



**REPORT OF THE  
COMPTROLLER AND AUDITOR GENERAL  
OF INDIA**

**FOR THE YEAR ENDED 31 MARCH 1996  
NO.8 OF 1997**

Presented in Lok Sabha on  
20 MAR 1997  
Laid in Rajya Sabha on  
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**UNION GOVERNMENT - DEFENCE SERVICES  
(AIR FORCE AND NAVY)**

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## LEGENDS/ABBREVIATIONS

Aeronautical Development Establishment	referred as	ADE
Aircraft Support Vehicle	- do -	ASV
Action Taken Note	- do -	ATN
Bharat Electronics Limited	- do -	BEL
Bharat Earth Movers Limited	- do -	BEML
Bombay Electric Supply and Transport Undertaking	- do -	BEST
Board of Officers	- do -	Board
Base Repair Depot	- do -	BRD
Comptroller & Auditor General	- do -	C&AG
Cabinet Committee on Political Affairs	- do -	CCPA
Controller of Defence Accounts	- do -	CDA
Carriage, Insurance and Freight	- do -	CIF
Court of Inquiry	- do -	COI
Controller of Procurement	- do -	CPRO
Director General of Civil Aviation	- do -	DGCA
Director General Naval Project	- do -	DGNP
Director General of Supplies and Disposals	- do -	DGSD
Director of Quality Assurance	- do -	DQA
Defence Research and Development Organisation	- do -	DRDO
Embarkation Headquarters	- do -	EHQ
Equipment Depot	-do-	ED

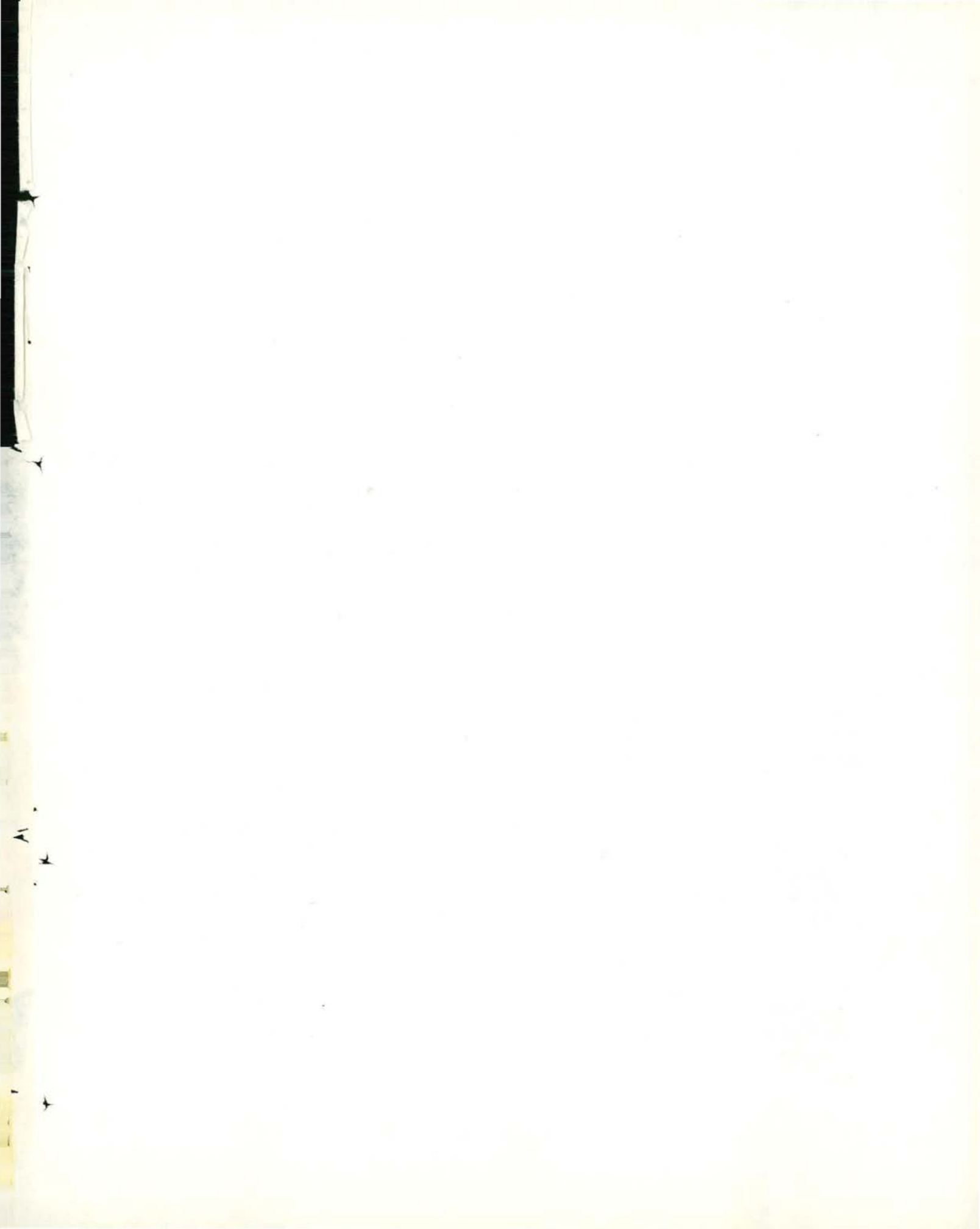
Foreign Exchange	referred as	FE
Free on Board	- do -	FOB
Flag Officer Commanding-in-Chief	- do -	FOC-in-C
Hindustan Aeronautics Limited	- do -	HAL
Headquarters	- do -	HQ
Indian Airlines	- do -	IA
Indian Air Force	- do -	IAF
Income Tax Officer	- do -	ITO
Kilogram	- do -	Kg
Ministry of Defence	- do -	The Ministry
Military Engineer Services	- do -	MES
National Cadet Corps	- do -	NCC
Public Accounts Committee	- do -	PAC
Public Sector Undertaking	- do -	PSU
Radar and Communication Project Office	- do -	RCPO

## PREFATORY REMARKS

This Report for the year ended 31 March 1996 has been prepared for submission to the President under Article 151 of the Constitution. It relates mainly to matters arising from test audit of the financial transactions of Ministry of Defence, Air Force, Navy, Coast Guard and associated Defence Research and Development Organisation.

