment was found to be superior to the contracted Military grade equipment as these were stated to be incapable of meeting operational requirement.

- Air HQ, in April 2007, requested M/s `A' to develop a functionality whereby STE could share memory with Mission Planning and Debrief System.

- Computer Aided Learning System (CALS) produced by sub vendors, scheduled for delivery by September 2007, were found unacceptable. As of December 2008, only 11 out of 125 lessons/courseware for CALS, were ready for review and status of other courseware was not known. Hence, the commissioning of interim training facilities was not considered feasible while the pending task of upgradation and finalisation of courseware for STE was yet to be finalised.

Ministry stated in December 2008 that requirement for additional dome simulators were projected strength; that COTS equipment was always better than military supply and was contracted to bridge the gap between the actual capability of the equipment and the operational aspiration of the IAF; and, courseware upgradation applies only to CALS system for ground crew training and that STE were not affected. The reply brings out the absence of a holistic approach even in an acquisition process of significant magnitude.

VI. Pricing anomalies of spares

Due to delayed fmalisation of certain spares for maintenance support of aircraft after the signing of contract in March 2004, it was decided that M/s `A' would provide the list of these supplementary spares within five months of the contract. However, the list of these spares could not be provided till May 2006 and an agreement was concluded in November 2007 for these spares with M/s `A' agreeing to expedite their delivery. Scrutiny of prices charged by M/s `A' for these spares revealed that firm had charged excess amount of UKP 837,108 (Rs 6.44 crore) for the fixed spares, as the pricing was done for each line item based on unit price and contracted rates were not implemented.

Ministry stated in 2008 that M/s `A' was allowed to amortise the administrative cost of spares estimation using Proprietary Reliability and Maintainability data in the cost of spares. The reply is not tenable as the provision of such amortisation is neither included in the contracts finalised with MIs `A' in 2004 nor was such a fact brought to the notice of the CFA.

VII. Slippages in delivery schedule

The delivery programme of the 24 fly away aircraft `V' was running late by a year on account of various factors including internal issues at M/s `A'. Besides, the 23 aircraft delivered by December 2008 had been accepted with certain limitations in the instrument `R' which was being attended to (December 2008).

The contract for license manufacture of 42 aircraft `V' by HAL had a staggered delivery schedule according to which one aircraft was to be supplied in 2007-08, 14 aircraft by March 2009, 24 aircraft by March 2010 and remaining three aircraft by March 2011. The manufacturing programme for the 42 license built aircraft began on 30 April 2004 and was planned to be completed by 2012. HAL delivered one aircraft `V' in August 2008, after a delay of seven months. Ministry stated in December 2008 that HAL had faced a number of technology absorption issues for the manufacture of aircraft `V', which resulted in delays. Most of these issues, the Ministry added, had been resolved and that HAL were in process of redrafting delivery programme to clear the backlog and protect the IAF training programme.

To sum up, the contract for supply and licensed production of 66 aircraft `V' signed through M/s `A' for Rs 8,120 crore was based on ASRs that were not reviewed since their issue in 1987. The fatigue life of aircraft was achievable only on certain specified conditions resulting in compromise of operational and training requirements. Besides, aircraft `V' would not be available in an operational role for significantly long period due to the pending upgradation procedures.

2.4 Delay in the manufacture and supply of a Trainer Aircraft

Delay in manufacture and supply of a trainer aircraft has denied the pilots the stage 11 training opportunity on these aircraft. Advances released to HAL to the extent of Rs 283.05 crore stand blocked and have remained unproductive so far.

Report No. CA 18of 2008-09 (Air Force and Navy)

In March 2006, the Ministry concluded a contract with HAL for the Limited Series Production and supply of 12 trainer aircraft, along with associated spares, accessories and a simulator at a total cost of Rs 486.81 crore to be delivered in batches during 2008-2010. These LSP[16] aircraft were to urgently replace the older aircrafts for stage II training of pilots.

Scrutiny of documents related to the contract revealed the following:

- In July 1999, Ministry had, accorded sanction for the design and development of two prototypes of the trainer aircraft by HAL for the IAF at a total cost of Rs 180 crore. This was later revised to Rs 467 crore in April 2005 primarily due to change in engine of the aircraft. Ministry had released Rs 221.08 crore till 31 March 2005. The Ministry's sanction order stipulated that the balance amount of Rs 246 crore was to be released in stages on completion of each of the three remaining milestones. The first of the milestones, the signing of the contract with the Russian firm and the development of the Higher Thrust engine was delayed. The other two milestones, Initial Operational Clearance (IOC) and the Final Operational Clearance (FOC), originally scheduled to be completed during 2006-07 and 200708 were postponed to 2009-10 and 2010-11 respectively. Yet, Rs 233 crore out of the balance Rs 246 crore was paid to HAL during the period 2005-08.

- Another contract was concluded in March 2006 with HAL -for envisaged supply of 12 trainer aircraft between March 2008 and March 2010. Although the prototype development itself had been pushed to 2010-11, the Ministry did not revise the payment and delivery schedule (2010) of the aircraft but paid Rs 283.05 crore, i.e 58 *per cent* of the contract value till June 2008.

- Although the Government had advanced more than Rs 737 crore since 1999 for the acquisition of trainer aircraft, there was no assurance that HAL would be able to manufacture and supply them in the next three years.

In sum, HAL had not been able to make timely progress in the development and supply of trainer aircraft to IAF to meet its urgent requirement. Further the requirement of the IAF for trainer aircraft in providing Stage H training to its pilots on these aircraft also stood compromised.

The matter was referred to Ministry in September 2008; their reply was awaited as of January 2009.

[16] LSP - Limited Series Production

2.5 Procurement of an aircraft at inflated cost

Ministry placed an LOI on HAL in August 2000, for supply of 20 aircraft `L' and released advances without finalising the equipment to be fitted on the aircraft and before obtaining approval of the competent authority. The contract was concluded much later in March 2006. The payments on account of the contract resulted in an additional expenditure of Rs 297.69 crore.

The Ministry issued two Letter of Intents (LOI), one for 17 aircraft[17] 'K' and the other for 20 aircraft[18] 'L', to Hindustan Aeronautics Limited (HAL) in March 1999 and August 2000 respectively. Contracts for the manufacture and supply of both the types of aircraft (Rs 109.50 crore per aircraft `L' and Rs 95 crore per aircraft `K') at a total cost of Rs 3,805 crore were March 2006. The Ministry had issued the LOI for the aircraft `L' with the intent to enable HAL to initiate action relating to planning and procurement of material. The aircraft were to be delivered between 2004-05 and 2007-08. Audit scrutiny of the acquisition records revealed the following:

I. LOI placed and 'on account payments' released without approval of CFA[19] and before finalisation of SOP. The finalisation of contract took six years after the issue of LOI

- The Ministry issued the LOI for the 20 aircraft `L' in August 2000 without the approval of CFA. Further, Rs 704.32 crore was released to HAL in 2004-05 `on account' without either the approval of CFA or finalisation of contract.
- The finalisation of Standard of Preparation (SOP)[2°], for both types of aircraft, was linked to the design and development of the upgrade for the Navigation and Weapon Aiming Sub System (NAWASS). Although the SOP for NAWASS version was finalised in July 2003, the SOP for aircraft `L' was finalised after two years, in August 2005. It was only in March 2006 that the CFA approval was obtained and the contract concluded. Thus, Ministry took six years to conclude the contract after issuing the LOI.

II. Improper costing resulted in unjustified escalation in price

Contracts for both types of aircraft, viz aircraft `L' (Rs 109.50 crore per aircraft) and aircraft `K' (Rs 95 crore per aircraft), were concluded in March 2006. Audit compared these two contracts and found:

(a) *Final cost did not fully account for deleted items:* In arriving at the final cost of the aircraft `L', while addition of equipments as compared to the aircraft `K' was taken into account, the net cost of the items totalling Rs 0.93 crore that were deleted was not adjusted from the per aircraft cost of Rs 109.50 crore. This led to an avoidable additional expenditure of Rs 18.60 crore for 20 aircraft 'L'.

[17] Aircraft 'K' – Twin seater } Two variants of
[18] Aircraft 'L' – Single seater } same aircraft

(b) *Exchange Rate Variation (ERV) allowed was unjustified:* The majority of the items for the aircraft `L' programme were procured and received by HAL between 2000-01 and 2004-05. However, the Foreign Exchange (FE) rate prevailing on 15 December 2005 was adopted for calculating cost of FE element of imported material. This was not justified as the FE rate applicable on the date of procurement of material ought to have been taken into account. In the analogous portion of the aircraft `K' contract, the cost of imported material was on a base rate with compensation being given for variations from this rate. By allowing the additional ERV element, the objective of issuing the LOI early so as to facilitate better price management in procurement of materials was diluted and resulted in additional benefit of Rs 178.60 crore to HAL.

(c) *Excess Payment* of Profit: Under the contractual terms for the aircraft `L', no profit was to be allowed on ERV, taxes and duties. Audit, however, observed that Ministry irregularly allowed the charge of profit element of 12.5 *per cent* on ERV, freight and insurance. This led to an undue advantage of Rs 64.3 crore to HAL.

Air HQ informed audit, in May 2007, that cost differences on account of material and labour costs between the trainer and fighter aircraft had been factored in while negotiating the price of the aircraft `L'. Air HQ further stated that certain additional features were also incorporated in the aircraft 'L'. The reply is not specific to the points raised by audit.

III. Wide variation in rates of spares

Spares and TTGE[21] for the aircraft `L' worth Rs 249.74 crore were contracted. Rate analysis of spares and TTGE in respect of two contracts concluded in March 2006, revealed wide variation in prices of 100 lines of spares and TTGE, having same section reference/part number. The cost of spares and TTGE in respect of aircraft `L' was higher than those in aircraft `K' and led to additional expenditure of Rs 10.70 crore. Further, out of an advance of Rs 132.04 crore paid to HAL for supply of spares and TTGE, only Rs 78.92 crore stood adjusted till 31 March 20008.

IV. Undue benefit to HAL on account of advances released

Ministry had reimbursed HAL financing cost totalling Rs 79.20 crore for aircraft `L' project for the period 2000-01 to 2005-06. Audit, however, observed that:

- Ministry had paid Rs 704.32 crore and Rs 675.09 crore to HAL in 2004-05 and 2005-06 respectively against the expenditure incurred.
- The reimbursement of Rs 79.20 crore included interest on investment amounting to Rs 0.45 crore from April 2000 to August 2000 although the LOI was placed on 25 August 2000.
- HAL was in possession of substantial advance of Rs 1,028 crore from Government from the aircraft `K' contract. However, this fact was not considered while releasing/negotiating payments for aircraft `L' contract.

[19] CFA - Competent Financial Authority
[20] A document describing the type of equipment/systems to be fitted on the aircraft

- HAL had earned interest of Rs 352.78 crore upto 2004-05 on advances towards the programme for aircraft `K'. However, the amount was remitted to Government account only in March 2006. The additional interest earned and retained by HAL because of the late remittance worked out to Rs 25.04 crore.

To sum up, Ministry issued LOI on HAL for the manufacture and supply of aircraft `L' in haste without obtaining the approval of the CFA. The finalisation of the SOP was delayed and the contract with HAL was finalised six years after the issue of the LOI. Contractual clauses and release of payments revealed significant dilution of financial and budgetary control. Against the scheduled delivery of the 20 aircrafts by March 2008, only 11 aircraft have been delivered.

The matter was referred to Ministry in September 2008; their reply was awaited as of January 2009.

2.6 Absence of due professional care in awarding a contract for Rs 798 crore

While awarding a contract worth Rs 798 crore for the construction of Hydrographic Survey Vessels, Ministry/Indian Navy compromised on basic criteria, both at the stage of short-listing vendors as well as at the stage of final selection. The choice of the shipyard was faulty as its past performance was mediocre, it had no history of constructing such sophisticated ships and it was financially ill-equipped to handle a project of such magnitude.

The Hydrographic Survey vessels of the Indian Navy (IN) carry out hydrographic surveys to collect data for ensuring safe navigation. Government sanctioned acquisition of six survey vessels in December 2006 for Rs 797.81 crore. The vessels were to be of a totally new modern design based on a `catamaran' hull. A contract for fabrication and supply of the six survey vessels was concluded in the same month with a state Government undertaking, Alcock Ashdown (Gujarat) Limited (AAGL), Bhavnagar, Gujarat. The vessels were scheduled to be delivered between December 2008 and March 2010. Results of audit scrutiny of records related to the acquisition were as under:

I. Selection process

a. *Short-listing of shipyards lacked objectivity and transparency*

Although survey vessels in the past, were constructed by two Defence shipyards, namely GRSE[22] and GSL[23], an RFP was issued (July 2005) to eight short-listed shipyards, comprising four Defence PSUs (DPSU), one central PSU, two private shipyards and one state PSU. Audit examination revealed:

[21] TTGE - Tools, Testers and Ground Equipment

☒ Reasons for inclusion of the two private and the state public sector shipyards in the short list were not on record.

☒ No exercise for pre-qualification of the shipyards for the defence projects was undertaken. Though the draft RFP was jointly vetted by IN/ Ministry, no objective criterion viz, past experience of constructing such vessels, financial viability, availability of skilled human resource and adequate infrastructure etc. was applied as the basis for short-listing before approving the proposal for issue of RFP to the short-listed shipyards.

☒ The following facts make the decision not to limit the choice to defence shipyards questionable:

- Defence shipyards had prior experience of building survey ships that had to be fitted with hydrographic and sonar equipment and also armaments.
- Defence shipyards had spare capacity.
- Department of Defence Production and Supplies had already nominated GSL, a defence shipyard as the designated production agency.
- Defence shipyards already had in place a Warship Overseeing Team (WOT) for close monitoring of the construction of ships. In the instant case, Rs 6.60 crore was spent on account of Project Management as AAGL did not have a WOT in position.

b. Selected shipyard lacked capability

The Assistant Chief of Naval Staff issued instructions in July 2005 to evaluate the yards short-listed with due care after considering their financial wherewithal, installed capability to integrate ship systems, shore infrastructure for supporting expeditious construction and internal quality systems to ensure quality ships. It was also indicated that though the less capable yards may under quote to gain Ll status, they would not be able to meet the quality standards and delivery schedules. As such, their proposals were to be scrutinised thoroughly before award of the tender.

Scrutiny of the audited financial statements of AAGL as at the time of short listing indicated that the firm had a turnover of less than Rs 51 crore in the preceding three financial years with an order book position of less than Rs 50 crore in the previous year (2004-05). However, Ministry awarded AAGL the contract for Rs 797.81 crore, an amount that represented more than 15 times the yearly turnover of the firm.

II. Awarding of Contract

a. Application of due professional care not evident

Against the RFP issued to eight yards, four shipyards responded out of which two did not furnish the required break-up of costs and were, therefore, liable to be rejected. However, the Contract Negotiation Committee (CNC) proceeded to evaluate them. Audit found that:

22 Garden Reach Shipbuilders and Engineers, Kolkata
23 Goa Shipyard Limited

- ➞ CNC determined AAGL as Ll prior to submission of detailed cost break-down.
- ➞ AAGL had quoted Rs 111 crore per vessel inclusive of sales tax. However, subsequent to being declared L1, CNC allowed the firm to change the quotation during its meeting by excluding the sales tax from the quote. As a result, CNC gave undue advantage of Rs 4.44 crore to the firm.

Comparison of the AAGL bid with other bids indicated that the award was questionable on many counts. Although the Foreign Exchange (FE) content er ssel given by AAGL (Rs 89.25 crore) was higher, the cost per vessel given by AAGL was the lowest. Further, AAGL had hardly made any provision for indigenous equipment while other bidders had made provision of Rs 19 - 22 crore for them. AAGL quoted only Rs 4.63 crore per ship for Material, Equipment, and Labour overheads while two other vendors quoted Rs 15 crore and Rs 21.89 crore. Given the instructions regarding deliberate under-quoting, particularly in the light of the weak financial position and the lack of experience of the shipyard, these issues ought to have raised enough doubts as to the capability of the shipyard to supply the vessels at the cost quoted by them. The foregoing details would make the application of due professional care in awarding the contract to AAGL questionable.