2 The Report includes 28 paragraphs and three reviews on (i) Design and development of pilotless target aircraft (ii) Specialist vehicles held by IAF (iii) Submarine fleet. The Draft Paragraphs and Draft Reviews were forwarded to Ministry of Defence for furnishing their reply within six weeks. However, replies to 12 Draft Paragraphs and two Draft Reviews have not been received as of December 1996.

3 The cases mentioned in the Report are among those which came to notice in the course of audit conducted during the year 1995-96 and early part of 1996-97. It also includes cases noticed during earlier years but could not be included in the previous Reports.



## OVERVIEW

The total expenditure of Air Force and Navy during 1995-96 was Rs 7,080 crore and Rs 3,847 crore respectively, which together represents 39.09 *per cent* of the total expenditure of the Defence Services. Some of the major findings of audit of accounts of Air Force, Navy, Coast Guard and associated Research and Development Organisations included in the Report are mentioned below:

### **I Design and development of pilotless target aircraft**

The development of pilotless target aircraft sanctioned in September 1980 by Aeronautical Development Establishment was delayed by more than eight years. The project was closed in June 1994 at a cost of Rs 26.21 crore against the originally approved estimate of Rs 17 crore. Yet, it did not meet the Inter-Services Qualitative Requirements in full. The delay in development not only compelled the Services to import pilotless target aircraft valuing Rs 23.42 crore in foreign exchange but necessitated continued dependence on conventional methods of training. Likewise, pilotless target aircraft engine, scheduled to be developed by September 1985 by Hindustan Aeronautics Limited has not been successfully developed as of September 1996 despite an expenditure of Rs 9.22 crore. As a result, 14 engines had to be imported at a cost of Rs 6.57 crore for powering pilotless target aircraft fabricated by Aeronautical Development Establishment under limited series production.

Although Air Force and Navy had certain reservations about the performance of the pilotless target aircraft prototypes produced, the Ministry approved production of 10 pilotless target aircraft by Aeronautical Development Establishment and paid Rs 18.76 crore as advance. However, the production of the limited series is behind schedule and no pilotless target aircraft has yet been produced.

**(Paragraph 30)**

### **II Unfruitful expenditure on procurement of radars**

The failure of Indian Air Force/designated inspection authority to evaluate accurately the performance of the improved radar before placing order for their supply on Hindustan Aeronautics Limited resulted in unfruitful expenditure of Rs 12.97 crore as the radars proved unreliable due to inherent defects. While the installation of three radars took four to six years due to defects, three were slated for installation by October 1996 after a delay of upto five years. One radar procured at Rs 1.87 crore in 1990 was yet to be installed as of April 1996. Consequently, Indian Air Force had to depend on old technology radars declared obsolete way back in 1991.

**(Paragraph 6)**

### **III Submarine fleet**

Operational state of submarines in the Navy was found to be far from satisfactory. Repair facilities for a class of submarines inducted during the eighties were yet to be fully created. The class of submarines inducted in the eighties had serious operational limitations, necessitating their upgradation, which is likely to cost about five times their acquisition cost. Communication facilities created in 1989 at a cost of Rs 122.16 crore remained grossly underutilised in the absence of appropriate antenna system in the submarines. Fleet exercises were carried out with depleted strength. Hull construction facilities created at Mazgon Dock Limited at a cost of Rs 16.67 crore remained unutilised from 1986-87 for lack of orders.

(Paragraph 16)

### **IV Avoidable expenditure on construction of excess accommodation**

Negligent planning and assessment of requirement of quarters for Petty Officers of the Navy at a station by Naval authorities/ the Ministry led to construction of 236 quarters in excess of the authorisation entailing an avoidable expenditure of Rs 11.36 crore.

(Paragraph 17)

### **V Procurement of missiles**

Despite specific provisions in the contract, Indian Air Force failed to get the defective missiles replaced by the foreign supplier under the warranty clause. Twelve of the 23 missiles found defective, were rectified by the specialists of the foreign firm after a delay of two and a half to four years. Eleven missiles costing Rs 1.38 crore were lying unserviceable. In the meantime, 25 to 50 *per cent* of shelf life of missiles had expired

(Paragraph 7)

### **VI Leasing of aircraft**

Until December 1993, the Coast Guard used two F-27 aircraft obtained on dry lease at about Rs One crore *per annum*, when certificate of their airworthiness was withdrawn. Since modifications to make at least one of them airworthy could not be carried out by Indian Airlines as of August 1996, the proposal for its outright purchase had to be dropped.

Only limited coastal surveillance could be carried out by the Coast Guard with help of a Dornier aircraft. The air squadron of the Coast Guard, therefore, suffered operational limitations after December 1993 in the absence of aircraft.

(Paragraph 28)

## **VII Delay in setting up of engine test facilities**

The facilities for testing of repaired engines, scheduled to be completed by March 1989 had not been commissioned as of January 1996 due to failure of Naval authorities to provide the engine of requisite capacity for testing of the equipment. Resultantly, the engine repair facilities could not be fully exploited even after an investment of Rs 11.02 crore and repaired engines were being used without testing.

**(Paragraph 26)**

## **VIII Delay in setting up of repair facilities**

Delay of over six years in according Government sanction for setting up of repair/overhaul facilities for an aircraft resulted in mismatch between induction of the aircraft and its repair/overhaul facilities. Consequently, the Navy had to incur an expenditure of Rs 81.40 crore in foreign exchange on repair of aircraft components abroad during 1987-96. The outflow of foreign exchange would continue until the facilities are set up. Further, by the time the facilities are set up, a major portion of technical life of the aircraft would be over. More importantly, the operational exploitation of Naval aircraft fleet was adversely affected due to increased turn round time of components after their repair/overhaul abroad.

**(Paragraph 2)**

## **IX Procurement of Article-TEM-3 without cables**

Failure of Naval Headquarters to ensure that complete description of the items contracted for were correctly indicated in the contract in the language of the foreign suppliers' country led to import of an item valuing Rs 5.08 crore without the requisite cables. The items had remained in stock since receipt in July 1994 without the prospect of their utilisation in the absence of the cables.

**(Paragraph 23)**

## **X Unnecessary procurement of radar tubes**

Despite stock of 23 tubes, Indian Air Force procured three more costing Rs 95.31 lakh in March 1994 without taking into account their consumption pattern. 24 tubes including the three procured in March 1994 were lying in stock. The procurement of three tubes in 1994 was, thus, unnecessary.

**(Paragraph 10)**

## **XI Delay in provision of radars**

The delay of five years in approving procurement of reference radars from Bharat Electronics Limited required to be used as reference during maintenance and calibration and further delay in their supply resulted not only in cost overrun of Rs 1.50 crore but also frustrated the very purpose of their procurement. By the time reference radars are likely to be installed/ commissioned, the electronic life of the ship-borne radars for whose calibration the reference radars were to be used would have expired. In the meantime, Bharat Electronics Limited had already been paid Rs 3.80 crore by May 1993 as stage payments and advance.

**(Paragraph 18)**

## **XII Delay in commissioning of an imported equipment**

The Programme authorities failed to anticipate the complexity of a Naval development programme and resolve them for over six years. This resulted in non-commissioning of an equipment costing Rs 1.98 crore imported in 1990. Besides delay in development, it has also rendered the extended warranty, obtained at a cost of Rs 5.42 lakh, infructuous.

**(Paragraph 31)**

## **XIII Avoidable payment of surcharge due to low power factor**

Delay in provision of the capacitor bank and failure in maintaining the requisite power factor at Naval Dockyard, Mumbai resulted in avoidable payment of Rs 1.64 crore towards surcharge to Bombay Electric Supply and Transport Undertaking during June 1992 - November 1995, besides entailing an annual recurring liability of Rs 46.82 lakh till such time as the capacitor bank is provided and the prescribed power factor is achieved.

**(Paragraph 25)**

## **XIV Procurement of unsuitable machines**

Indian Air Force incurred an expenditure of Rs 77.23 lakh on procurement of twenty three electrostatic liquid cleaner indigenous machines and four imported machines during January 1990 to June 1993 for recycling the oil used in the hydraulic system of aircraft. These machines were eventually found unsuitable for super cleaning of the hydraulic fluid used in the aircraft. The entire expenditure on procurement of electrostatic liquid cleaner machines was, therefore, infructuous.

**(Paragraph 11)**



## **XV Procurement of sub-standard boiler tubes**

Non indication of specifications of boiler tube material in the indent/order by Naval Headquarters as well as failure of the inspecting agency to detect the fault in their manufacture led to wasteful expenditure of Rs 79.36 lakh in procurement of sub-standard tubes.

**(Paragraph 19)**

## **XVI Specialist vehicles held by IAF**

Indian Air Force operates specialist vehicles to sustain the operational efficiency of its aircraft fleet and associated equipment. A review of holding, serviceability state, utilisation, repair and overhaul of these vehicles during 1993-94 to 1995-96 disclosed that there were serious shortages in availability of different vehicles against their authorised strength, for which the Indian Air Force had to draw upon the reserves. 19 Air cooling trollies (cost Rs 2.47 crore) and 4 cranes (cost Rs 1.56 crore) were held in unserviceable condition over the years. 35 radio vehicles costing Rs 13.50 crore procured during November 1995 to April 1996 were yet to be put to effective use due to defects and slow pace of their repair. Further, a control system valuing Rs 1.76 crore imported in July 1990 has not been put to use so far. There was significant shortfall in completing repair jobs by Base Repair Depots depriving the users of availability of specialist vehicles. 57 chassis costing Rs 4.91 crore were awaiting fabrication for over three to five years. A number of vehicles remained in the Base Repair Depots even after repairs for prolonged durations in the absence of allotment and collection by the users.

**(Paragraph 5)**

## **XVII Damage to rotor blades of a helicopter**

Delay of 17 months in raising the discrepancy report by Embarkation Headquarters, Mumbai and the Equipment Depot resulted in rejection of the claim by the supplier. Consequently, the helicopter rotor blades valuing Rs 1.19 crore were lying in damaged condition since their import in March 1994.