III. Contract execution: Failure to achieve milestones

(a) *Designs delayed* - The detailed design was expected to be finalised in October 2008, however, it could not be finalised up till December 2008. Resultantly, the delivery of the first vessel was likely to be delayed further. AAGL did not have its own technical expertise in the area of designing but was relying on a foreign collaborator. Although Navy was aware that AAGL was a vendor with doubtful technical expertise at the time of bidding itself, a binding contractual term spelling out the role and responsibilities of the design partner was not sought for by the Navy.

(b) Progress of *construction delayed* - In its first progress report submitted in March 2007, AAGL gave the detailed schedule dates of completion for the major activities of the project. Audit compared the achievement of the firm *vis-a-vis* schedule dates of completion. The yard had given 48 targeted dates for accomplishment of major activities. Of these, 44 activities were to be completed before 31 December 2008. However, only four of these activities had been completed by December 2008, albeit belatedly.

(c) *Latest monitoring reports* of *Naconfirm unsatis acto?y performance* WOT in its progress reports had also established the vulnerable financial position of the shipyard and disappointing performance in delivery of ships to other customers. Navy stated (May 2008) that the cash flow situation of the yard, which was poor right from the outset, continued to be poor. Even after increase of the equity by Government of Gujarat and project stage payments from Ministry, the yard was unable to ensure adequate cash flow and opening of Letters of Credit (LCs) for procurement of equipment, including critical pre-launch/long lead items.

Thus, the established weak technical and financial capacity of the awardee to successfully undertake the construction and supply in time of six survey vessels was doubtful. The project was behind schedule and further slippages could not be ruled out. As such, the objective of collecting data by survey vessels to ensure safe navigation had not been achieved yet. The

application of due professional care in the process of awarding the contract of Rs 798 crore to AAGL was also questionable.

The matter was referred to Ministry in September 2008; their reply was awaited as of January 2009.

2.7 Denial of Offset benefits of Rs 2,711 crore in acquisition of an aircraft

In placing the order for the acquisition of 40 aircraft `M' costing Rs 9,036.84 crore, Ministry/ IAF failed to go in for the offset clause as stipulated in the DPP. This lead to the denial of corresponding benefit, amounting to Rs 2,711 crore, to Indian defence industry. The objective of urgent acquisition has also not been achieved.

In order to arrest the declining force levels of the Indian Air Force (IAF), Ministry concluded a contract with Hindustan Aeronautics Limited (HAL) in March 2007 for the supply of 40 aircraft `M' with associated equipment at an aggregate cost of Rs 9,036.84 crore. The aircraft were to be delivered in a phased manner between 2008-11. Audit examined the connected documentation relating to the acquisition and found that:

I. Procurement procedure deviated from DPP; classification of the acquisition was incorrect and failed to take advantage of the offset clause

The Defence Procurement Procedure (DPP 2006) requires that acquisitions be classified under one of the three categories: `Buy (Indian)', `Buy and make with ToT[24]' or `Buy (Global)' [25]. In the case of the latter two categories, an offset clause [26] would be applicable when the indicative cost is above Rs 300 crore. While presenting the case for approval to the Competent Financial Authority (CFA), Ministry / Air Headquarters (Air HQ) categorised the procurement as `Buy (Indian)' from HAL on the grounds that this procurement was a repeat order for equipment / system which has been developed through ToT. Such a classification was incorrect and provided undue benefits to the foreign supplier by enabling it to avoid the liabilities of an offset procedure at as discussed below.

- The categorisation `Buy (Indian)' implies that the indigenous content is a minimum of 30 *per cent* when the systems are being integrated by an Indian vendor. However, in the contract concluded, the indigenous content was only five per cent with 95 per cent of material being imported.

[24] ToT - Transfer of Technology

[25] `Buy' decisions involve outright purchase of equipment. In case of `Indian', the item can be procured from only Indian vendors. If the Indian vendor is only 'integrating the system, then indigenous content should be minimum 30 *per cent.* `Global' implies that the item can be procured from either foreign or Indian vendors. Buy (with ToT) involve purchase from foreign vendor followed by licensed production by an indigenous agency after Transfer of Technology (ToT).

[26] Para 22 of DPP 2006 regarding the offset clause, mandates that 30 *per cent of* the cost of military purchases has to be reinvested in the country.

- HAL had already undertaken (December 2003) to `manufacture and supply' 140 aircraft `M' under Licensed Production with ToT facility. The procurement of the 40 aircraft `M' was projected as a repeat order even though the benefit of the ToT clause was not available under this order nor did HAL have the capacity to manufacture these additional aircraft in the time-frame desired by JAR Despite being classified as `Buy (Indian)', the scope of the contract was defined as `sell and deliver' as distinguished from the scope `manufacture and supply' that governed the 140 aircraft `M' under Licensed Production.
- The price negotiation with the Russian Original Equipment Manufacturer (OEM) was done vis-a-vis a contract concluded in 2007 for `Swap' of older `M' aircraft with newer version, i.e prices negotiated were with reference to direct supply of aircraft from OEM rather than manufacture by HAL.
- While initiating the acquisition, Air HQ had recommended that the procurement of aircraft be done directly from Russia as this would result in early delivery of the aircraft.

Thus, as a result of the incorrect classification, Indian industry was deprived of the benefits of the offset obligation to the extent of Rs 2,711[27] crore. ` Air HQ informed (May 2008) that gainful absorption of offset would not have been possible within the time frame in which these aircraft needed to be inducted. The facts remain, however, that IAF did not have any funds allocated for this acquisition and diverted funds from other programmes; that the delivery of the aircraft have been pushed from the year 2011 to 2012; and, that as against eight aircrafts to be delivered in 2008-09, only two have been delivered up to February 2009.

Ministry stated in October 2008 that classification of the procurement was discussed by the Defence Acquisition Council (DAC) and it was decided to procure the aircraft under `Buy (Indian)' taking into account relevant considerations of urgency of procurement, indigenous content and price link with the Swap Deal. Ministry added that insistence on offset would have delayed negotiations, negated the price advantages of the Swap deal and impacted upon delivery schedules. The contention of the Ministry is not acceptable in principle as adherence to the DPP 2006 is mandatory. The following further deviations were noticed in audit:

- The advice of the DOFA[2s], set up under DPP 2006 in July 2006, as a single window agency to facilitate implementation of the offset policy, was not obtained in the matter.
- DAC had not been empowered to supercede the provisions of the DPP. In case of a felt-need for a waiver of the implementation of the offset clause in the procurement as stipulated by the DPP, approval of CFA needed to have been obtained.

[27] The contract value is Rs 9,037 crore. With 30 *per cent* as offset obligation, the financial *value of the same in ahsolute terms is Rc 2,711 crore.*

- Further, the offset obligation could have been discharged through direct purchase of goods and services from Indian defence industries, direct foreign investment in Indian defence industries for industrial infrastructure or in Indian organisations engaged in research in defence sector etc.

II. Involvement of HAL in the contract did not deliver any benefit to the Government

The contract envisaged delivery of the 40 aircraft `M' in three phases. The activities assigned to HAL in each phase were as under:

SI. No.	PHASE	NUMBER OF AIRCRAFT	PARTICULARS
1.	Phase 1+	20	Technical Kit already flight-tested in Russia would be assembled by a Russian team (at HAL), flight tested by a Russian pilot and handed over to HAL.
2.	Phase 1	16	Technical kit would be supplied to HAL, assembled by HAL and painted would be carried out by HAL.
3.	Phase 2	04	Aircraft assembly, system checks, fitment of engines, aircraft alignment, ground and flight checks and painting would be carried out by HAL.

As can be seen, excepting for four, HAL would not have a major role to play in the manufacture of these aircraft. Further, HAL had already obtained the benefit of ToT in terms of the Licensed Production of 140 aircraft `M' and was operating under maximum capacity utilisation. Thus, it would appear that involvement of HAL was only to obtain `Buy (Indian)' classification for the project. Had these aircraft been procured directly from the OEM over-head charges and profit to the extent of Rs 60.48 crore payable under the schedule of payment with HAL could have been avoided.

[28] DOFA - Defence Offset Facilitation Agency

To sum up, the procurement process for 40 aircraft `M' deviated from the DPP. The deviation enabled the foreign vendor to bypass the DPP offset obligations thereby depriving Indian industry of financial and technical benefits. Further, owing to inadequacies in the procedure adopted, HAL would be getting an unearned benefit of Rs 60.48 crore by way of overhead charges. The fundamental objective of urgent acquisition has also not been achieved as even under the extended schedule only two aircrafts had been delivered (February 2009) as against eight due during 2008-09.

2.8 Inept execution of `D' level repair and maintenance facilities at HAL

Government while sanctioning the creation of `D' level radar repair facilities at HAL at a cost of Rs 89.27 crore failed to ensure that HAL passed on the benefits accruing as a result of reduced project cost and a strengthened Rupee. During the course of project execution, HAL was also able to enjoy unearned advantages to the extent of Rs 9.37 crore in respect of profit, substantial advances, and non-imposition of liquidated damages.

Ministry of Defence (Ministry) sanctioned the establishment of Depot ('D') level repair and maintenance facilities at Hindustan Aeronautics Limited (HAL) Hyderabad in April 2004 at a cost of Rs 89.27 crore for Elta/FCR radars held by the three services- Indian Air Force (IAF), Indian Navy (IN) and Indian Coast Guard (ICG) - and installed on their respective fleets[29]. The project cost included a Foreign Exchange (FE) component of USD 17.421 million and was to be shared by IAF, IN and ICG in proportion to their holdings of these radars. The facilities were to be completed within 29 months. IN, IAF and ICG had paid Rs 89.09 crore to the HAL till 31 March 2008.

Deficiencies noticed in the financial arrangements are detailed below:

I. Inadequate co-ordination and control mechanism

- No contract was signed either between Ministry and HAL or between the three services and HAL for establishment of these facilities.

- In April 2004, Ministry fixed the annual contributions of the three Services. Audit noticed that these contributions had no direct linkages with the schedule of payments prescribed in the contract of HAL with Elta. As a result, the funds released by three services were lying with HAL before they were eventually paid to Elta as per contractual provisions. Though an amount totalling Rs 26.67 crore was paid to HAL between September and December 2004, HAL made the advance payment of 20 *per cent* amounting to Rs 14.73 crore to Elta only in April 2005 thereby delaying the commencement of the project. By the time of payment of the next instalment of Rs 15.00 crore by HAL in November 2005, it had already received further contributions of Rs 32.00 crore from the three Services.

[29] Fleet - Dornier-228 (Indian Navy and Coast Guard), ALH (Indian Navy) and Jaguar (Indian Air Force)

- Though the project was under progress and HAL was responsible for delay in its commencement, HAL obtained 99 *per cent* (Rs 89.09 crore) of the project cost by March 2007. This amount included a profit component of Rs 6.22 crore.

II. Expenditure without sanction

The approval from the Government of India for the setting up of the `D' level repair and maintenance facilities was based on the cost of project at estimation stage which was USD 16.813 million, i.e Rs 77.33 crore. However, HAL's contract with Elta for creation of the facilities was for only USD 16.101 million, i.e Rs 74.06 crore, which was lower than the estimated cost by USD 712,000 i.e Rs 3.27 crore. Ministry in their sanction letter, however, did not provide for reduction in the project cost on the final cost of `D' level facilities negotiated by the HAL with the foreign firm being lower than the estimated cost. As a result, HAL did not reduce the project cost but went in for the purchase of optional equipment, without specific sanction, to bridge the difference between the sanction and contract cost.

III. Extra expenditure

- Ministry of Defence (Defence Finance) failed to recover the interest on early payment of contributions from HAL though each proposal for release of funds was processed through Ministry's Defence Finance wing. The interest on these early payments, for the period from April 2005 to June 2007, worked out to Rs 4.94 crore.

- Though the project cost was estimated based on the equivalence of USD 1 to Rs 46, the payments were made by HAL to Elta at the appreciated value of rupee ranging from Rs 40.50 to Rs 44.50, leading to further reduction in the project cost by Rs 2.10 crore.

- The project cost also included a profit element of 7.5 *per cent* for HAL. However, though there was reduction in project cost as brought out in the preceding paras, the quantum of the profit element was not reduced proportionately. As a result, HAL was paid Rs 40.31 lakh more.

- In the absence of a contract, Liquidated Damage (LD) could not be invoked by Ministry despite instances of delay on the part of HAL in making payments to Elta thereby resulting in delay in creation of `D' level repair facilities. This resulted in non-recovery of LD amounting to Rs 1.93 crore.

Accepting the facts, Ministry in November 2008, stated that the price of optional equipment required for enhanced testing of radar assemblies was also negotiated during the CNC meeting, amounting to USD 712,000. The contention of the Ministry is not tenable as the minutes of the CNC meeting do not contain any record of negotiations for purchase of these items. Also, Navy, in March 2008, stated that HAL used the option clause to procure more equipment from the funds which became available due to reduction in the projected cost of the supplies of the facilities. Clearly, approval of the sanctioning authority was not obtained for procuring additional equipment.

Thus, despite release of funds by the Services, the project got delayed as HAL did not promptly transfer the funds to the foreign firm. In addition, the inept handling of contractual arrangements

with HAL led to the Government incurring a loss of Rs 9.37 crore in the execution of the Project apart from HAL incurring an expenditure of Rs 3.27 crore without the sanction of the competent financial authority.

2.9 Failure to ensure cost neutrality in UNPK Missions of Indian Air Force

The failure of Ministry of Defence to ensure cost neutrality for the Indian Air Force in contributing to UN Peace Keeping Missions resulted in lesser reimbursement to the extent of Rs 245 crore for contingents deployed between July 2003 and March 2008. Besides, several unamortized and hidden costs were not covered under the ambit of the reimbursement.

Involvement as a Troop Contributing Country (TCC), i.e leasing of equipment or provision of services by personnel, in the Peace Keeping Missions of the United Nations is through an agreement between UNDPK0[30] and the TCC in the form of an MOU[3t] or an LOA 32 (agreement). The agreement stipulates, among other things, the details of reimbursement by the UNDPKO to the TCC.

Typically, the agreement provides for reimbursement on account of contribution of major equipment ('COE'), contribution of personnel (`troop cost') and contribution of minor equipment for self sustainment ('SSE'). The principle of `cost neutrality' i.e., the cost of deployment incurred by the TCC should be equal to the reimbursement being received from the UN over a given period of time, should be an important consideration in such reimbursement agreement. Audit examined the records relating to reimbursement of IAC[33] deployed for UN Peace Keeping assignments during July 2003 - June 2008. The results were as under:-

I. Lesser reimbursement on account of Contribution of major Equipment ('COE')

Indian Government entered into five LsOA with UNDPKO for reimbursement of 17 utility and eight attack helicopters deployed in UN Missions of Sudan and Congo between July 2003 and October 2005.

The cost of operation per flying hour of utility and attack helicopters within the country was USD 2,496 and USD 6,132 respectively in 2003-04[34]. However, Ministry agreed to provide the services of these helicopters at USD 2,100 and USD 2,950 respectively. Further, when UN agreed (October 2005) to reimburse a higher rate of USD 2,300 per flying hour for the utility helicopters in Sudan, Ministry did not obtain this rate of reimbursement for similar type of helicopters provided in Congo.

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[30] UNDPKO - United Nations Department of Peace Keeping Operations
[31] MOU - Memorandum of Understanding
[32] LOA - Letter of Assist
[33] IAC - Indian Aviation Contingents

The LsOA were concluded for operations in a specified year with an option to extend for a year more. However, the rates were not revised although IAC missions had been in operation for almost three to five years. An analysis of the rate concluded per flying hour per helicopter vis-a-vis the actual cost of operation per hour of the helicopters and the number of contracted hours during the period July 2003 - March 2008 revealed that reimbursement was lower by Rs 205 crore (Annexure II).