**(Paragraph 12)**



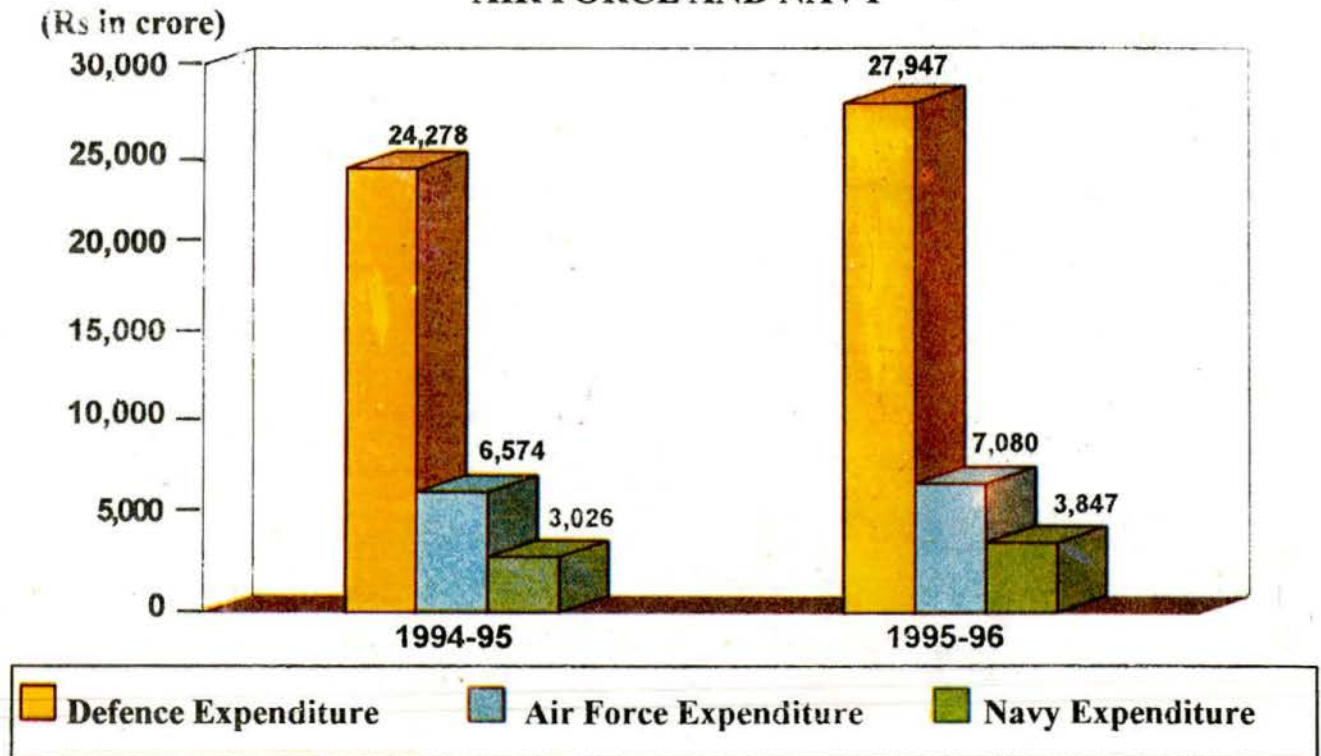
## CHAPTER I

### FINANCIAL ASPECTS

#### 1 Financial Aspects

1.1 The total revenue and capital expenditure on Defence Services during 1995-96 was Rs 27,947 crore, which was higher by 15.11 *per cent* over the expenditure during 1994-95. The share of the Air Force and Navy in the total expenditure on Defence Services in 1995-96 was Rs 7,080 crore and Rs 3,847 crore respectively. The expenditure on Air Force and Navy registered an increase of 7.70 *per cent* and 27.13 *per cent* over the expenditure during the preceding year as indicated below :

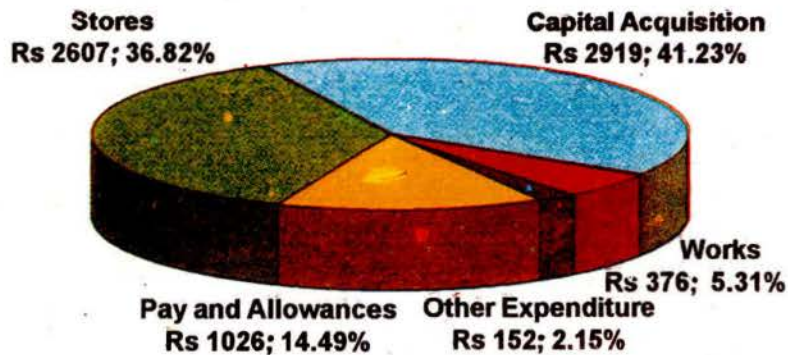
#### SHARE OF EXPENDITURE AIR FORCE AND NAVY



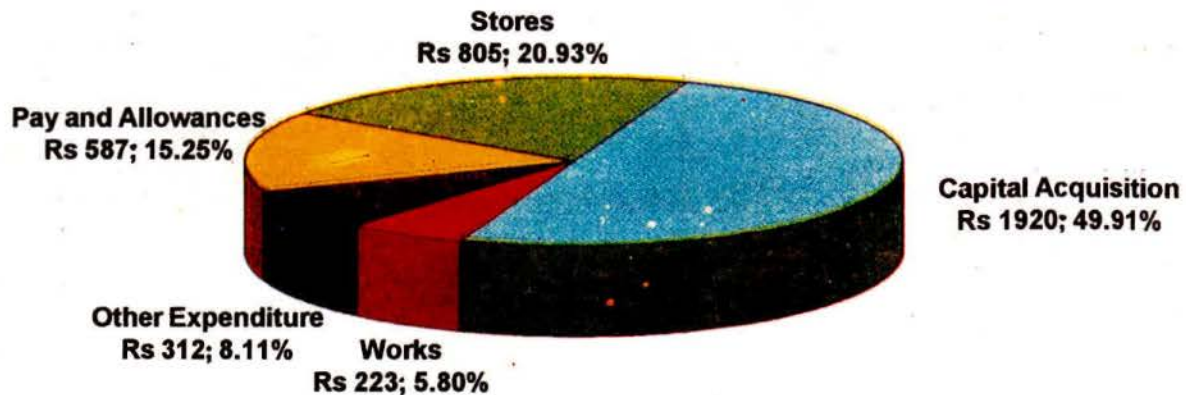
1.2 The distribution among the major areas of expenditure like capital acquisition, stores, pay and allowances and works during 1995-96 in Air Force and Navy is shown in

the pie charts below:

**PROPORTION OF EXPENDITURE  
AIR FORCE  
(Rupees in crore)**



**PROPORTION OF EXPENDITURE  
NAVY  
(Rupees in crore)**



1.3 IAF operates an efficient and well planned air defence network comprising a sophisticated range of front line aircraft, missiles and radar systems. IAF had taken up on

top priority selective upgradation/modernisation of various combat aircraft to integrate the state of the art weapons and avionics to the existing aircraft as well as to indigenise various equipment in association with DRDO. Certain MiG trainers have been acquired to meet dedicated training requirement of pilots until an Advanced Jet Trainer is inducted.

**1.4** In order to keep pace with its increasing responsibility of defending Indian maritime interests, Indian Navy, too, continued strengthening its force structure. A number of indigenously designed ships including frigates, corvettes, survey ships and missile boats incorporating the latest technology, weaponry and communication system were under construction in the various shipyards. During the year, two indigenously built missile boats and a missile corvette were added to its fleet in addition to a training ship and a fleet tanker.

**1.5** The DRDO executed important projects relating to design and development of weapons, equipment, electronics, instrumentation, aeronautics, engineering systems, naval systems, advance computing for meeting the requirement of Air Force and Navy.

**1.6** Test check of various transactions and review of certain projects/activities relating to Air Force, Navy and Coast Guard revealed instances of injudicious planning, delay in decision making, weaknesses in project implementation, flaws in import of costly equipment of operational importance and their non-utilisation, cost and time overruns in creation of facilities and avoidable procurement resulting in idle investment etc.

**1.7** An amount of Rs 1.50 crore was recovered at the instance of Audit during the year.



## CHAPTER II

### MINISTRY OF DEFENCE

#### 2 Delay in setting up of repair facilities

**Navy incurred an expenditure of Rs 81.40 crore in FE during 1987-96 on repair of aircraft components abroad due to delay in setting up of its repair/overhaul facilities. The setting up of all major repair facilities is expected to take another five years.**

Mention was made in paragraph 39 of Report No.9 of 1992 of the C&AG of India, Union Government (Defence Services - Air Force and Navy) for the year ended 31 March 1991 about delay in setting up of third and fourth line repair/overhaul facilities for an aircraft inducted in three batches during 1982-83, 1989-90 and 1990-91 and consequential expenditure of Rs 7.32 crore on repair of aircraft/aero-engine components abroad. In reply, the Ministry had stated, in December 1991, that the project report received in early 1987 had indicated that creation of repair/overhaul facilities in India for 75 per cent aircraft components and 95 per cent engine components only would be economically viable. Accordingly, a proposal for setting up of repair/overhaul facilities was then processed, in April 1987, for Government approval and the facilities were expected to be set up within five years after receipt of Government sanction.

Further review of the project in audit revealed that after a delay of over six years, the Ministry initiated the proposal in February 1994 for setting up of repair/overhaul facilities of the aircraft, its engine and components for approval of CCPA. The proposal envisaged that setting up of such facilities in India would reduce dependence on foreign manufacturers and the turn round time for aircraft components, thereby increasing operational availability of aircraft, besides saving FE. On receipt of approval of CCPA in April 1994, the Ministry accorded sanction during the same month for creation of the facilities at an estimated cost of Rs 310 crore (FE Rs 247.09 crore) for completion by 2001.

As per the above mentioned projection, the first batch of aircraft would have completed 18 years of their life, while those of the second and third batches would have completed above 10 years by the time the proposed facilities are created. Upto March 1996, more than 50 per cent of engines of the aircraft had fallen due for repair/overhaul and an expenditure of Rs 81.40 crore in FE had already been incurred on repair of aircraft components abroad during the period 1987-96. The anticipated expenditure for 1996-97

was Rs 35 crore in FE. The large outflow of FE would evidently continue till such time the facilities are completed.

The Ministry stated, in October 1996, that setting up of four different types of facilities had been contracted and the proposal for the remaining six facilities were at various stages of processing. It added that the progress of establishing facilities at HAL was not fully satisfactory. It further added that efforts were being made to progressively commission the facilities commencing from December 1996 to be completed by 1999 and in order to cut down delays, major projects were being reviewed in the Ministry to expedite clearance.

Thus, an expenditure of Rs 81.40 crore in FE had to be incurred upto 1995-96 on account of mismatch between induction of aircraft and setting up of its repair/overhaul facilities, besides increasing the component turn round time, thereby, adversely affecting the operational exploitation of the Naval aircraft fleet. Moreover, by the time the proposed facilities are created, major part of the technical life of the aircraft would be over.

### **3 Extra expenditure due to delay in conclusion of contract**

**Delay in conclusion of the contract led to extra expenditure of Rs 20 lakh.**

Based on the requirement projected by Air HQ, the Ministry approved in January 1995 procurement of 320 items of spares for repair/overhaul of aero-engines of an aircraft at an estimated cost of Rs 7.07 crore. A foreign firm from whom the enquiries were made, had offered in February 1995 only 302 items at a cost of Rs 4.58 crore. The items were to be delivered during 1995 provided the contract was signed immediately. Air HQ found the offer reasonable as the items were of proprietary nature and recommended to the Ministry in March 1995 to conclude the contract at the earliest as any delay in concluding the contract was likely to adversely affect the overhaul programme of the aero-engines. During the same month, the Ministry approved the conclusion of contract with the foreign firm for procurement of 302 items at a cost of Rs 4.58 crore.

The firm was requested to send its representatives to India for negotiation and signing the contract. The representatives of the firm visited India for two weeks in June 1995 and slightly revised the offer to supply 301 items as against 302 offered earlier without any reduction in prices. The Ministry failed to conclude the contract with the representatives during their stay in India and instead mixed the issue with some other offers.

In July 1995, the firm informed Air HQ that the items would be supplied only in 1996 at five *per cent* increase over the quoted price of February 1995. Immediately,



thereafter, an Indian delegation visited the manufacturers and signed the contract for procurement of 301 items of spares at the escalated cost of Rs 4.82 crore, subsequently revised to Rs 4.78 crore in November 1995.

Thus, failure of the Ministry to conclude the contract with the representatives of the firm who had visited India specially for the purpose, resulted in extra expenditure of Rs 20 lakh besides delay in availability of spares. The Ministry accepted the facts in August 1996 but indicated that in respect of other issues negotiated with representatives of the foreign firm in June 1995, substantial bargain could be achieved.

#### **4 Follow up on Audit Reports**

**Despite the recommendations of Public Accounts Committee, the Ministry failed to furnish remedial/corrective action taken notes on Audit paragraphs within the stipulated time.**

Lok Sabha Secretariat issued instructions in April 1982 to all the Ministries requesting them to furnish ATNs indicating remedial/corrective action taken by them to Ministry of Finance (Department of Expenditure) on various paragraphs, contained in the Audit Reports, as soon as they were laid on the Table of the House, duly vetted by Audit.

The PAC reviewed the position of submission of ATNs during 1995-96 and observed inordinate delays and persisting failure on the part of large number of Ministries in reporting ATNs on audit paragraphs. The Committee, in their One Hundred Fifth Report of 1995-96 (10th Lok Sabha) viewed it seriously and directed all Ministries to furnish ATNs in the prescribed format in respect of all outstanding audit paragraphs included in the Reports of C&AG of India upto the year ended 31 March 1993 within three months from the date of presentation of their Report irrespective of their selection by the Committee for detailed examination. The Committee further recommended that ATNs in future should be submitted within three months from the date of communication of selection of subjects.

In pursuance of the recommendations of the Committee, Ministry of Finance (Department of Expenditure) issued instructions in September 1995 and March 1996 to all Ministries to tone up their existing system and evolve effective machinery with a view to timely submission of ATNs to the Committee.

Review of ATNs outstanding for more than three months on paragraphs included in the Reports of the C&AG of India, Union Government, Defence Services (Air Force

and Navy) disclosed that the Ministry did not submit ATNs on 21 paragraphs as of December 1996 despite the instructions of the Committee.

<b>Audit Report No. and year</b>	<b>No. of Paragraphs on which ATNs were awaited</b>	<b>ATNs not received at all</b>	<b>Final ATNs awaited</b>
9 of 1993	4	1	3
9 of 1994	4	1	3
9 of 1995	13	6	7

The details of these outstanding ATNs are given in Annexure-I.

Further, though the selection of the paragraphs from Report No.9 of 1996 for detailed examination by the Committee was communicated on 01 October 1996 and ATNs were to be furnished by December 1996, the Ministry has not furnished ATNs in respect of 28 paragraphs as per Annexure-II (December 1996).

The matter was referred to the Ministry in October 1996; their reply was awaited as of December 1996.