II. Lesser reimbursement on account of troop cost, contingent owned equipment and self sustenance equipment

The Government of India had been disbursing per month OSA[35] to its personnel at three slab rates i.e USD 2,200 for an officer, USD 1,650 for a Junior Commissioned Officer (JCO) and USD 1,000 to Other Ranks (OR), from January 2002. The UN had been reimbursing troop cost at the uniform rate of USD 1,028 per month per contingent member. In addition, personal gear, personal weaponry and specialist allowance at a given scale of troops strength were also reimbursed at predetermined rates of USD 68, USD 5 and USD 303 per month. An analysis of average troop cost reimbursement by the UN vis-a-vis OSA actually paid revealed that the reimbursement was less to the tune of USD 2.94 million (Rs 11.76 crore) in the case of two out of five units checked (Annexure III).

In addition, comparison of expected and actual reimbursement with reference to Contingent Owned/Self Sustenance Equipment revealed that the reimbursement was less by Rs 28.18 crore in the case of three missions (Annexure IV).

III Unamortised and hidden costs

The Government does not have a national cost data on the defence forces. This results in unrealistic cost projection for major and minor equipment deployed in the Mission and denies leverage to the Ministry while negotiating with the UN. Coupled with this is the lack of a realistic and informed assessment of all elements of cost and its timely projection to the UN. A few examples are cited below:

- Troops were trained for three to six months prior to the deployment. The training cost which was yet to be claimed and reimbursed added to the deployment/redeployment burden. Further, the payment of salaries for the period of training, induction/de-induction had also not been factored in the reimbursement.
- The reimbursement for equipment under wet lease 36 called for a minimum level of serviceability. It was, however, noticed that the equipment after being deployed in Mission areas became unserviceable due to varied working conditions as compared to their designed working conditions. As a result, reimbursement to that extent of un-serviceability was disallowed. This position was also due in part to the fact that the cost data for the usage rate for equipments was not decided on the basis of realistic mission specific factors and got embedded into the reimbursement rate agreed upon.

34 Rates provided by Directorate of Financial Planning, Air HQ
35 OSA - Overseas Allowances

- Another factor diminishing reimbursements was the depreciation of all major equipment that had been inducted in the Mission area. There was high rate of depreciation in the Mission area due to extreme weather conditions and poor infrastructure. One spin off effect was the continuous increase in the imprest expenditure and purchase of spare parts as additional items during rotation. Besides, to maintain the required standard of serviceability and availability of COE, extra equipments were provided for as a cushion to the contingent. Regular maintenance flights were also undertaken to cater to repair/service of the LRUs[37] and to re-supply floats of spares. The cost of reimbursement of maintenance flights alone was accepted by the UN.

In sum, an exercise on reconciliation of the reimbursement received vis-a-vis the expenses incurred on deployment had not been carried out so far. A realistic national cost data had also not been established. As there is a likelihood of unintended and indirect subsidy of a much larger volume being passed on, Ministry is advised to move forward in establishing a national cost data on the defence forces and to finalise the reconciliation process. This would give better leverage at negotiations and enable progress in attaining cost neutrality.

The matter was referred to Ministry in August 2008; their reply was awaited as of January 2009.

2.10 Delay in payment of UN Death/Disability compensation

Despite more than five decades of deployment under UN Peace Keeping Missions, Ministry is yet to frame control procedures to monitor the initiation and the settlement of the claims of the deceased/disabled soldiers deployed for the missions. Though the compensation amount was received, by and large, in time from UN, its disbursement to personnel/ family members of the deceased was made after a considerable period. Besides, due to delay in initiation of the claim for the compensation, Ministry was unable to claim the interest amounting to Rs 1.38 crore from UN.

Since the first commitment in Korea in 1950, Indian Government had lost over 100 troops deployed in 43 United Nations (UN) Peace Keeping Missions. As per current UN resolutions on death and disability benefits to the deployed personnel, a one-time lump-sum award of USD 50,000 in respect of serviceincurred deaths and a percentage of USD 50,000 for service-related disabilities in proportion to the physical loss sustained is admissible to the troop contributing country. On receipt of this amount from the UN, the Government is to disburse the compensation amount to the affected personnel or their kin. However, audit noticed laxity on the part of Ministry in timely disbursement. Audit findings follow:

[36] Wet Lease - A contingent owned reimbursement system where the troop/police contributor provides and assumes responsibility for maintaining and supporting deployed major items of equipment together with the associated minor equipment. The troop/police contributor is entitled to reimbursement for providing this support.

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I. Inordinate delay noticed in disbursement of compensation

As per UN rules, the participating countries are to submit their claim within four months from the date of incident. of death or disability while the UN is to make the payment within three months of its submission. Audit observed that out of 36 Indian soldiers who died in UN peace keeping missions between 1990 and 2007, the payment in respect of 20 Indian soldiers who died during 1990-95 was released by the Government to their family members after a period ranging from 12 to 17 years. In respect of six cases during 2000-01 where soldiers died, payments were released after five to seven years. Details of the delay in respect of 53 cases (36 death and 17 disability cases) are depicted below:

Delay	Death	Disability
Upto 1 year	01	-
1-4 years	08	10
4-7 years	05	07
7-10 years	02	-
More than 10 years	20	-
Total	**36**	**17**

Ministry is yet to firm up control procedures to monitor the claims from initiation to settlement on behalf of the deceased/disabled personnel. As a result, there was failure to adhere to the schedule for initiating the claims, leading to consequent delays in receipt of compensation amounts from the UN, which in turn delayed disbursement to the affected personnel/kin.

II. Loss of interest to the family members of deceased /disabled soldiers

The UN reimbursed USD 1.8 million to the Indian Government in respect of 53 cases between November 1995 and March 2008. However, no firm decision could be taken till May 2007 on the quantum of compensation to be paid. Ultimately, when Ministry authorised the compensation payment, it did so without any interest earned thereon by the government. Audit noticed that in respect of these 53 claims, the affected personnel/kin were not paid an amount of Rs 4.28 crore of interest earned due to retention of the compensation amount after its receipt from UN by Ministry.

To sum up, the Ministry has not been prompt in disbursement of legitimate dues of disabled/ deceased personnel deployed in UN Peacekeeping Forces.
Though, Government earned interest on the compensation amount received from the UN the corresponding benefit was not passed on to the affected personnel/kin.

The matter was referred to Ministry in September 2008; their reply was awaited as of January 2009.

[37] LRUs- Line Repair Units

CHAPTER III : AIR FORCE

Procurement

3.1 Inordinate delay in induction of a vital system on an aircraft fleet

The procurement process of 35 vital system which was to increase operational effectiveness and safety of an aircraft fleet took more than eight years to complete. The installation of the vital systems procured at a cost of Rs 37.42 crore and delivered between December 2006 and January 2008 had also not commenced. Failure of the IAF to avail itself of the ToT option would continue the dependence on the foreign vendor. In addition, maintenance facilities had not yet been created even though the entire fleet was planned to be fitted with the equipment. Most importantly, in the intervening period, IAF had lost four pilots and three aircrafts costing Rs 282.05 crore due to pilot disorientation.

Ministry approved a proposal in June 1998 and concluded a contract with the Original Equipment Manufacturer (OEM), in August 1999 for the supply of 35 vital system (system) with associated spares for Euro 6.277 million (Rs 29.54 crore) which was revised to Euro 7.952 million (Rs 37.42 crore) in April 2003. The system is a flying aid, which increases the operational effectiveness on dark nights and enhances the safety of the aircraft by reducing the pilot's workload enabling him to concentrate on navigation, target acquisition and weapon delivery. Thus, the system is an operational and safety requirement. The integration of the system onto the aircraft was to be done by Hindustan Aeronautics Limited (HAL). The fitment of the system was to coincide with the NAVWASS[38] upgradation that was being undertaken by HAL. Audit examination disclosed the following:

I. Conclusion of the contract without a proper feasibility study led to delays and additional expenditure

A feasibility study in December 1998 done before conclusion of the contract for the supply of the system had identified the avionics bay area of the aircraft for fitment of the system. However, despite this and two more subsequent feasibility studies conducted till 2002, the placement of the system in the aircraft remained inconclusive. It was only by 2003, nearly four years after the conclusion of the supply contract with the OEM, that a suitable area in the aircraft could be identified for placement of the system. This delay in finalisation of the placement area led to the postponement of the supply of the system which was to have been completed by June 2002.

[38] NAVWASS-Navigation Weapon Aiming Sub-System

The change in the placement of the system also led to changes in technical specifications. The IAF agreed to pay, in April 2003, an additional Euro 1.67 million (Rs 8.62 crore) for meeting the additional design, development, tests and re-certification costs. Subsequently, the OEM also agreed (April 2003) to refund the additional amount on a pro rata basis on future orders. But the offer of refund was not followed up on later orders placed. Only on the matter being pointed out by audit in August 2008, Air HQ approached the firm for refund of Euro 18,612 per unit in November 2008. The firm agreed in the same month to refund Euro 4,094,764 against procurement of 22 system.

Ministry stated, in January 2009, that the balance Euro 1.26 million is expected during purchase of 96 systems that HAL shall be ordering for the IAF. It is noted that the balance Euro 1.26 million (Rs 6.50 crore) continues to remain with the firm, as no further order has been placed.

II. Delay in the fitment of the system

The shifting of the earlier location for the fitment and the consequential redesigning severely affected the delivery schedule. The systems were delivered during the period between December 2006 and January 2008. However, audit noticed that none of the systems had been fitted onto the designated aircraft as Air HQ was yet to place an RMS0[39] on HAL for installing them (December 2008).

Accepting the facts, Ministry explained, in January 2009, that embodiment of system on the aircraft included considerable hardware and software modifications and for this the aircraft was likely to be out from the flight line for more than a month. Therefore, IAF decided to utilise this time out of the flight line to implement the six modifications to get all DARIN R aircraft to standard configuration.

III. Loss of pilots and aircrafts

The IAF had lost three pilots and four aircrafts up to December 1999, the beginning of the process for procurement of the system, due to pilot disorientation. During the period January 2000 to March 2008 four more pilots and three aircrafts (Rs 282.05 crore) were lost due to pilot disorientation. Intakes about three years to train a fighter pilot. The delay in procurement and the failure to induct the procured system becomes more significant in this context. In this connection, it is recalled that though Ministry in the Action Taken Note to Audit Paragraph No. 7 of C&AG Audit Report No. 8 of 2001 had stated (January 2004) that the flight-testing of the system would be completed by October 2004, only the integration of prototype could be achieved by July 2006.

Ministry stated, in January 2009, that in these three accidents the systems could not have helped the situation substantially. Ministry, however, admitted that the system definitely helps in reducing the stress and cockpit workload of the pilot.

IV. Failure to avail of the option for Transfer of Technology (ToT) resulted in continued dependence on the foreign OEM

The contract concluded in 1999 provided that IAF would be able to obtain the benefits of Transfer of Technology (ToT) through indigenous licensed production of the item and establishment of `D' level facilities in India. Though a proposal for setting up the production facilities was initiated in January 2000, no further progress was achieved in this regard. In the current context where the entire aircraft fleet was likely to be equipped with the system, it is inevitable that the equipment would have to be procured from the OEM. The failure to avail of the option for ToT and lack of synchronisation in taking up the case for setting up maintenance facilities indigenously along with procurement of the system had resulted in the continued dependence on the foreign OEM.

Ministry stated, in January 2009, that considering the limited quantity needed, after initial procurement of 57 systems, the ToT option was not cost effective. The reply was not acceptable as the entire fleet was to be equipped with system and `D' level facilities were being negotiated for.

In conclusion, despite the fact that the availability of the system would have enhanced the safety of the pilots and increased the operational effectiveness of the aircraft, the procurement of system was delayed. Further, though 35 systems had been delivered during the period between December 2006 and January 2008, not even a single system had been installed so far (December 2008). The dependence on foreign OEM continues owing to the failure to conclude ToT arrangements and the lack of synchronisation in taking up the case for setting up maintenance facilities in India.

3.2 Procurement of defective missiles and excess missile launchers

42 of the 300 air-to-air `X' type missiles acquired by IAF at a cost of Rs 76 crore became unserviceable during the warranty period. Further, 165 missiles remained unserviceable for significant periods. Though the shelf life of all the missiles would expire by June 2010 and despite having a stock of 440 missile launchers, the Air HQ procured 145 additional launchers between August 2006 and March 2008 rendering the expenditure of Rs 66.86 crore on their procurement largely infructuous.

IAF acquired 300 air-to-air `X' type of missiles (missile) and 440 missile launchers at a total cost of Rs 665.99 crore during the period 1999 to 2002 from a Russian firm for its `A' and `C' fighter aircraft fleets. These missiles and launchers were ordered through two contracts, i.e. 200 missiles and 200 launchers through a contract in March 1996 and 100 missiles and 240 launchers under another contract in November 1996. The missiles have a shelf-life of eight years while the launchers have a shelf-life of ten years. Although the missiles were received between 1999 and 2002, successful testing could be carried out only in October 2008. Scrutiny of related documents disclosed the following:

I. High rate of unserviceability

The serviceability status of these missiles, since their induction, had been very poor.

[40] D' Level - Depot level serving which includes overhaul and repair

→ 42 missiles (14 *per cent)* were rendered unserviceable during the warranty period of one year itself. LAX took 19 to 23 months (constituting nearly 25 *per cent* of the active life) to make these missiles serviceable by the Original Equipment Manufacturer (OEM).

→ Subsequently, after expiry of warranty period, 64 (21 *per cent)* missiles were rendered unserviceable before June 2004. Although 27 of these defective missiles were repaired through cannibalization[41], the total number of defective missiles kept increasing from 91[42] in June 2005 to 121 (40 *per cent)* by November 2005. As of December 2008, 80 missiles remained unserviceable while the shelf life of the remaining 98 missiles had already expired.

→ Test check of 165 out of 288 missiles held with the lAF indicated that large number of missiles remained unserviceable for significant periods out of their total shelf life of 96 months as tabulated below:

Unserviceable period	**No.of missiles**
Less than 12 months	16
From 12 to 24 months	34
From 24 to 36 months	30
From 36 to 48 months	28
More than 48 months	57

As a result of the un-serviceability of such a large number of missiles for substantive periods, the purpose of the very procurement went largely unfulfilled.

II. Inadequate contractual provisions

As per the contract of March 1996, if after expiry of 50 *per cent* of the shelf life it is found that the same defect has occurred on a mass number of the equipment supplied due to the supplier's fault, he shall repair or replace the faulty articles within 120 days from the date of making of the Technical Report at his own cost.

Audit noted that a similar provision was not incorporated in the contract of November 1996. As a result, the repair of 27 missiles procured under the contract of November 1996, when carried out, would be at the cost of lAF. Ministry stated (December 2008) that these missiles were procured with aircraft `C' and the warranty and repair clause was specific to the aircraft procurement and the missiles were merely a part of the programme. The reply is not tenable as it only brings out the failure to incorporate appropriate contractual provisions to safeguard the Government's interests.

[41] Cannibalization is depriving an aircraft/equipment of its assemblies/components for purpose of bringing up another aircraft/its system from the state of un-serviceability/incompleteness.
[42] Including 37 not repaired earlier

III. Repair though partially successful was late

Action to repair unserviceable missiles was taken at different levels with varying degrees of success.

- Out of 121 unserviceable missiles as of November 2005, 29 missiles were repaired through cannibalization and consequently the stock of unserviceable missiles was reduced to 92.Out of these, 65 missiles were off-loaded to the OEM for repair in January 2008. Of these, 38 missiles had been repaired and the remaining 27 were to be repaired by November 2008. However, shelf-life for 35 of these 65 missiles would expire by the end of 2008 and the remaining would also expire during the period September 2009 to June 2010.
- For the remaining 27 of the 92 unserviceable missiles mentioned in the preceding para, Air HQ, in April 2008, recommended that repair of missile with OEM not be progressed as the repaired missiles would be available only by the end of September 2009, and by that time most of the missiles would have completed their useful life. Thus, these 27 missiles costing USD 10,800,000 would not be repaired.

IV. Procurement of launchers

IAF had procured 440 missile launchers along with these missiles. A large number of these missiles were unserviceable for significant part of their shelflife. However, during August 2006, March 2007 and March 2008, IAF placed three more supply orders for 145 additional launchers at a total cost of USD 16,255,005 (Rs 66.86 crore). While supply orders of August 2006 and March 2007 for 35 launchers were placed for maintaining float against scaled rotable for aircraft `A', 110 launchers were ordered for aircraft `B' as a part of the aircraft upgradation package. Audit noted that:

- The orders were placed without ascertaining the availability of existing stock and the serviceability of the missiles. 17 missile launchers against contract of August 2006 were delivered in March 2008 and 128 missiles launcher against the contracts of March 2007 and March 2008 were yet to be delivered as of December 2008.
- The contract for upgrading the `B' fleet was finalised in March 2008, to be completed by 2015 - 16. By then the 110 launchers ordered for fleet `B' would have lost more then 50 *per cent* of their shelf life.

Ministry, in December 2008, stated that the decision taken was to manage existing inventory of `X' missiles till expiry of their shelf-life and consider replacement subsequently in view of the cost involved. The reply is not tenable as these launchers were specifically procured for the `X' missile. As such, the expenditure of Rs 66.86 crore incurred on procurement would largely be infructuous.

To sum, IAF held a large number of missiles worth Rs 144 crore that were unserviceable for considerable periods of their shelf life. Despite imminent expiry of their shelf life, Air HQ concluded three contracts for procurement of 145 more missile launchers costing Rs 66.86 crore without taking into account the earlier procured quantity of 440 launchers and despite unserviceability / shrinking shelf life of the missiles in the inventory.

3.3 Extra expenditure in procurement of spares for an aircraft

IAF's inability to enforce contractual obligations led to an extra expenditure of Rs 10.82 crore in the procurement of spares.

The Main `F' Agreement (Agreement) under which LAY purchased `N' number aircraft `F' in 1982 provided that the OEM[43] would have to provide product support till 2008 (20 years from the date of supply of last aircraft). The agreement further stipulated that in case any item or part of the aircraft is likely to go out of production, the seller shall give a minimum notice of 18 months to the buyer so that `orders for life' for such items, i.e a Last Buy Order (LBO) could be placed. The agreement required the seller to also issue a Priced Catalogue of spares to the buyer and ensure that the prices are most favourable to the buyer.

Scrutiny of two orders for the purchase of various spares for the aircraft revealed that Indian Air Force (IAF) was unable to enforce the contractual terms and had to pay an additional sum of Rs 10.82 crore in purchasing the spares. Details were as under:

Case I

In February 2005, M/s `D' while intimating IAF of the discontinuation of production of four types of `Pressure Transmitters' also advised Air Headquarters (Air HQ) to place orders by June 2005 at the rates quoted by 43 Original Equipment Manufacturer. Three companies were involved in the main agreement with the IAF them. Air HQ placed an LBO amounting to Euro 1.86 million (Rs 10.65 crore) in February 2006. Audit scrutiny of the documents leading to the placing of the LBO revealed the following:

- M/s `D' was contractually bound to give the buyer notice of the need for placement of LBO in 2004, as 18 months notice was required to be provided by the seller in respect of parts going out of production. However, M/s `D' allowed only four months notice to Air HQ. Based on the repeated requests of Air HQ, the seller finally agreed to allow 12 months time to place the LBO.

- As M/s `D' communicated the need for LBO only in February 2005, the spares required were not covered by the Priced Catalogue of spares for the year 2004. A comparison of the prices quoted by M/s `D' in February 2005 with those reflected in the Priced Catalogue for 2004 (valid upto 31 December 2004) indicated that the price increase ranged from 114.55 *per cent* to 259.37 *per cent*. Even after allowing for the escalation factor applicable for 2005 on the Priced Catalogue rates of 2004, the extra expenditure amounted to Rs 6.39 crore. Although Air HQ took up (October 2005) the issue, M/s `D' insisted that the rates were reasonable and in accordance with their pricing policy and added that the items were outsourced from their sub-vendor who was closing the production line. Notwithstanding the availability of contractual provisions to safeguard the interest of the buyer as regards prices, Air HQ had to *close the issue* stating (February 2006) that no fruitful purpose would be served in pursuing the case of reduction and placed the order at the rates quoted by M/s `D'.

[43] Original Equipment Manufacturer. Three companies were involved in the main agreement with the IAF

Case II

In December 2007, Air HQ, placed a supply order on M/s `T' for procurement of four lines of RDM-4 spares for aircraft `F' at a total cost of Euro 2.38 million equivalent to Rs 14.10 crore. Audit scrutiny of the papers leading to procurement of spares revealed the following:

- Based on approval from necessity angle (AON) accorded for five lines by Competent Financial Authority (CFA) in August 2005 with an estimated cost of Rs 2.75 crore, an indent was placed on Directorate of Procurement since the total value of the indent was well within the power of Air HQ. A Request for Proposal (RFP) was floated to the vendor on PAC[44] basis in September 2005.
- Although the firm was contractually bound to provide product support till 2008, the firm did not submit the quotation promptly. After three reminders, the firm submitted (April 2006) a quotation for four lines amounting to Euro 2.62 million equivalent to Rs 15.08 crore, which was higher by 226.92 *per cent* to 7100.59 *per cent* than the estimated cost.
- A counter offer was made to the firm but it was rejected by the vendor citing obsolescence of a few items. Following negotiations at Air Headquarters and Ministry and keeping in view the necessity to maintain war reserves, a supply order was placed on M/s `T' for procurement of four lines of RDM spares of aircraft `F' at a cost of Rs 14.10 crore in December 2007. As a result, the Government had to incur additional cost of Rs 4.43 crore after allowing for escalation on Last Procurement Price of RDM-4 spares to the year 2007.
- Audit observed that the firm did not give notice for LBO but disclosed the fact that at least three out of four items had become obsolescent only when they received the counter-offer.
- Even after knowing that these items had become obsolescent, IAF did not try to find out whether they should procure more number of these spares as prices would further go up in future and placed orders for the same number of these spares which they needed in 2005. In essence, IAF did not place the order for last buy even though these spares were becoming obsolete and the aircraft would be in flying condition for at least next 20 years.

In response to Case I, Ministry, in November 2008, stated that the companies had been providing product and repair support in accordance with the Agreement till 2006, when they refused to adhere to the pricing philosophy of the Agreement. Ministry also stated that the supply order for procurement of spares was placed once all efforts to reduce the prices had failed and a considered decision was taken after weighing the options of serviceability on one hand and long-drawn litigation proceedings on the other. Ministry further added that non placement of timely supply order would have resulted in the item becoming non procurable in future, which could have resulted in AOG[45] adversely affecting the fleet serviceability.

In response to Case II, Ministry stated in December 2008 that the supply order was placed after due negotiation and maximum discount possible.

Audit recognises the urgency of operational requirements. However, given the fact that the aircraft `F' would be a vital part of the IAF combat fleet till at least 2025, strong and dependable product support agreements are a must in order that both the IAF operational requirements and the Government's financial interests are well-protected.

[45] AOG –Aircraft on Ground

Thus, the fact that IAF was unable to either ensure that the seller adhered to contractual provisions or take recourse to legal proceedings on account of operational commitments sets an unhealthy precedent for other such agreements. Apart from the fact of an additional expenditure of Rs 10.82 crore, the event might encourage other vendors to renege on agreements in the hope of higher prices. IAF / Ministry need to review their policy and practices with respect to product support.

Contract Management

3.4 Loss due to inefficient handling of a contract

The delay in replacement of radars has forced 1AF to continue with the use of obsolescent radars. Further, 1AF paid an additional Rs 22.40 crore for non-existent royalty charges.

Radar `A' is an equipment used for monitoring, control and recovery of aircrafts at airfields upto a distance of `X' kms. In September 2007, Ministry of Defence (Ministry) concluded a contract with Bharat Electronics Ltd. (BEL) for the supply of 22 radar `A' in Phase II at a cost of Rs 732.80 crore with the delivery of the first radar commencing from August 2009. While 11 of these radars were meant to replace obsolete radars, the remaining I I were to be freshly inducted.

Audit scrutiny of the contract revealed that significant delays in the finalisation of the procurement led to extra expenditure of Rs 7.57 crore. Further, lack of due professional care in formulating and issuing amendment to the contract resulted in BEL obtaining unintended benefit of Rs 22.40 crore. Details are discussed below.

I. Delay in finalisation of contract

Procedural hurdles in finalisation resulted in the acquisition process taking up almost three years. The timeline of the process was as under:

- Initiation of the case by Air HQ for the procurement of additional radar `A' under Phase 11: January 2004.
- Clearance by the Defence Acquisition Council: September 2004.
- Acceptance of Necessity' (AON) and single vendor clearance: September 2005.
- Competent Financial Authority's (CFA) approval: July 2006.
- Issue of request for commercial proposal to BEL: January 2007.
- Conclusion of contract: September 2007.

It can be seen that every step in the contract finalisation process had taken up between six months to a year. Though the contract was on a single tender basis and the supplier was a Public Sector Undertaking (PSU), the time taken between issue of AON and signing of the contract was 23 months as against the stipulated 13 months. Ministry, in September

2008, agreed and stated that measures and steps were being introduced to ensure compliance with the time frame given in the Defence Procurement Procedure (DPP).

II. Cost-effectiveness in procurement

(i) Ministry had concluded a contract (March 2003) with BEL for procurement of 20 radar `A' in Phase I at an aggregate cost of Rs 585 crore. Under this contract, additional radar `A' could be purchased at the same price finalised for Phase I if such an option to purchase were exercised by March 2005. However, both IAF and Ministry failed to take advantage of the option clause due to procedural delays. As a result, the contract of September 2007 was higher by Rs 7.57 crore. Ministry stated that the option clause could not be utilised as the installation and commissioning of the first radar `A' was completed only in March 2005 but assured that necessary procedures would be adopted to ensure avoidance of such delays in future projects.

(ii) While obtaining the approval of the competent authority, Ministry had informed (July 2007) the Ministry of Finance that royalty at the rate of 3.5 *per cent* of the net selling price, amounting to Rs 22.40 crore, was included in the negotiated cost for the 22 radar `A'. Subsequent to the conclusion of the contract between Ministry and BEL, the latter signed an agreement with the Original Equipment Manufacturer (OEM) for waiver of royalty in December 2007. Audit had, therefore, observed that the royalty of Rs 22.40 crore included in the contract, to be paid by IAF to BEL, needed to be reversed.

In October 2008, subsequent to the audit objection, BEL and the OEM signed an amendment to the royalty waiver agreement of December 2007 indicating that the negotiated price with the OEM for hardware of the 22 radar `A' of Phase II included royalty. Ministry, therefore, stated (December 2008) that BEL had indirectly paid royalty to the OEM.

However, the following facts would make the stand of the Ministry untenable:

- Under the original contract, OEM had agreed that royalty was payable only from the 43rd radar `A' and that no royalty was payable up to the 42nd radar `A' made and supplied under the contracts of April 2003 and December 2007.
- The amendment to the royalty waiver agreement effected by BEL was subsequent to audit objection requiring the reversal of Rs 22.40 crore included in the contracts between the Ministry and BEL.
- The amendment did not have the approval of the CFA.

[46] Impact due to Foreign Exchange variation to be borne by the buyer

Thus, the acquisition process of 22 radar `A' under Phase II has suffered delays. Moreover as the delivery of radar `A' will commence only in 2009, some airfields would be forced to use obsolescent radars till then. The net loss to the exchequer on account of indifferent handling of the case works out to Rs 29.97 crore[47]

3.5 Inordinate delay in upgradation of a training simulator

The inordinate delay in the upgradation of a simulator forced an Air Force Training School to make-do without the simulator since November 1993. The IAF was yet to derive any benefit for the advance of Rs 3.21 crore paid so far.

A Navigation and Weapon System Maintenance Simulator costing Rs 2.64 crore, was installed at an Air Force Training School in August 1986 for training aircrew and maintenance personnel. The simulator became totally unserviceable in September 1993. In January 2004, Ministry concluded a contract with Hindustan Aeronautics Limited (HAL) for its upgradation at a cost of Rs 5.83 crore for completion by April 2006, later extended to February 2007. As of December 2008, the work had not been completed. An amount of Rs 3.21 crore had been paid to HAL. Audit scrutiny revealed the following:

I. Delay in initiation of proposal

The simulator was non-functional since September 1993. Efforts to repair the system in-house or to maintain the system by Indian vendors and the OEM[48] did not bear fruit. Though a case for up-gradation was initiated in March 2001, a contract could be concluded only in January 2004 i.e after more than 10 years of the simulator becoming unserviceable. Air Headquarters (Air HQ), in 2008, admitted that the non-availability of the simulator had created a setback but stated that the absence of a simulator has not affected the quality or quantity of training as computer based training aids and actual aircraft from operational squadrons were being used. The reply is difficult to appreciate as it in effect indicates that the simulator does not add value to training.

II. Vendor chosen lacked expertise resulting in delays

The decision to select HAL over the OEM appeared flawed in view of the following facts:

- The offer of the OEM was rejected on technical grounds, though both Air HQ and the Finance division of the Ministry had felt that the offer of the OEM would be competitive when compared with that of HAL. However, Air HQ, opined (April 2007) that the project could not gain momentum right from the beginning because HAL lacked skill, experience and knowledge of the technology.

- After five months of conclusion of the contract, HAL sub-contracted the task to a firm which further sub-contracted the hardware upgrade to another firm.

- Though more than two years have passed from the stipulated completion date, the upgradation was yet to be completed. Apart from a recovery of Rs 0.21 crore made from the second stage payment, no further recovery had been made towards Liquidated Damages (LD).

[47] Rs 7.57 crore + Rs 22.40 crore

[48] OEM – Original Equipment Manufacturer

III. The contract failed to take into account the technology upgrade

Subsequent to induction in June 1985, the aircraft `F' fleet was upgraded during 1992-94 to obtain increased capabilities in terms of Electronic Warfare and Weaponry. This was achieved by modification of the aircraft including upgrade of the Mission Computer (MC) from the originally supplied SH-3 standard to SH-4 and then to SH-5 standard software. The corresponding LRUs[49] were also upgraded to the same standard. However, the scope of the contract concluded with HAL was limited to bringing the simulator to the same state as it was before it had become unserviceable in September 1993. It is pertinent to recall here that the offer of the OEM was rejected on the technical ground that they had suggested only check and repair of the computer and associated hardware.

IV. Objective yet to be achieved

After conclusion of the contract, Air HQ suggested the incorporation of upgrades already carried out on the aircraft, as IAF found it difficult to obtain the original/earlier version of parts of the simulator. Attempts by the Training School to obtain them from the OEM also did not prove fruitful. Although the MC could finally be handed over to HAL in February 2007 after reloading SH 4 software on two serviceable MC, their operational status could not be checked on any test bench or platform because the software version of associated equipment stood already upgraded to SH-5 standard. The MCs handed over to HAL also did not work on the rig assembled by M/s BH. The situation forced Air HQ to request HAL to explore other possible solutions.

Finally, after almost a year of protracted interaction, Air HQ requested (May 2008) HAL for a final proposal to complete the project within the sanctioned cost while cautioning them that the project would be short closed in the event of their inability to do so. The final proposal from HAL was awaited as of December 2008.

The Ministry in their interim reply stated, in December 2008, that there would be no further delay as HAL has proposed completing the project with change of scope but within the sanctioned cost. The approval of the Competent Financial Authority (CFA) was being obtained, the interim reply added.

In conclusion, inept handling of the project and the selection of an inexperienced vendor led to the Air Force Training School managing without the aining simulator for 15 years despite having advanced Rs 3.21 crore.

The matter was referred to Ministry in August 2008; their final reply was awaited as of January 2009.

3.6 Loss due to procurement at higher rate

HQMC procured Lamp Filament from HAL at a price nearly seven times higher than the rate of an approved indigenous supplier entailing an avoidable additional expenditure of Rs 33.28 lakh.

[49] LRU –Line Replaceable Units

Type `A' `Lamp Filament' (filament), a spare part of the Cheetah/Chetak helicopters was indigenised by the Hindustan Aeronautics Limited (HAL) Helicopter Division, in June 1996. Approval and clearance for licensed manufacture of the filament was given to a private firm in September 1998 and it was valid up to August 2008. Till 2006, the IAF procured more than two thousand filaments from the private firm. The firm had last supplied the filament at the rate of Rs 287.