## CHAPTER III

### AIR FORCE

#### Review

#### 5 Specialist vehicles held by IAF

##### 5.1 Introduction

IAF uses certain specialist vehicles to carry out specific tasks for supporting aircraft fleet and equipment. These include refuellers, mechanical runway sweepers, crash fire tenders (CFTs), cranes, tractors and ASVs comprising of aircraft starting aggregates (ASAs), ground power units, air chargers, air compressors, mobile communication vehicles and radar vehicles. There had been overall deficiency of specialist vehicles which depleted the reserve holdings. Besides, there were serious shortfalls in carrying out repair/overhaul for which considerable number of specialist vehicles were lying in an unserviceable state for prolonged periods causing further deficiency in their availability.

##### 5.2 Scope of Audit

The review conducted by Audit between March and July 1996, covers the holdings *vis-a-vis* authorisation of specialist vehicles, their serviceability state, utilisation, repair and overhaul of other than common users vehicles during 1993-94 to 1995-96.

##### 5.3 Highlights

- Deficiencies of specialist vehicles ranged between 18 and 53 per cent. This contributed to serious depletion of reserve holdings.
- Despite availability of product support, 19 air cooling trolleys (constituting 28 per cent of the total holding) costing Rs 2.47 crore procured between 1989-93 were lying in unserviceable condition.
- 35 radio vehicles costing Rs 13.50 crore procured from BEL in April 1996 could not be effectively utilised because of serious defects in their airconditioning system, slow progress by BEL in attending to warranty repairs and non-procurement of sand tyres for their use in desert areas. IAF was compelled to use the radio vehicles declared obsolete in 1991.

- 57 chassis costing Rs 4.91 crore were held in an ED for over three to five years awaiting fabrication of the mounted equipment thereon.
- There was significant shortfall in the achievement of the assigned overhaul tasks at BRDs which ranged between 15 and 50 per cent. This affected availability of serviceable vehicles to the users.
- Six radio vehicles which had been overhauled more than two years back at a BRD had not been collected by user units and four had not been allotted after repair. In the meantime, the vehicles had been declared obsolete. In another BRD, ten ASVs were awaiting collection in the absence of issue of readiness clearance even after one to two years of their repair.
- Serious shortfalls in the overhaul of vehicle 'X' had affected the operational training exercises of the operating units.
- An imported integrated complex control system costing Rs 1.76 crore was lying in an Air Force depot for over five years without any utilisation.
- Four cranes procured at Rs 1.56 crore were held as unserviceable for over four years, despite availability of product support from the manufacturers.

#### 5.4 Authorisation *vis-a-vis* actual holdings

As of December 1995, Air Force held 2358 specialist vehicles. During the last three years there had been deficiencies ranging from 18 to 53 *per cent* in respect of holdings (including reserves) *vis-a-vis* authorisation of domestic CFTs, aircraft refuellers, mechanical runway sweepers, cranes, tractors, trailers, airfield crash trailers and signal tenders. As of March 1996, the deficiencies in respect of DC cranes were as high as 87 *per cent*. Air HQ stated, in June 1996, that procurement of vehicles had to be restricted due to budgetary constraints and in a number of cases vehicles were allotted to the newly raised units out of vehicle reserves. This had not only depleted the reserve holdings of the specialist vehicles but also outdated vehicles were being used.

## 5.5 Serviceability of specialist vehicles

As per the existing norms, IAF was expected to maintain 90 *per cent* of the specialist vehicles serviceable which was by and large met during last three years excepting marginal shortfall in respect of a few imported ASVs like ASAs, hydraulic servicing vehicles and electrical hydraulic trailers where the serviceability percentage was low and ranged between 76 and 82 *per cent*.

As of December 1995, 168 of the 771 imported ASVs were held in repairable condition. This was attributed to non-availability of engines and associated components. Similarly as indicated in the succeeding paragraph, repairable holding in respect of some of the indigenous ASVs was also quite high.

### 5.5.1 Air Cooling Trolleys

Air cooling trolley is used for airconditioning of electronic equipment during ground test of certain aircraft. These cooling trolleys manufactured by a private firm were procured through HAL and supplied to the field units in 1989-1993. It was noticed that of the 68 indigenous cooling trolleys held by the field units, 19 (28 *per cent*) costing Rs 2.47 crore were unserviceable as of March 1996 for periods indicated below:

Less than one year	=	7
Between 1-2 years	=	9
Between 2-3 years	=	3

It was further noticed that, at an Air Force station, four of the trolleys which became unserviceable from July 1994 onwards were surveyed jointly by the Air Force and manufacturers in February 1996. The manufacturers offered to supply spares worth Rs 1.35 lakh to make three of them serviceable but no order had been placed as of July 1996. Instead, it was proposed to service these trolleys by resorting to local purchase of spares and/or by obtaining spares from Air Force depot. The trolleys were awaiting repairs as of July 1996.

Since the product support from the manufacturers was not lacking and these trolleys were not due for overhaul, action to repair the trolleys should have been taken earlier.

### 5.5.2 Aircraft starting aggregates

Air HQ procured 18 ASAs at a total cost of Rs 1.45 crore from HAL during 1992-94. An Air Force Command reported in October 1995 that the ASAs were giving only three starts against the norm of six starts. This led to frequent charging cycles and

consequent deterioration of the batteries and generator resulting in unserviceability of complete battery sets in two ASAs.

The shelf life of the batteries was only five years. It was seen that ASAs supplied in 1993 were fitted with batteries manufactured in 1990-91 i.e. after the expiry of more than 50 *per cent* of their shelf life.

As of March 1996, three ASAs costing Rs 24.15 lakh were unserviceable for the last one year due to inability of batteries to hold charge. Though these batteries were under warranty for a period of three years, Air HQ proposed in May 1996 procurement of new batteries instead of seeking free replacement from the HAL.

## **5.6 Overhaul of vehicles**

The efficiency of an aircraft fleet is directly linked to the availability of specialist vehicles in serviceable state. In order to keep the specialist vehicles serviceable, the repair/overhaul of these vehicles is undertaken by various Air Force BRDs as per annual repair programme approved by the Ministry/Air HQ from time to time.

The repair/overhaul of imported ASVs like aircraft starting aggregates, hydraulic servicing vehicles and electrical hydraulic trailers is undertaken by BRD-1. During 1993-94 and 1994-95 the BRD could not achieve the approved tasks for repair of these ASVs and the shortfall was 26 and 50 *per cent* respectively. The annual overhaul task for the year 1995-96 was, therefore, reduced by the Ministry/Air HQ from 44 ASVs to 33 ASVs. Despite the reduction, there was a shortfall of 15 *per cent* resulting in accumulation of 43 repairable ASVs at the BRD equivalent to more than one year's repair task as of March 1996.