However, Headquarters Maintenance Command (HQMC) placed a supply order (January 2007) for 1,989 filaments at the rate of Rs 1,960 per filament with Hindustan Aeronautics Limited (HAL). As compared to the private firm, the rate of the filament supplied by HAL was nearly seven times higher. As a result, IAF incurred an avoidable additional expenditure of Rs 33.281akh.

IAF attributed this to change in policy of procurement and consequent shift of responsibility for carrying out of provisioning reviews to HQ MC. Audit finds the reply unacceptable as the change in responsibility should not result in disregard of the basic provisioning norm of consulting the last purchase price so as to ensure reasonableness of the rates quoted for the proposed purchase. Further, IAF has in place an Integrated Material Management On-line system since 2006. Therefore, regardless of the transfer of responsibility, the procuring officers ought to have consulted last purchase price before accepting the high rates quoted by HAL, especially as the sourcing of the supply was from a different agency.

Air HQ, in October 2008, stated that the procurement of the filament from the private firm is an aberration. Air HQ added that the filaments supplied by the private firm did not have a valid type approval certification from DGAQA[50]1 CEMILAC[51]. The contention of the Air HQ is not tenable as it had accepted 2,094 filaments supplied by the private firm which had approved certification that was valid up to August 2008.

To sum up, failure to comply with basic provisioning rules and failure to co-ordinate among various agencies in IAF resulted in a loss of Rs 33.281akh.

The matter was referred to Ministry in June 2008; their reply was awaited as of January 2009.

3.7 Idling of Pitot Static Testers

IAF procured nine Pitot Static Testers costing Rs 0.93 crore in April 2005. These testers remained unutilised for more than three years, as a result of which seven testers became non-operational. Six more Testers procured upto March 2007 costing Rs 0.85 crore were yet to be commissioned.

Air HQ, in March 2003, placed an indent on Hindustan Aeronautics Limited (HAL) for supply of nine Pitot Static Tester (Tester), for aircraft `J', at a total

[50] DGAQA –Director General of Aeronautical Quality Assurance

[51] CEMILAC-Centre for Military Air Worthiness and Certification

cost of Rs 93.15 lakh. The stores, delivered by HAL during April 2005, were taken on charge in the same month by Depot 'Z'. Air HQ placed another order in March 2005 on HAL for supply of a second lot of six Testers at a cost of Rs 85.39 lakh. These were supplied in September 2006 and March 2007. Audit scrutiny of the records revealed:

- In order to deliver the second lot, HAL required the testers to be cleared by the Chief Resident Inspector (CRI), HAL Aircraft Division on the basis of user feedback on the functioning of the earlier lot supplied in 2005. Therefore, HAL requested Air HQ to provide the performance report for the Testers supplied in April 2005 prior to delivery of the second lot.

- Air HQ, however, had not issued the Testers to the units for almost three years and it was only on receipt of the request from HAL that Air HQ, in November 2007, directed Depot `Z' to issue the nine Testers to three Air Force Units and one training school. Air HQ also advised the Air Force units to utilise the Testers on receipt and forward performance report to HAL.

- During pre-issue inspection of the Testers the Quality Assurance Squadron (QAS), in December 2007, noticed that the Testers were due for calibration as these Testers were required to be calibrated annually to maintain accuracy. Therefore, HAL was requested (December 2007) to collect the Testers for calibration. Out of the nine Testers inducted for calibration, two Testers were calibrated and returned to the IAF and issued to a Wing in July 2008. HAL stated that owing to non use, sensors in the remaining seven Testers needed replacement.

Air HQ in October 2008 stated that the initial provisional allotment of Testers made by Air HQ in October 2003 could not be effected as the stores had not been received from HAL. Subsequently, fresh allotment was made in November 2007. The reply is not tenable as the first lot of nine Testers were received in April 2005 and remained idle for more than three years. Of these, only two Testers could be issued to the units in July 2008. The remaining seven Testers need replacement of sensors owing to their continued disuse and failure to observe prescribed calibration procedure. Further, HAL had to supply the second batch of six testers without the benefit of performance report from the users. These testers were yet to be commissioned.

The matter was referred to Ministry in September 2008; their reply was awaited as of January 2009.

Miscellaneous

3.8 Procurement of Air Field Lighting System without synchronising with the runway resurfacing work

Lack of co-ordination in the procurement and installation of an AFLS with runway resurfacing work necessitated avoidable airlift of received stores elsewhere incurring an expenditure of Rs 0.91 crore. The transferred stores worth Rs 1.38 crore also remain uninstalled at the new location for more than a year.

Report No. CA 18of 2008-09 (Air Force and Navy)

In order to restore the Air Field Lighting System (AFLS) at Air Force Station `C', after Tsunami Disaster in December 2004, Air Headquarters (Air HQ) placed an urgent indent in March 2005 on Ordnance Factory Board (OFB) for the supply of one set of AFLS at a cost of Rs 4.20 crore. The system was to be delivered on turnkey basis at Air Force Station `C', within six months. The delivery period was later extended up to June 2006. Scrutiny of the records connected to the procurement revealed the following:

- Against the indent placed in March 2005, only a part consignment of AFLS worth Rs 1.38 crore was received at station `C' from Ordnance Factory, Dehradun (OFD), in May 2006. In November 2006, HQ `Z' Command, however, intimated Air HQ that the installation of the new AFLS would have to be held in abeyance since the AFLS could only be installed once the relevant runway was re-surfaced. As even the Government sanction for the runway resurfacing had not been received as of January 2007, a coordination meeting on `AFLS installation and runway resurfacing' decided that the AFLS stores supplied by OFD to AF Station `C', be transferred to AF Station `D'.

- Accordingly, HQ `Z' Command approached Air HQ for transfer of AFLS stores held at station `C' to AF Station `D'. Vice Chief of Air Staff (VCAS), while agreeing to the transfer, also directed that a fresh set of AFLS stores be supplied to AF Station `C' as and when 80 *per cent* of the runway resurfacing work gets over. In pursuance of this decision, OFD was directed to send the remaining stores directly to station `D' and the AFLS stores held at station `C' were airlifted to station `D' after incurring an expenditure of Rs 0.91 crore.

- The part consignment of AFLS stores that was transferred to AF Station `D' in April 2007 for more effective utilisation, was lying uninstalled. The balance stores, comprising mainly lighting fixtures, which are generally positioned after the civil work and laying of under ground cable, were yet to be delivered. Air HQ stated that the civil works required for installation and commissioning of the AFLS could not be started by OFD due to unforeseen reasons (September 2008).

- The idling stores do not carry any warranty by replacement against unserviceability. The absence of such contractual clauses is even more significant given that the system procured earlier in July 2001 provided for warranty by replacement on 'free-of-cost' basis against any unserviceability for a period of three years from installation.

- Though the WAS order's for relocation of AFLS stores from station `C' to station `D' was communicated by the Directorate of Engineering Support of Air HQ to the Directorate of Provisioning ES (Q) in Air HQ in March 2007, Directorate of Provisioning proceeded with a proposal for installation and commissioning of another AFLS at station `D' and placed another supply order costing Rs 4.76 crore in May 2007 on OFB with a six months delivery period. Incidentally, the AFLS stores had by then been shifted from station `C' to AF Station `D' in April 2007.

No stores against this indent (May 2007) have been supplied as of June 2008. The delivery date has been extended until December 2008.

Accepting the facts, Air HQ in September 2008 stated that the shifting of stores from station `C' to station `D' was not due to negligence but a planned activity considering the fact that stores already supplied would have deteriorated at station 'C'. Requirement of similar stores, simultaneously arose for station `D'. However, OFD failed to commence work for installation of AFLS first at station `C' and now at station `D' too.

To sum up, an important project for providing airfield lighting facilities to an operational airbase was inefficiently planned and managed. Initially, as procurement activities for the AFLS were not dove-tailed with runway resurfacing work, Air HQ was compelled to shift stores worth Rs 1.38 crore from station `C' to station `D' entailing an avoidable expenditure of Rs 0.91 crore on their airlift. Added to this, the stores so transferred were lying uninstalled at station `D' for more than a year since their delivery.

The matter was referred to Ministry in July 2008; their reply was awaited as of January 2009.

3.9 Recoveries at the instance of Audit

Recoveries of Rs 2.51 crore were effected and 12 sanctions amounting to Rs 0.82 crore cancelled at the instance of Audit.

During the course of audit at various field units, the following instances of failure to adhere to financial rules and regulations, errors and lapses were noted. In all these cases, the audit initiated action to recover amounts due or to reverse irregular decisions taken. Such action resulted in recoveries of Rs 2.51 crore and cancellation of irregular/unauthorised sanctions to the extent of Rs 0.82 crore. Each case is elaborated below:

Case I: Recovery of cost of crashed aircraft

As per Government orders issued in December 1980, Hindustan Aeronautics Limited (HAL) is responsible for safe custody of equipment entrusted to it for repair/overhaul. In case of damage/loss of such equipment, the Air Force Unit concerned would initiate action for recovery of the cost of damage/loss from HAL.

In February 1999, HAL reported to an Equipment Depot (ED) the crash / loss of an aircraft[52] which had been handed over to HAL Overhaul Division, Bangalore for major servicing. However, the ED did not initiate action for recovery of the cost of the aircraft. Audit pointed out the lapse to the ED and advised taking necessary action for recovery. After protracted correspondence, ED recovered Rs 1.34 crore from HAL in January 2008.

Accepting the facts, Ministry, in September 2008 stated that the amount paid to HAL towards cost of overhaul had been recovered.

Case II: Recovery of excess payment of Sales Tax

The Central Sales Tax (CST) Act, 1956 authorises Government Departments, including Public Sector Units, to avail concessional rates of Central/State Sales Tax by issuing prescribed declaration forms.

[52] Kiran MK II aircraft, Serial Number U-2478

CST is normally payable at the rate of 10 *per cent* on inter state purchases. However, on the benefit of concession being taken, the CST payable is only 4 *per cent.*

Air HQ placed three RMSOs[53] on HAL (Nasik Division) between January 1992 and August 1993 for the procurement of Hydro mobile trolleys at a total cost of Rs 9.58 crore. HAL, in turn, issued purchase orders to indigenous firms for supply of the said trolleys. While placing the purchase orders, HAL specifically indicated that the prescribed form `C' would not be issued and CST at the rate of 10 *per cent* would be paid. Subsequently, HAL claimed this sum from DAD[54], who is responsible for reimbursing these amounts on behalf of IAF. During the scrutiny of such paid bills of IAF, Audit observed (December 1997) that payment at the enhanced rate resulted in extra expenditure to the extent of approximately Rs 57.50 lakh. Clearly, DAD's failure to examine the bills before payment for detection of apparent mistakes, overcharges or other abnormal mistakes[55] resulted in excess payment of Sales Tax to the extent of Rs 57.50 lakh. Audit, therefore, pursued the issue which finally led to the recovery of Rs 57.00 lakh in July 2007. The Ministry accepted the facts in November 2008.

Case III: Recovery of rent and allied charges from unit-run schools

Air HQ, in December 1998, informed Air Commands that all Unit run Schools, opened without their permission were required to pay rent and allied charges with effect from January 1994. Air HQ directed that all IAF units having such schools should hold Board of Officers (BOO) and assess the rent and allied charges. The units were to start payment not later than January 1999. Audit scrutiny of the records of an IAF Wing revealed that it had not ordered BOO to fix rent and allied charges of an Air Force School, set up in 1962 without the approval of Air HQ. On being pointed out in Audit, in March 2007, an amount of Rs 24.40 lakh was deposited on account of rent and allied charges for the period January 1994 to March 2006 by the school authorities, between July and October 2007.

The matter was referred to Ministry in September 2008; their reply was awaited as of January 2009.

Case IV: Recovery of liquidated damages

Air HQ, in June 2004, concluded a contract with a firm for supply of certain items at a cost of Rs 3.16 crore. In August 2004, the firm was paid 20 *per cent* advance totalling Rs 63.14 lakh. The firm could not supply the items as per schedule - the delay ranging from one month to 13 months. Controller of Defence Accounts (CDA) failed to levy Liquidated Damages (LD) on the firm for delayed supply of goods. On audit pointing this out, the CDA recovered the LD amounting to Rs 13.691akh in October 2007.

The matter was referred to Ministry in September 2008; their reply was awaited as of January 2009.

[53] RMSO - Repair Maintenance and Supply Orders
[54] DAD- Defence Accounts Department
[55] Source: Defence Audit Code

Case V: Recovery of electricity charges

The Ministry, in May 1983, fixed the ceiling for free consumption of electricity. Disregarding these orders, an Air Force Station, in February 1997, increased the ceiling, thus allowing consumption of excess free electricity. During the scrutiny of records of a Garrison Engineer (GE) in August 2003 and June 2005, it was noticed that the excess consumption of electricity by Air Force personnel for different periods between January 1997 and December 2007 amounted to Rs 1.29 crore. The concerned GE confirmed in February 2008 that out of the recoverable amount of Rs 1.29 crore, a sum of Rs 21.24 lakh had been recovered while the balance recovery is under fructification.

The matter was referred to Ministry in September 2008; their reply was awaited as of January 2009.

Case VI: Cancellation of irregular and unauthorised sanctions

Audit scrutiny of Administrative Approvals (A/As) for work services issued by eight Air Force Stations (AFS) between December 2003 and February 2007 revealed that 11 of them were either not according to laid down scales or were not sanctioned by the appropriate competent financial authority (CFA). As such, they were unauthorised and irregular. Details are given below.

Sl. No.	**Name of Air Force Wing/Station**	**Nature of work services**	**Year of A/A** **Amount involved in Rupees lakh**	**Date of cancellation** **Nature of irregularity**
1.	**AFS, Tuglakabad**	Provision of Garages for SMQS	December 2003 9.06	August 2005 *In excess of authorised scales*
2.	**23 Wing**	Special repair to flooring in various OTM Accommodation	July 2006 4.97	November 2007 *Inappropriate/Lower* CFA
3.	**10 Wing**	Special repair to a building	February 2007 6.90	January 2008 *Inappropriate/Lower* CFA
4.	**11 Wing**	Work services for special repairs to four buildings	April 2006 14.96	June 2006 *In excess of authorised scales*
5.	**AFS, Agra**	1.Provision of JAFRIWALL for VIP Road	June 2006 9.90	June 2007 *In excess of authorised scales*
		2.Provision of Cooling Appliances against replacement requirements	November 2005 11.16	March 2007 *Duplicate sanction*
6.	**35 Wing**	Work services for supper Bar and connected works	June 2006 1.95	August 2006 *In excess of authorised scales*
7.	**40 Wing**	Provision of compound wall in front of SNCO's living in accommodation	November 2005 4.59	March 2006 *In excess of authorised scales*
8.	**AFS, New Deihi**	1. Additions/Alterations to Shed No. 16F at MT section	November 2005 1.96	January 2006 *Inappropriate/Lower* CFA
		2. Renovation of counter of Dining Hall of Airmen Mess.	October 2005 1.97	January 2006 *Inappropriate/Lower* CFA
		3. Provisioning of Fencing and Seating arrangement in children park at Vayu Sena Vatika, Gurgoan	April 2006 14.82	June 2007 *Inappropriate/Lower* CFA

On these being pointed out in audit, the Air Force Station authorities accepted the audit observations and cancelled the approvals, thus resulting in savings to the tune of Rs 82.26 lakh. Ministry, however, contested audit contention in specific cases (September 2008). With respect to Serial Nos 3 and 4, Ministry stated that as per practice, A/As for many low budgeted works are issued at the station level and are kept ready for release as per availability of funds and priority. Hence, cancellation of these works was a matter of routine. Ministry reply is not tenable as, in both cases, there were specific violations pointed out by audit which were agreed to by the Station authorities. In the case of Serial Nos 2, 5 (1), 6 and 8, Ministry intimated that the A/As were cancelled as the works contained certain items beyond the power of the local CFA and the same would be re-sanctioned by an appropriate CFA. However, the fact remains that these works have not been re-sanctioned as on date and thus, savings have been effected at the instance of audit. Audit noted that, in the case of Serial Number 7, although the A/A was cancelled, the work was still executed. The matter needs to be investigated and follow up action taken by IAF

CHAPTER IV : NAVY

Procurement

4.1 Inordinate delay in installation of a radar on an aircraft

Five radar `E' imported by Indian Navy at a cost of Rs 24.88 crore could not be installed for more than three years. Meanwhile, the radars lost 50 *per cent* of their useful life.

Ministry concluded a contract for supply of five radar `E' in January 2001 with M/s `P' at a cost of USD 5.35 million (Rs 24.88 crore). The radars, supplied between September 2002 and March 2003, were to be installed on the first batch of five aircraft `X' inducted in a phased manner in late 1980s in Indian Navy. Scrutiny of records of the Ministry revealed that:

- Aircraft `X' were originally fitted with Supermarac Radar (SMR). In November 1996, Navy procured AES 210 ESM system for installation on these aircraft to enhance their Electronic Warfare Capability. The SMRs with an estimated technical life of 12 years, were declared obsolete and unsupportable by the OEM[56] by 1999. Therefore, to support the aircraft `X', Ministry in July 2000 approved procurement of five radar `E', as replacement for the SMRs. The SMRs removed from these five aircraft `X' though earmarked for Coast Guard, were still awaiting disposal as of October 2008.

- Before processing the proposal for procurement of the five Radars, Naval Headquarters (NHQ) failed to undertake a feasibility study on their installation in the aircraft. A detailed survey for installation of Radars on the aircraft was carried out in September 2001, i.e almost nine months after conclusion of contract, and it was found that the existing AES system needed to be modified and relocated in the aircraft so as to accommodate the radar. Audit scrutiny, however, revealed that the modification of AES 210 ESM system was sanctioned at a cost of Rs 3.61 crore in March 2004, i.e, more than three years after conclusion of contract for the five radars in January 2001.

- Out of the five radar `E', two were fitted in aircraft `X' in 2006 and one more in 2007. However, two out of these three radars did not have working INS/GPS[57] system. The remaining two radars were yet to be fitted. Meanwhile, the radar B' have already lost 50 *per cent* of their useful life. Further, due to inordinate delay in relocation of AES ESM[58] system and in installation of radar `E', the five aircraft `X' could not be utilised optimally. Ministry stated, in October 2008, that installation of radar `E' was undertaken in a planned manner and the installation /modification completed on all the five aircraft in December 2007. However, the reply is not borne out by the facts as Western Naval Command, Mumbai and the Chief Resident Inspector stated, in June 2008, that the installation of two radars would be completed by only December 2008.

56 OEM - Original Equipment Manufacturer

Out of the five radar `E', two were fitted in aircraft `X' in 2006 and one more in 2007. However, two out of these three radars did not have working INS/GPS[57] system. The remaining two radars were yet to be fitted.

Meanwhile, the radar B' have already lost 50 *per cent* of their useful life. Further, due to inordinate delay in relocation of AES ESM[58] system and in installation of radar `E', the five aircraft `X' could not be utilised optimally.

Ministry stated, in October 2008, that installation of radar `E' was undertaken in a planned manner and the installation /modification completed on all the five aircraft in December 2007. However, the reply is not borne out by the facts as Western Naval Command, Mumbai and the Chief Resident Inspector stated, in June 2008, that the installation of two radars would be completed by only December 2008.

Thus, out of five radar `E' procured at a cost of USD 5.35 million (Rs 24.88 crore) during September 2002 - March 2003, only three radars could be installed by December 2007; two of them with restricted functionalities. The remaining two radars were expected to be installed only by December 2008. In the process the radars have lost nearly 50 *per cent* of their useful life. The intended role of the aircraft `X' fleet could thus not be fully realised for a prolonged period. Further, the SMRs removed from these five aircraft `X' though earmarked for Coast Guard, have not yet been handed over to Coast Guard (December 2008).

4.2 Delay in procurement and installation of Battery Monitoring Systems

The process of procurement of Battery Monitoring System urgently needed for submarines witnessed inordinate delays. The systems costing Rs 3.68 crore were yet to be installed. The systems have remained idle for three years and their warranty period has expired.

Consequent to Ministry's approval in October 2003, a Request for Proposal was issued in November 2003 on an urgent basis for the procurement of two sets of Battery Monitoring System (BMS) as a part of modernisation packages for submarine `A' and submarine `B'. Accordingly, in October 2005, Directorate of Procurement (DPRO) concluded a contract with M/s `Y' for the supply of two sets of BMS along with spares at a total cost of Euro 676,765 (Rs 3.68 crore). The systems along with the spares were received at the consignee depot in November 2006. The firm had been paid Rs 2.94 crore being 80 per *cent* payment against the contract terms by November 2006. Audit scrutiny of the case brought out the following:

57 An Inertial Navigation System (INS) is navigation aid that uses a computer and motion sensors to continuously track the position, orientation, and velocity of a moving object without the need for external references. Global Positioning System (GPS) is a navigational system involving satellites and computers that can determine the latitude and longitude of a receiver on Earth by computing the time difference for signals from different satellites to reach the receiver

58 ESM - Electronic Support Measures

- The sanction was accorded on an urgent basis in October 2003 so as to ensure that the systems would be available for Normal Refit and Medium Refit cum Modernisation of the submarines planned for the year 2005-06.
- The Ministry / NHQ took nearly 104 weeks as against the prescribed period of 19 weeks stipulated in Defence Procurement Manual 2005, in processing the case. Eventually, the contract was concluded in October 2005 with delivery scheduled for October 2006, thus revealing the lack of synchronisation between the procurement and the refit activities undertaken.
- The systems along with the spares were received at the consignee depot in November 2006. The discrepancies between order and the supplies were noticed only after eight months of receipt. Despite efforts made in August 2007 by the professional directorate for reconciliation of the part numbers of the item supplied with the ordered items, the matter could not be resolved till date (January 2009).
- The systems though received belatedly in November 2006, could not be exploited even during the subsequent short refit of the submarine `B' and submarine `A' carried out between June - September 2007 and April -August 2008 respectively due to the discrepancy noticed in the part numbers of the items supplied.
- The system procured would have to remain idle till the next scheduled refit of these submarines, viz. submarine `B' and submarine `A', likely to fall in March 2009 and March 2010 respectively. By this time, however, the warranty period of the systems would have expired.
- Both submarines were operating with the obsolete BMS, thereby affecting the operational capabilities.

Even two years after receipt of the urgently needed systems, they could not be exploited as the spares received did not conform to the required specification. Thus, the approval in 2003 of an urgent defence need to procure and install BMS onboard submarines could not be addressed even by 2009 despite an expenditure of Rs 2.94 crore.

The matter was referred to Ministry in September 2008; their reply was awaited as of January 2009.

4.3 Extra expenditure on procurement of steel plates

Avoidable delays in the procurement process led to the supply order being placed about 16 months after the urgent indent. The delay also resulted in cost overrun of Rs 1.82 crore.

The SNM class of ships is built of non-magnetic U3 steel, to suit the role of a minesweeper. This steel, originally procured from a foreign country has been indigenised by MIDHANI" Ltd. In January 2003, an urgent indent was raised by Material Organisation (MO), Mumbai for nine different sizes of nonmagnetic U3 steel plates. Procurement action was initiated by Naval Headquarters (NHQ) on Single Tender Basis. However, as the estimated cost (Rs 2.01 crore) of the indent was beyond their delegated powers [60], NHQ issued a tender inquiry to MIDHANI in December 2003 after obtaining concurrence of the Defence Secretary (November 2003). Finally, in June 2005, an order was placed on MIDHANI Ltd. for the supply of 87.1 ton steel plates at a total cost of Rs 9.08 crore after availing a discount of 7.5 *per cent.* The items were supplied in March 2006.

Audit examination of the connected documents leading to the purchase order showed considerable delays resulting in an escalation in cost of Rs 1.82 crore. Further, the offer of 7.5 *per cent* discount was not pursued while placing a subsequent order within six months of the first order. Detailed findings follow.

I. Delay in processing of case

Audit noticed avoidable delays in the processing of the offer at different stages as given below.

- Though offer of MIDHANI received in December 2003 for Rs 7.26 crore was valid for 120 days, the supply order could not be placed within validity period. Subsequently, the firm revised its quote to Rs 9.82 crore in January 2005.

- Against the stipulated time of seven days as per Naval Instructions, technical evaluation and approval took five months to complete. As a result, the commercial bid was opened in June 2004, two months after the validity of the bid expired.

- Ministry, on their part, also delayed the placement of the purchase order. Although the Ministry was aware of the Proprietary Article Certificate (PAC) status of MIDHANI, they failed to so advise NHQ while according the approval (November 2003) to the floating of the tender. The Ministry directed NHQ to grant PAC status to MIDHANI only when the case for revised sanction was taken up in January 2005. After the case was re-submitted following the issue of PAC, Ministry, in April 2005, recommended that NHQ place the purchase order itself as the amount involved was within their delegated financial powers [61]. This delay of about 16 months in the floating of the tender was entirely avoidable.

Accepting the facts, Ministry stated (September 2008) that the delay was on account of detailed deliberations for the first-time buy of a complex nature from an indigenous source coupled with the prevailing procedures. Ministry's reply is not tenable as the procurement action was beset with delays at each stage not connected to the complexity of the transaction *per se*

II. Extra expenditure

In July 2004, after opening the commercial bid, the Professional Directorate brought down the requirement since an indigenous source was available and there was no need to stock-pile the item. The order for the reduced quantity was placed in June 2005. However, in January 2006, Controller of Procurement (CPRO), Mumbai concluded another contract for the remaining quantity[62] in case of three sizes of same steel plates with MIDHANI without being aware of, and therefore not being able to negotiate, the 7.5 *per cent* discount offered on the first procurement.

59 M/s Mishra Dhatu Nigam Ltd. (MIDHANI), a Defence Public Sector Unit
60 Rs 2 crores for purchase on Single Tender Basis
61 R_s 10 croors on PAC basis
62 This was not procured in the initial order in June 2005

Ministry informed Audit (September 2008) that even though a copy of the supply order placed by NHQ on MIDHANI in June 2005 was forwarded to MO Mumbai, it was not registered on the computerised system. However, the fact remains that the CPRO, Mumbai did not consult the Last Purchase Price details which is to form the basis of any future purchases. This led to an avoidable payment of Rs 0.24 crore to MIDHANI.

To sum up, delays in the procurement process led to the supply order being placed about 16 months after the urgent indent. The delays coupled with the failure of Navy to conclude a contract within the validity period of the offer resulted in avoidable expenditure of Rs 1.82 crore. Procurement of identical steel plates by CPRO within a short period of six months from the original order without pursuing the discount offered for the first purchase resulted in an avoidable payment of Rs 0.24 crore.

4.4 Inefficient procurement

Deviation by the Navy from the procurement procedure prescribed by Government resulted in avoidable expenditure of Rs 1.52 crore.

The Defence Procurement Manual (DPM) prescribes procedures for revenue procurement and stipulates the methodology to be followed and the time to be taken for specific activities. The DPM seeks to ensure greater transparency and a level playing field. The following three cases bring out the need to adhere to the stipulated provisions in effecting procurements.

Illustration I: Non-adherence to stipulated time-frame for acquisition

Based on an urgent indent raised in October 2004, Controller of Material Planning (CMP), Material Organisation (Visakhapatnam) floated a Tender Enquiry (TE) in February 2005 to twenV six firms for the procurement of twelve different sizes of naval brass rods [3]. The tender was discharged as the Navy found the Price Variation Clause (PVC) indicated by the tenderers not acceptable. In December 2005, CMP (V) re-issued TE to ten firms incorporating a PVC and also revising the quantities of the items. Again the price variation clauses of both L1 and L2 did not conform to the formula stated in the TE. Discarding the stated importance of the PVC, Navy requested (May 2006) both the firms to reconfirm their quote without the price variation clause and finalised the supply order.

Audit noticed that there was delay at each stage of procurement as under:

ACTIVITY	STIPULATED TIME PERIOD	ACTUAL TIME TAKEN
Raising of Indent to floating of TE	3 weeks	20 weeks
Giving counter-offer to Lf	*2* weeks	14 weeks
Entire Procurement Action	*19 weeks*	*80* weeks

The delay resulted in procurement of most of the items at higher rates in the second tender with consequential extra expenditure of Rs 1.04 crore on the procurement of the naval brass rods.

63 Naval brass rods are extensively used in marine construction industry and are renowned for their high strength and corrosion resistant property.

In reply, Navy stated that the delay was attributed to seeking clarification on the price variation clause and also due to increase in the price of the steel, which led to re-tendering. The fact remains that the price variation clause which was deemed essential and necessitated the retender was ultimately discarded. Had Navy negotiated within two weeks as stipulated in the DPM, purchase order could have been placed in time and extra expenditure could have been avoided.

Illustration II: Violation of Tendering Norms

As against two indents raised by CMP Mumbai in September and October 2004 for the procurement of different sizes of Shoes Leather Non-skid DMS on priority basis, Material Organisation (Mumbai) floated a Limited Tender Enquiry (LTE) for 18,795 pairs and Open Tender Enquiry (OTE) for 35,240 pairs in November 2004. Audit found the following deviations from DPM:

- LTE is to be undertaken for procurements upto Rs 25 lakh. In the present case, the LTE procurement was made for Rs 60.60 lakh. There was no justification by the competent authority on record specifying nature of emergency nor explaining why the procurement could not be anticipated. On the other hand, while the processing of the indent was `normal priority', the indent indicated the priority as `operational'.

- Splitting of the requirement was unjustified as both procurements were processed at the same time and the stores were delivered within a short span of time, between September and December 2005.

- The quote of one firm under LTE, namely M/s Green Line Company was rejected on the grounds of poor quality and past performance and supplies were obtained from L2 firm (M/s Lakhani India) @ Rs 310 (plus 4 *per cent* ST). However, under OTE, the offer of M/s Green Line Company was accepted at the rate of Rs 224 per pair (plus 4 *per cent* ST).

Besides the irregularity in procedure, the price difference of Rs 86 per pair due to rejection of the lowest tenderer under LTE resulted in additional expenditure of Rs 16.81 lakh.

Illustration III: Differential interpretation of contracting clause

In August 2005, tenders were floated on LTE basis for the procurement of 46,860 pairs of shoes. Out of the five firms that responded, technical bids of M/s Green Line Company and M/s ACME Boot Company were found acceptable. The quote of M/s Green Line Company at Rs 255 per pair plus 16 *per cent* Excise Duty (ED) and 4 *per cent* Sales Tax (ST) was not considered the lowest on the ground that M/s ACME Boot Company had quoted Rs 280 per pair plus 4 *per cent* ST but without any excise duty. A purchase order was placed on M/s ACME Boot Company in October 2005 for the supply of 46,860 pairs of shoes at a total cost of Rs 136.45 lakh. Additionally, a repeat order was placed in January 2006 for the supply of 72,990 pairs at a total cost of Rs 203.17 lakh.

Audit scrutiny revealed that

- but for the excise duty element the rate quoted by M/s Green Line Company was the lowest; and

- Navy had procured shoes from suppliers giving ED exemption in the past.

Thus, by adopting a differential approach, Navy placed the order at a higher rate thereby conferring an unearned benefit of Rs 31.16 lakh on the supplier. In reply, Navy stated (October 2007) that shoes were not exempt from ED. However, it is to be noted that ED exemption certificate had been given in the past to the supplier M/s Lakhani India.

The matter was referred to Ministry in September 2008; their reply was awaited as of January 2009.

Contract Management

4.5 Improper implementation of radar fitment policy

Navy procured six radar `R' for its modern stealth frigates and landing ship tankers under construction at a cost of Rs 18.85 crore even though performance of the radar had been sub-optimal and its phasing out was under active consideration. The procurement process of COTS radars as replacement radars was neither transparent nor economical and entailed an extra expenditure of Rs 0.56 crore.

In November 2004, the Navigation Radar Fitment Policy (NRFP) of Indian Navy (IN) was revised. From then on, Commercially Off The Shelf Radars (COTS radar) were to be fitted as the primary radar in place of radar `R' manufactured by BEL[64] on all Naval ships in commission, where replacements were due. COTS radars were also to be the initial fitment for new ships under construction. The policy clarified that major war vessels in commission, already fitted with `R'/other non-commercial radars as their primary navigation radars, would be fitted with an additional COTS radar. Audit reviewed the recent acquisitions of radar `R' and COTS radars.