The BRD stated that inadequacy of locally produced spares, lower availability of overhauled engines and non-availability of overhauled generators contributed to the shortfall in the repair task of these ASVs. Another factor leading to the shortfall in the assigned repair task was non-availability of serviceable hydraulic pumps for hydraulic servicing vehicles. It was noticed that 47 hydraulic pumps costing Rs 2.93 crore were received in the BRD between March 1992 and March 1996 for repairs. Though six of the hydraulic pumps had been received as early as in 1992-93, the repair job was taken up only in November 1994. The trial repairs had not yet been successful as of April 1996, adversely affecting the overhaul of the ASVs.

The overhaul of general specialist vehicles like refuellers, CFTs, mechanical runway sweepers, tractors as also of imported specialist vehicles used by certain Air Force units is undertaken by BRD-3. There were shortfalls of 28 and 19 *per cent* in the repair/overhaul task of these vehicles during 1993-94 and 1994-95 respectively. The repair task was reduced from 80 to 50 vehicles during 1995-96 due to non-positioning of

repairable vehicles by the field units for want of wagons from the Railways and non-availability of spares.

### 5.7 Non-issue of overhauled vehicles

As of March 1996, ten ASVs repaired/overhauled by the BRD-1 between 1993-96 (3 in 1993-94, 4 in 1994-95 and 3 in 1995-96) had not been collected by the user units in the absence of readiness clearance from the BRD. As the operating units faced acute shortage of these ASVs, Air HQ instructed the BRD in January 1996 to expedite issue of readiness clearance for collection. However, the same was awaited as of March 1996.

Similarly, out of the ten radio vehicles overhauled by the BRD-2 during August 1992 and May 1996, four had not been allotted to user units by Air HQ while six had been allotted but not collected by the user units as of July 1996. These six vehicles had been lying in the BRD for more than two years and in the meantime these were declared obsolete in January 1995. Besides, seven other specialist vehicles repaired during October 1993 and October 1994 were also lying in the BRD as of July 1996. Thus, in addition to the non-utilisation of repaired vehicles, the BRD was burdened with their maintenance and storage. There is apparently a need to streamline the procedure for issue of repaired vehicles to the user units for their optimum utilisation.

### 5.8 Overhaul of specialist vehicle 'X'

The overhaul of vehicle 'X' was assigned to an Army Base Workshop by the Ministry in December 1992, which was subsequently transferred to another workshop from 1995-96.

Scrutiny of the task achieved *vis-a-vis* that assigned during 1992-93 and 1995-96 revealed significant shortfall which ranged between 62 and 80 *per cent* except in 1993-94 when the shortfall was hundred *per cent* as can be seen from the table below:

Year	Task allotted (No. of vehicles)	Task achieved (No. of vehicles)	Shortfall (percentage)
1992-93	25	5	80
1993-94	25	Nil	100
1994-95	35	10	71
1995-96	32 *	12	62

\*upto February 1996

The shortfall in achievement of tasks had adversely affected the availability of these vehicles. In April 1994, one of the Air Force Commands stated that out of 82 vehicles 'X' held by them, 37 were not available for operational use affecting the operational training exercises of the units.

### **5.9 Sub-optimal use of radio vehicles**

In order to replace obsolete radio vehicles, 65 one ton chassis were procured by IAF from trade against supply order of November 1994 at a cost of Rs 2.63 crore for fabrication of radio/communication vehicles by BEL at a cost of Rs 22.44 crore.

User trials on these communication vehicles were completed in June 1995 and BEL delivered 35 vehicles after necessary modifications by April 1996. The user units, however, reported defects in the airconditioning system of the vehicles which affected the operation of these vehicles seriously. Besides, the communication equipment of some of the vehicles was also not functional.

Though the defects of the airconditioning system were being attended to by BEL under warranty repairs, the progress was tardy and only one of 35 vehicles has been repaired so far. Further, the deployment of these vehicles in a desert area required sand tyres which were not procured. This led to restricted mobility of these vehicles in desert areas.

Thus, 35 radio vehicles costing Rs 13.50 crore received between November 1995 and April 1996 could not be effectively utilised as of May 1996. As a result, aging radio vehicles which had been declared obsolete in 1991 continued to be used by AF units.

### **5.10 Fabrication of vehicles**

IAF procures chassis from trade for fabrication of specialist vehicles like indigenous fire tenders, mechanical runway sweepers, aircraft refuellers etc. As of March 1996, an Air Force ED held 187 chassis of different types. Of these, 42 chassis 'A' and 15 chassis 'B' valuing Rs 4.91 crore were held in stock for over five and three years respectively.

The ED stated, in April 1996, that it was not aware of the time schedule within which these chassis are likely to be fabricated. It also stated that though proper maintenance and storage practices were being followed within the existing constraints, acute shortage of storage accommodation and technical manpower was likely to affect the chassis due to their prolonged storage.



## **5.11 Other points of interest**

### **5.11.1 Procurement of unsuitable crash fire tenders**

The Ministry placed a supply order on BEML in October 1990 for development and supply of 18 CFTs. The prototype delivered by BEML in January 1991 was trial evaluated by the inspecting authority and the users and certain defects were noticed. However, Air Force agreed in December 1991 for placement of order for supply of six CFTs on the condition that the defects noticed would be rectified.

BEML delivered six CFTs to Air Force between February and March 1992. These were allotted to different airfields for extensive user trials. In July 1993, Air HQ also set up an independent team to evaluate and report on the utility of these CFTs for Air Force. Air HQ informed the Ministry in October 1993 that the CFTs were not fit for induction in Air Force because of lack of reliability. It was also brought out that the CFTs were linked with the flight safety and therefore, no compromise could be made with the shortcomings.

However, the inspecting authority observed that the defects pointed out by Air Force were of minor nature and could be rectified during production. The integrated Finance, however, maintained in February 1994 that further order on BEML be placed only after consultation with the Air HQ. Notwithstanding this, the Ministry without consulting Air HQ, placed an order on BEML in February 1994 for supply of two CFTs at a cost of Rs 76 lakh on the consideration that a Defence PSU should be capable of meeting the stipulated requirements of the Services. The two CFTs, delivered to IAF in August 1994, were also not found to be reliable and the IAF, therefore, recommended their withdrawal in January 1996. Thus, placement of the order on BEML without consulting the users, resulted in procurement of two unreliable CFTs costing Rs 76 lakh.