I. Delay in promulgation of policy led to avoidable procurement

Radar `R' had been in service in the IN since the 1980s. Although the life of a radar was approximately 12 years, a comprehensive performance evaluation was undertaken only in June 2002. The review brought out that the COTS radar was functionally superior, easy to install and available at *one fourth* the cost of the radar `R'. Radar `R' was also found to be sub-optimal in its performance and plagued by poor maintainability. The results of audit scrutiny of the recent acquisitions of radar `R' and COTS radars were as under:

→ Despite negative user feedback and cost and operational inefficiency of the radar `R' as brought out in the comparative evaluation of June 2002, Naval Headquarters (NHQ took 30 months to issue (November 2004) the revised NRFP replacing radar `R' with COTS radar as the primary radar.

→ In the interregnum (2002 and 2003), Navy placed orders for procurement of six radar `R' at a total cost of Rs 18.85 crore for six modern warships[65] under construction.

64 BEL - Bharat Electronics Limited
65 Three stealth frigates and three Landing Ship Tankers (LSTs)

→In addition, a sanction amounting to Rs 12.40 crore for six radar `R' as replacement was placed in November 2003 for `G' class of ships. In light of the unsatisfactory reports, Navy held the order in abeyance and tasked BEL to enhance the performance of the radar `R'. Finally, the sanction had to be cancelled (January 2005), as BEL was unable to make any perceptible improvement

→On the other hand, no action was initiated to cancel the procurement of the six radars for the ships under construction and five of the six radars were received belatedly in 2006.

→Installation of radar `R' with sub-optimal performance on the `A' number warships under construction would adversely impact the operational preparedness of Navy as these radars, in Navy's own assessment, have functional deficiencies in range, clarity of echo, detection of small targets etc. Further, in pursuance of the NRFP 2004, the warships under construction would now have to be fitted with additional COTS radar entailing extra expenditure of a minimum of Rs 0.68 crore.

→Naval HQ had also sanctioned (June 2006) procurement of three radar `R' from BEL and placed an order (October 2006) at a cost of Rs 0.85 crore to be delivered by April 2008. Navy stated in (September 2007) that the procurement was required as war reserve since new frigates and LSTs were fitted with radar `R'. This justification lacks conviction as Navy had already replaced 27 radar `R' with COTS radars based on the new NRFP and any major unit of the radar required could have been easily retrieved from them.

II. Procurement of COTS radars was non-transparent and inefficient

Procurement of COTS radars was to be done by the Commands on a multivendor basis in accordance with the operational requirements set out. Western Naval Command (WNC) through the CPR0[66], Mumbai procured radar `B' on PAC[67] basis. The PAC was granted for reasons of urgency and standardisation. Audit scrutiny disclosed the following omissions.

☒ The grant of PAC was not a well-reasoned decision and limited competition as at least three other vendors existed for supply of such radars.

☒ The justification of `standardisation' for grant of PAC did not also stand to reason as the procurement was decentralised to the Commands and each Command was free to procure from different sources.

☒ After the grant of the PAC, the same Command placed orders for COTS radar on two other foreign firms.

- ☒ Following Naval HQ directives, Eastern Naval Command placed order for COTS radar on another foreign firm through Limited Tender process. The firm granted PAC by WNC was not L1 and its quote was higher by Rs 0.43 crore per radar.

- ☒ Notwithstanding the grant of PAC, WNC placed purchase orders on the same vendor at different rates between November 2003 and June 2004. The rates contracted showed wide variations over a period of eight months; from PDS 36,246 for three radars in November 2003 down PDS 15,702 for five of the same radars. This resulted in an avoidable extra expenditure of Rs 0.56 crore.

To sum up, delay in promulgation of revised policy regarding change in primary radar resulted in the procurement of radar `R' costing Rs 18.85 crore with sub-optimal performance capabilities. The decentralised purchase procedure of COTS radars was neither transparent nor cost effective.

The matter was referred to Ministry in August 2008; their reply was awaited as of January 2009.

4.6 Integrated Logistic Management System (Air)

The ILMS (Air) application was implemented in August 2001 to enhance the efficiency of air stores logistics organisation with regard to inventory provisioning, procurement, warehousing and distribution. The Navy needs to use ILMS optimally for effective and cost efficient managerial decisions.

1. Introduction

The `Integrated Logistic Management System (ILMS)' for Air Stores, an in-house computerised system, was developed to enhance the efficiency of air stores logistics organisation with regard to inventory provisioning, procurement, warehousing and distribution. The project was commissioned Navy-wide in August 2001. Navy had spent Rs 2.34 crore towards hardware and software and Rs 0.33 crore on manpower training. It continued to incur an average annual expenditure of Rs 0.49 crore on maintenance.

ILMS (Air) is a mission critical system with complete inventory of air stores being managed on-line in real time. There are 14 servers using Oracle software as Relational Data Base Management System (RDBMS), which are located at Kochi, Goa, Mumbai and Visakhapatnam. Navy needed to use the ILMS application optimally for more effective cost efficient managerial decisions. Results of audit of the use of ILMS were as under:

66 Controller of Procurement
67 Proprietary Article Certificate
68 MSL - Para 6.32 of Material Planning Manual

2. Levels of Stock Held

The stock of an item should be between Minimum Stock Level (MSL[61]) and Upper Stock Level (USL[69]) based on Annual Consumption Level (ACL). MSL is presently taken as 1.0 ACL and USL as 3.0 ACL. Items which are stocked less than MSL indicate that sufficient stock is not available which may result in grounding of aircraft/ robbing of spares from another aircraft under repair. Items above USL have cost implications in terms of blocking of funds due to excess procurement and additional inventory carrying cost. Analysis of the items in stock revealed that:

- A number of items were either more than USL or less than MSL. On an average, 22 *per cent* of the items stored for various type of aircrafts were either under-stocked or over-stocked at Kochi and Goa depot.

- A further analysis of the overstocked inventory revealed that orders for *56 per cent* of the overstocked items were placed after induction of ILMS (Air).

ILMS (Air) informed that stock holding above USL and below MSL was possibly due to delayed provisioning and variations in current consumption rate due to operational requirements. The reply is not tenable as the data on outstanding demand and annual consumption level in respect of each item is available to the procurement agencies.

3. Cost of items where stock is more than the Upper Stock Limit

The value of items where stock is more than USL was analysed from the data furnished by ILMS (Air) system. It was observed that over-provisioning of stores was to the tune of Rs *542.42* crore. The analysis further revealed that procurement orders for the overstocked items costing Rs *495* crore were placed after I January *2002,* i.e. after the ILMS (Air) system was commissioned.

4. Non-moving Inventory

Audit made an attempt to identify the quantity and value of items not issued for more than seven years. It was seen that a total of 38,889 items have not been issued for the last seven years. The value of the items worked out to Rs 40.76 crore in respect of 3,666 items whose last price details were available.

5. Non-identification of Shelf Life expired items

Capturing of data with regard to Date of Manufacture and Date of Expiry is essential to work out the shelf life o: an item and also to monitor issue of stores'vis-a-vis calendar storage life. Further, as per policy promulgated by HQNA in *2001,* the extended life of an item cannot be more than half of their shelf life. However, relevant data was not captured in the system.

69 USL - Para 6.40 of Material Planning Manual

In reply, MO (Goa) stated that the issue is being forwarded to HQNA for impact analysis and implementation in ILMS (Air), if feasible. ILMS (Air), Kochi replied that there are certain items for which these details are not applicable so the fields cannot be made mandatory. The reply is not tenable since in the absence of these details, the service/overhaul life of an item cannot be worked out. It was further observed in a test check that items worth Rs 0.38 crore were lying in stock after their life expired nearly five to twenty three years back. This clearly indicates a failure on the part of Navy to use the system in inventory management.

6. Incomplete Data Capturing

Audit scrutiny of the data captured for Annual Review of Demand (ARD) for the year 2007-08 revealed that out of 9,765 parts considered for ARD complete data had not been entered as shown below:

- 351 items did neither indicate the Indian Naval Air Publication reference number nor main system name.

- 837 items did not show Higher Assembly reference number required for exact identification of spares.

- Last Price details were not available in respect of 1,494 items. In the absence of this information, the reasonableness of the price for future procurements cannot be assessed.

7. Conclusion

ILMS (Air) system developed with in-house expertise could be more optimally utilised as a Management Information System tool to have better inventory management.

The matter was referred to Ministry in December 2008; their reply was awaited as of January 2009.

4.7 Failure to have unsuitable equipment replaced promptly

The Navy failed to persuade a foreign firm to replace unsuitable items supplied. As a result, the expenditure of Rs 3.85 crore on their import was yet to yield any operational benefit to the Navy.

Defence procurement regulations clearly specify procedures for ensuring that the quality of supplies received is consistent with specifications prescribed. Adherence to such provisions, formally stated through Standard Conditions of Contract as used by Naval Headquarters (NHQ), assumes significance in cases of import where it would be cumbersome to take up quality issues with the supplier, especially when payment has already been made. Audit noticed that in two cases of import, Navy was yet to have the unsuitable items purchased at a cost of Rs 3.85 crore replaced. Details of the two cases follows:

Case I

Chariot Craft are used for attacking harbour facilities and sabotaging enemy ships during hostile conditions. In order to meet the urgent requirements of these crafts, Indian Navy (IN) identified 149 critical spares for urgent procurement and in September 2005, Directorate of Procurement (DPRO), Naval Headquarters (NHQ) concluded a contract with the OEM[70] firm for the supply of these spares at a negotiated cost of Euro 717,033.98 (Rs 4.10 crore).

A review of post-contractual developments revealed that the spares were received by Material Superintendent, Mumbai within the stipulated period of April 2006. On-receipt inspection of the stores at the consignee depot and at the user unit showed that 28 Chariot spares (19 per cent), amounting to Rs 2.42 crore, supplied by the firm did not conform to the specification and were, thus, found unsuitable for the Chariots. Audit noticed that conditions of the contract stipulated that:

- The stores to be supplied would be free from any defect/faults in material, workmanship, manufacture and would be in full conformity with the specifications and drawings.
- In the event of any stores being found not in accordance with the order, the firm would replace them free of cost within 90 days of the report of the defect by the purchaser.
- A warranty for 15 months would be provided by the firm from delivery or twelve months after the receipt of the stores at the consignee whichever was earlier and this warranty shall survive inspection**.**

Though the firm had agreed in August 2007 to replace these spares on the matter being taken up in December 2006, the unsuitable items had not been replaced as of January 2009. In the meantime, the warranty period had also expired. Consequently, the spares requirement of the chariot crafts are being met by cannibalising spares from three Chariots converted for the purpose, thereby hampering operational capability.

The Ministry accepted the facts in January 2009**.**

Case II

DPRO, NHQ concluded a contract in January 2005 for import of two Sullage Pumps from a foreign firm at an aggregated cost of PDS 182, 00071 (Rs 1.43 crore). The pumps were received in March 2006 through Embarkation HQ and Controller of Warehousing Mumbai. During installation the Sullage Pumps were found to be unsuitable in terms of capacity, working pressure and revolutions per minute. DPRO reported the discrepancy to the supplier in May 2006 and requested them to replace the unsuitable pumps. The supplier in turn informed DPRO in August 2006 that the two unsuitable pumps supplied would be replaced only after a general arrangement drawing of bareshaft pump produced by the manufacturer was approved by the IN and orders were placed on the firm in respect of three outstanding enquiries for supply of spares. DPRO, however, did not agree to the conditional offer and asked the firm for replacement which was occasioned due to wrong supply and

70 **OEM - Original Equipment Manufacturer**
71 1 PDS-Rs.79.11

violation of contractual terms. Though the firm had eventually agreed in September 2007 to replace the pumps, they were yet to be replaced as of January 2009.

The demand for the Sullage Pumps was raised in April 2003 based on Anticipated Beyond Economical Repair (ABER) certificate accorded in January 2002. In the absence of suitable pumps, the existing pumps were being exploited during the last six years indicating that operational effectiveness was being compromised.

Ministry stated in January 2009, that the discrepancies could be noticed only when the pumps were put to actual use, which may occur occasionally in case of equipment imported from other countries. The fact remains that though the firm agreed in September 2007 to replace these pumps, they have not been replaced as of January 2009. As a result, even three years after expending Rs 1.43 crore, the IN is yet to derive any operational benefit.

To sum up, in the two cases illustrated above, although imported items did not conform to qualitative requirements, the IN could not get the items replaced promptly despite having paid for them fully. Thus, the IN was yet to derive any operational benefit from the expenditure of Rs 3.85 crore.

Miscellaneous

4.8 Overpayment of Value Added Tax

Failure to avail of a concession resulted in avoidable payment of VAT of Rs 3.38 crore.

In July 2006, the Government of Maharashtra issued orders, ***inter alia,*** exempting the Central Government from paying Value Added Tax (VAT) in excess of 4 ***per cent*** on purchase of goods valuing more than Rs 5,000. This concession was available for a period of nine months till its withdrawal in April 2007. Audit scrutiny of records pertaining to purchases made by six establishments of Indian Navy and Coast Guard in Mumbai revealed that they did not avail the concessional facility during its currency. This resulted in avoidable payment to the extent of Rs 3.38 crore (Annexure V refers) on account of VAT on purchase of items costing Rs 44.71 crore.

On this being pointed out, four out of the six establishments conceded that they did not make use of the facility as they were not aware of the existence of such a concession.

Integrated Headquarters, Ministry of Defence (Navy) [IHQ, MOD (N)], in April 2008, stated that the overpayment had resulted mainly because of lack of awareness on the subject. They further stated that VAT being a recent tax initiative, ought to have been accompanied by adequate publicity/ promulgation of the revised procedure at the appropriate levels. IHQ, MOD (N) acknowledged the need for an institutionalised mechanism in terms of issue of policy letters/ directives to lower formations on the correctness / applicability of new regulations.

The matter was referred to Ministry in June 2008; their reply was awaited as of January 2009.

4.9 Savings at the instance of Audit

Naval HQ's review of the requirements at the instance of Audit resulted in reduction of ordered quantities in various purchase orders leading to savings of Rs 2.56 crore.

Audit noticed that some procurements were in excess of requirements and did not correspond to consumption levels and the demand outstanding. Each case is summarised below:

Case I

Material Organisation (Kochi), placed four Repair and Maintenance Supply Orders (RMSO) on Hindustan Aeronautics Ltd (HAL), Bangalore from November 2004 to February 2006 for procuring eight items of Chetak spares at an aggregated cost of Rs 5.38 crore. Audit scrutiny revealed (October 2006) that in respect of six items on order, not only did no demand exist but the quantities indicated were disproportionate to the consumption pattern and the then existing stock. Audit, therefore, suggested (February 2007) that the requirement in respect of these items be reviewed. After considering the audit observations, Naval Headquarters amended the purchase order (March 2007) by deleting four items costing Rs 3.76 crore.

Accepting the facts, Ministry/IHQ stated in August/September 2008 respectively that although Navy had cancelled the item, HAL did not accept the cancellation of orders for two item as spares for manufacture of these items are not available due to obsolescence and exorbitantly high lead time for supply of these items in case of future requirement. Based on the review and further interaction with HAL, Naval HQ cancelled the purchase orders of two items costing about Rs 99.93 lakh.

Case- II

In July 2004, MOK accepted a tender from M/s HAL Bangalore, for supply of five spares for Chetak aircraft which *inter-alia* included 14 Tail Rotor Heads (TRH) at a total unit cost of Rs 10.41 lakh. Examination of subsequent purchase orders revealed that a Repair, Maintenance and Supply Order (RMSO) was placed by IHQ, MOD (Navy) in November 2004 at a total unit cost of Rs 6.76 lakh. On this being pointed out by audit, MOK took up the matter with HAL and the firm reduced the unit cost to Rs 6.51 lakh resulting in savings of Rs 50.93 lakh.

The matter was referred to the Ministry in August 2008; their reply was awaited as of January 2009.

Case III

Based on the Annual Review of Demand (ARD) for the year 2004-2005 raised by Material Organization, Kochi (MOK), IHQ MOD (N) placed a purchase order on M/s Amsafe Logistic & Support, UK in July 2006 for procuring 27 Cover Assembly Strips for the

Seaking Aircraft at a total cost of Rs 31.59 lakh (PDS 39,488[72]). These items were received between July and October 2007. Audit observed in December 2007 that MOK raised another ARD in

2006-2007 based on which IHQ, MOD (Navy) placed a purchase order in November 2007 for procurement of 40 more of the same item on the same firm at a total cost of Rs 46.06 lakh (PDS 57,578). As the stock held was 29 against an Annual Consumption Level (ACL) of three and as there was no demand outstanding for this item, audit, requested MOK in December 2007 to review the requirement. In January 2008, Navy cancelled the purchase order worth Rs 46.061akh.

The matter was referred to Ministry in August 2008; their reply was awaited as of January 2009.

Case IV

Starter Bullet MOD 2179 is used in Seaking Helicopter Engine. A scrutiny of the receipt and issue details of this item at MOK revealed that the depot had received two Starter Bullets from a UK firm in January 1981 and they were issued to Naval Aircraft Yard (NAY), Kochi only in the month of August 1988. Subsequently, NAY, Kochi returned the items to the depot in September 1999 and these were then issued to INS Kunjali in June 2000.

IHQ, MOD (N) in December 2004 placed another purchase order for the procurement of 45 Starter Bullets on M/s Aero Logistics Ltd., UK along with various other items for Seaking Helicopters at total cost of PDS 328,479.15 (Rs 2.63 crore). The unit cost of the Starter Bullets was PDS 2,108 (after deducting 6.33 *per cent* discount) equivalent to Rs 1.691akh.

On being queried about the rationale behind excess provisioning, the depot carried out a review and pruned the actual requirement of the item to ten. Accordingly, in January 2007, IHQ, MOD (N) amended the purchase order for the item from quantity 45 to ten, thus, leading to pruning of Rs 59.01 lakh from the original procurement order.

The matter was referred to Ministry in August 2008; their reply was awaited as of January 2009.

Audit Advisory:

As there is a risk of similar cases of injudicious procurement, Naval HQ is advised to carry out a review of the adequacy of the prevailing material management system and internal controls in provisioning and procurement practices.

72 1 PDS = Rs 80

CHAPTER V: COAST GUARD

Procurement

5.1 Procurement of spares at a higher cost by the Coast Guard

Failure to ascertain the rates of similar spares supplied to the Air Force and Navy led to the acceptance of higher rates by the Coast Guard resulting in additional payment of Rs 1.84 crore on the procurement of spares for an aircraft.

The Indian Coast Guard (ICG) utilises the aircraft `X' for a wide spectrum of activities like surveillance, pollution control, aerial survey, transport and search and rescue. In March 2007, a Request for Proposal (RFP) was issued to HAL for the supply of 166 types of aircraft `X' spares to the ICG. As per the general conditions of the RFP, the seller was duty bound to intimate the buyer the details of supply of the spares to any other organisation. Further, HAL was also to confirm that similar spares were not supplied by them to any other department of the Government of India at a price lower than that offered; and, if so supplied, the details regarding the cost, time of supply and quantities were to be included as part of the commercial offer. The RFP also stipulated that in the event of non-disclosure and subsequent discovery at any stage of the fact that similar spares were supplied to another organisation at a lower price, then that very price will be applicable to the present case with due allowance for the passage of time. The difference in the cost would then be needed to be refunded to the buyer.

Prior to the opening of HAL's commercial proposal (May 2007), a benchmark price was fixed by the Contract Negotiation Committee (CNC) based on the Last Purchase Price and Professional Officers' Valuation. HAL offered a negotiated price of Rs 11.80 crore which was accepted (March 2008) by Ministry.

During 2005-2007, HAL also entered into contracts with the Indian Navy and Indian Air Force for the supply of spares of aircraft `X'. Audit scrutiny of the contracts revealed that the price of the spares supplied to the ICG was much higher than those supplied to the Air Force and Navy. Rates quoted for 37 items of spares for the Coast Guard were higher by 6 to 214 *per cent* than the cost of spares supplied to the Navy under the contract of March 2005. This resulted in extra expenditure of Rs 1.84 crore after allowing escalation of 3 *percent* per year for three years over Navy's prices. Response of CG HQ regarding recovery of extra expenditure is awaited (January 2009).

Thus, the Coast Guard / Ministry failed to ascertain the reasonability of the rate quoted for the spares by the firm in comparison to the rates for similar supplies to the Air Force and Navy. This indicated a lack of co-ordination in the procurements being done by different Services for similar items in the instant case.

The matter was referred to Ministry in August 2008; their reply was still awaited as of January 2009.

CHAPTER VI: RESEARCH AND DEVELOPMENT ORGANISATION

6.1 Tardy progress in development of a radar

Despite almost a decade in developmental effort with an expenditure of Rs 27.88 crore, DRDO could not productionise a radar as required by Navy. The objective of providing a maritime radar remained unfulfilled.

In July 1997, Indian Navy (IN) projected specific operational and technical requirements for a maritime radar so as to ensure that the helicopter `A' being inducted into service perform their patrolling role effectively. Accordingly in April 1998, development of a radar `P', for the Naval version of helicopter `A' Weapons System Integration (WSI) was accepted by the competent financial authority (CFA). Navy agreed to fund the development project as part of the WSI in the helicopter `A' project plans subject to amortisation of the expenditure by DRDO, the Production agency. In June 1998, Government issued sanction for the development of radar `P' for Naval helicopter `A' at a cost of Rs 24 crore to be completed by June 2002. Subsequently, in May 2005, the Defence Procurement Board recommended procurement of radar `P' for Coast Guard as well. Audit scrutiny of the project revealed the following:

1. Closure of Project without productionising the radar

The project for the development of the radar `P' for Naval version of helicopter `A' was a Staff Project. For such a project to be deemed successful, it should satisfactorily meet the users' requirements within the stipulated time frame at a reasonable cost. Further, the item must also be eventually productionised. However, though no order had been placed by the IN for the radar till date (August 2008), DRDO had closed the project in 2007, retrospectively from 2004, on the grounds that the aims of the project had been achieved.

While terminating the project, DRDO declared that the radar `P' (1) had been successfully developed for the helicopter `A', (2) was successfully modified and installed on CG aircraft `X', (3) had scope for international competition and export, and (4) was adaptable to various other platforms. However, audit scrutiny of the connected documents indicated:

- Radar `P' - had failed to meet three out of eight requirements.Naval Headquarters (NHQ, in September 2005 and August 2008, declared that the radar did not meet its requirements.

- In November 2006, CG emphasised that the radar `P' was unable to perform the primary role of maritime reconnaissance fully. Coast Guard Headquarters (CGHQ, therefore, sought permission to import ten radar `Q' for aircraft `X'.

☒ The user associated development trials of radar `P' were carried on board helicopter `A' (utility version), helicopter `B' and aircraft `X'. An expenditure of Rs 2.60 crore had to be incurred on hardware modification of a helicopter `B' for fitment of radar `P' as it was to be primarily developed for helicopter `A'. Since the radar was, as yet, in the designer evaluation stage, success on this front can only be gauged at a later date.

As the radar `P' did not possess a critical feature (ISAR[73]/SAR[74]) required by IN, it was doubtful whether IN would support its productionisation. Further, Naval Project Office (helicopter `A') informed Audit in July 2008 that they did not intend to acquire helicopter `A' (WSI). As a result, the successful development of radar `P' for helicopter `A' (WSI) (with or without the critical feature) is a moot point.

II. Initiation of new DRDO project for radar `P'

In January 2003, a new project titled `Xtravision 2004' (XV 2004) was initiated by DRDO for developing SAR and ISAR features for the radar `P'. Accordingly, Government issued sanction for the development of Maritime Patrol Airborne Radar for Naval helicopter `A' with ISAR feature (XV-2004) in August 2003 at a cost of Rs 14.50 crore indicating an optimistic PDC[75] of 36 months and a pessimistic PDC of 42 months.

This new project was initiated in 2003 when the radar `P' project was still in the developmental stage. While endorsing the proposal for the new project, DRDO stated that the XV-2004 project was an off-shoot of the earlier project in a Mark I - Mark II kind of developmental effort. It is to be noted, however, that the radar `P' project's ('Mark-I') goals included incorporation of SAR/ISAR. A new project (Mark-II) was initiated in order to achieve the very same goals of the earlier project, albeit with a fresh set of target dates and new funding.

While seeking sanction for the new project, it was emphasised that Electronic Research and Development Establishment (LRDE) possessed the essential core knowledge and facilities to meet the specifications of the maritime radar with ISAR/SAR feature and that LRDE would be able to meet the deadlines of Navy. It was further stated that LRDE would be able to deliver the XV-2004 in one and a half years' time as against the three years' time that was originally sought. However, PDC of this project had at first (January 2007) to be extended to January 2008 and again to January 2009 in February 2008. As on date (November 2008), the XV-2004 radar was at the trial evaluation stage.

Ministry stated in September 2008 that the user associated trials were carried out during January 2004 - February 2005 and the radar `P' operated reliably with certain minor shortfalls and CEMILAC, the airworthiness certifying authority, gave provisional clearance. Ministry also stated that the non availability of the intended platform was a hindrance and that the radar which has a flexible architecture was adopted to other platforms like helicopter `B' and

73 ISAR - Inverse Synthetic Aperture Radar

74 SAR - Synthetic Aperture Radar

75 PDC - Probable Date of Completion

aircraft `X' and its performance demonstrated. The fact remains, however, that six months after the user associated trials, CGHQ declared that the radar did not meet its requirements. Even after further trials of March 2006, CGHQ was of the view that demonstration of certain advanced features would take considerable time. As of April 2008, the radar was still at the designer evaluation stage and lacked classification and recognition features considered essential for airborne maritime surveillance and was yet to undergo demonstration trials.

Thus, despite claiming that the project was a success, DRDO was unable to deliver a radar as per stated requirements for installation on the desired platform. On the other hand, DRDO had to initiate another `Staff Project' with new funding for achieving the same goals. In sum, even after passage of nearly a decade and after incurring Rs 27.88 crore expenditure, the fundamental objective of productionising a user acceptable radar was not achieved.

-sd-
(R.B.SINHA)
Principal Director of Audit
Air Force and Navy

New Delhi
Dated: 19 June 2009

Countersigned

-sd-
(VINOD RAI)
Comptroller and Auditor General of India

New Delhi
Dated: 7 July 2009

ANNEXURE-I

(Refers to Para No. 1.10.2)

List of Action Taken Notes not received as of 31st December 2008

Sl. No.	Report No. and Year	Chapter of the Report	Para No.	Pertains to	Brief Subject
1.	5 of 2006	IV	4.1	Navy	Procurement of one extra fast attack craft
2.	5 of 2007	III	3.2	Air Force	Avoidable extra expenditure in procurement of spare aero-engines
3.	5 of 2007	VI	6.2	Navy	Audit of Integrated Pay Accounting and Disbursement System (IPADS) in Naval Pay Office Mumbai
4.	CA 5 of 2008	II	2.8	MOD	Delay in procurement, installation and commissioning of a training simulator
5.	CA 5 of 2008	III	3.2	Air Force	Procurement of sub standard components for a helicopter
6.	CA 5 of 2008	III	3.3	Air Force	Irregular sanction and execution of works services
7.	CA 5 of 2008	III	3.6	Air Force	Non-recovery of interest due on ad-hoc advance
8.	CA 5 of 2008	III	3.9	Air Force	Unauthorised erection of antenna on a defence building.

ANNEXURE -II

(Refers to Para No. 2.9)

(Loss on account of acceptance in LsOA of less than actual operation rate per hour per helicopter)

Name of the Mission	Year/ month of deploy-ment	No. of months since initial deploy-ment	No of hours flown by the contingent during the period Attack/ utility*	Rate per flying hour as per LOA in USD	Actual rate per flying hour in USD	Diff. In rate per hour in USD	Amt. Lost due to less than actual operation rate per hour in USD (col-4x7)
1	2	3	4	5	6	7	8
IAC-I MONUCDRC	July 03 Beginn-ing from 13 July 2003	8.5 months (upto March 04)	1369.39/ 507.65	2950 2100	6132 2496	3182 396	4357399 201029
		12 months (From April 04 to March 05)	1226.00/ 1299.50	-do-	6745 2745	3795 645	4652670 838177
		12 months (From April 05 to March 06)	905.27/ 1312.25		7420 3020	4470 920	4046557 1207270
		12 months (From April 06 to March 07)	921.60/ 839.86		8162 3322	5212 1222	4803379 1026309
		12 months (From April 07 to March 08)	818.4/ 1032.28		8978 3654	6028 1554	4933315 1604163
IAC UNMIS SUDAN	Novt. 05	05 months (From Oct. 05 to March 06)	464.33	2300	3020	720	334318
		12 months (From April 06 to March 07)	2000.11		3322	1022	2044112
		12 months (From April 07 to March 08)	2244.86		3654	1354	3039540
IAC-II	Jan 2005	03 Months	117.98/	3900	6745	2845	335653

MONUC		(upto March 05)	137.48	2100	2745	645	88675
		12 Months (From April 05 to March 06)	1029.58/ 1033.05	-do-	7420 3020	3520 920	3624122 950406
		12 Months (From April 06 to March 07)	1153.17/ 1459.94	-do-	8162 3322	4262 1222	4914810 1784047
		11 Months (From April 07 to Feb 08)	938.20/ 1061.00	-do-	8978 3654	5078 1554	4764180 1648794
					Total		USD 51198925 = Rs 205 crore (@ 1 USD = Rs 40)

*Figures based on information furnished vide PCDA letter No.49026/UN Cell/UNMIS Air Force/Gen dated 10.7.08 and reports generated by Air HQ.

ANNEXURE -III

(Refers to Para No. 2.9)

Less reimbursement of troop cost

IAC (I)	.03* X 58□ = 1.74 MUSD
IAC (II)	.03 X 40 = 1.2 MUSD
Grand Total	= 2.94 MUSD = 2940000 USD = 11.76 cr. @ Rs.40/USD
*	*.03 is the difference between the Average troop cost as per MOU per month and OSA paid per month.*
□	*58 & 40 are the number of months from induction of troops of IAC I (July 2003) and IAC (January 2005) respectively till April 2008*

ANNEXURE -IV

(Refers to Para No. 2.9)

Less reimbursement on account of Contingent Owned/Self Sustenance Equipment

Sl. No.	Name of the mission	Year/month of initial deployment	Amount in MUSD Period of expected reimbursement in USD	Period of actual reimbursement and amount in USD	Amount of less reimbursement in USD	Amount of less reimbursement in Rs. @ 1USD = Rs. 40 (Rs. in crore)
1	2	3	4	5	6	7
1.	IAC-II	January 2005	9006386 (Jan 2005 to March 2008)	3966723.98 (January 2005 to December 2007)	5039662.02	20.15
2.	IAC UN Mission (SUDAN)	October 2005	4283640.15 (Till March 2008 since induction)	2570052.92 (July 2006 to December 2007)	1713587.23	6.85
3.	ASU MONUC (Non-flying contingent	September 2004	3202678.22 (Till March 2008 since induction)	2923174.13 (October 2004 to December 2007)	279504.09	1.18
					7032753.34 USD or 7.03 MUSD	28.18 crore

ANNEXURE -V

(Refers to Para No. 4.8)

Avoidable payment on account of VAT

S.N.	NAME OF UNIT	NUMBER OF SUPPLY ORDERS	AMOUNT OF EXCESS TAX PAID (IN RS LAKHS)
1.	Naval Dockyard, Mumbai	53	5.87
2.	Material Organisation, Mumbai	238	307.90
3.	Weapon Equipment Depot, Mumbai	84	2.28
4.	Naval Metallurgical Research Laboratory, Ambernath, Mumbai	42	13.29
5.	Coast Guard Organisation, Mumbai	05	7.08
6.	Naval Transport Pool, Mumbai	204	2.02
	TOTAL	**626**	**338.44**