### **5.11.2 Non-utilisation of a system**

Against Air HQ order of September 1985, an imported integrated complex control mobile system costing Rs 1.76 crore, received in an ED in July 1990, was allotted to the user unit only in December 1995, after a delay of over five years. The unit had not collected the system as of March 1996. Thus, equipment imported at a cost of Rs. 1.76 crore was lying unutilised in the ED for over five years.

### **5.11.3 Non-utilisation of cranes**

As of April 1996, ten cranes costing Rs 3.89 crore were lying unserviceable at various IAF units for periods ranging from four months to eight years. Of these, four cranes valuing Rs 1.56 crore were lying unserviceable for more than four years. Air HQ

stated, in July 1996, that they planned to take up the matter regarding repair of cranes with the Ministry.

The matter was referred to the Ministry in November 1996; their reply was awaited as of December 1996.

## **Acquisitions**

### **6 Unfruitful expenditure on procurement of radars**

**Procurement of defective radars by IAF and their delayed installation/non-installation resulted in unfruitful expenditure of Rs 12.97 crore.**

In order to provide landing aids at airfields, type 'A' radars were procured from HAL and were installed at 16 out of 20 airfields during 1973-83. As HAL had reportedly developed an improved version of the radar (type 'B'), IAF decided to install the latter version in the remaining four airfields and placed an order on HAL in February 1980 for two radars type 'B' costing Rs 3.74 crore, to be supplied in June - September 1982. Evaluation and acceptance test of the radar were carried out by the designated inspection authority and the users in July 1981 and September 1981 respectively. Air HQ placed another order on HAL in January 1982 for two more type 'B' radars at a cost of Rs 3.74 crore to be supplied in September - December 1983. The radars were delivered during 1987-90 after a delay of over four to six years.

Since the radar type 'A' at 16 airfields was based on old technology and HAL was to provide maintenance support upto 1993-94 only, Air HQ decided to replace these radars by type 'B' radars in a phased manner between 1988-89 and 1995-96. Accordingly, Air HQ placed order on HAL in October 1987 for four more type 'B' radars at total cost of Rs 5.95 crore to be delivered at the rate of two each during 1988-89 and 1989-90. HAL supplied only three radars during 1991-96 after a delay of two to five years and the fourth radar was yet to be delivered. HAL had been paid Rs 12.97 crore for seven type 'B' radars delivered as of July 1996.

Though the radars were to be installed within six months of their receipt, only three could be installed after a delay of over four to six years due to large scale unserviceabilities encountered during their installation, integration and calibration. While three of the remaining four radars were scheduled to be installed by October 1996, the fourth one procured in 1990 at a cost of Rs 1.87 crore was yet to be taken up for installation (April 1996).

As type 'A' radars had been declared obsolete in July 1991 and type 'B' radar proved unreliable due to certain inherent defects and unsatisfactory performance, Air HQ decided in July 1995 to continue the use of type 'A' radar upto 1999.

Admitting the facts, the Ministry stated, in August 1996, that the procedure for all future inductions of radars has since been streamlined to eliminate the existing lacunae in the system.

Thus, failure of IAF/designated inspection authority to adequately evaluate the performance of the type 'B' radars led to procurement of unreliable radars at a cost of Rs 12.97 crore, besides compromising the flight safety norms due to forced use of old radars declared obsolete way back in 1991.

## 7 Procurement of missiles

**Air HQ failed to enforce the warranty clause resulting in eleven missiles valuing Rs 1.38 crore remaining in unserviceable state for last two to four years, besides reduction in their useful life by 25 - 50 per cent.'**

A contract was concluded with a foreign manufacturer in November 1991 for procurement of missiles at a unit cost of Rs 9.94 lakh. The missiles were guaranteed for a period of 12 months from the date of delivery and had a shelf life of eight years. On receipt of the missiles in April 1992, initial testing carried out in June 1992, revealed that 15 of them were unserviceable. Since the missiles were under warranty, Air HQ lodged a claim in June 1993 for their free replacement under the provisions of the contract.

The manufacturer, however, did not accept the claim and instead proposed in January 1994 to verify the claim by deputing their two specialists for 15 days subject to the condition that the expenditure of Rs 1.34 lakh approximately on deputing the specialists be borne initially by IAF, which would be reimbursed later if the claim was found justified. Air HQ did not agree and insisted in June 1994 for free replacement of the unserviceable missiles as per the conditions of the contract.

In the meantime, Government concluded another contract in March 1993 for procurement of a few more missiles at the unit cost of Rs 13.53 lakh from the same manufacturer. These were received in January 1994. Of these, eight missiles were found unserviceable during initial testing carried out in April 1994 bringing the number of unserviceable missiles to 23. IAF lodged another warranty claim in June 1994 for replacement of eight unserviceable missiles but the manufacturer did not accept the claim and insisted on deputing their specialists to India for checking the missiles as per their earlier stand.

IAF obtained sanction of Government in April 1995 for deputation of two foreign specialists for a period of 15 days on the same terms and conditions as were set out by the manufacturer in January 1994. The specialist visited India in May/June 1996 and rectified 12 missiles while the remaining 11 costing Rs 1.38 crore were lying unserviceable.

Accepting the facts, the Ministry stated, in August 1996, that deputation of the foreign specialists for checking the missiles was accepted to prevent any further loss of shelf life of missiles.

Thus, inspite of specific provision in the contract, Air HQ failed to get the defective missiles replaced under warranty clause. Eleven missiles costing Rs 1.38 crore were lying unserviceable for over a period of two to four years as of August 1996. In the meantime, 25 to 50 *per cent* of shelf life of the missiles had already expired.

## **Works Services**

### **8 Irregular sanction of special works**

**IAF incurred an expenditure of Rs 24.69 lakh on execution of unauthorised works during March 1994 to April 1996.**

Defence works are categorised as (i) authorised works' comprising of work services authorised in the regulations, or orders issued by Government and (ii) 'special works' comprising of work services sanctioned under exceptional local conditions or as an important experimental measure but which would not constitute a new practice or change of scale.

An IAF Command HQ issued directives in June 1992 and December 1993 for provision of tiles in the dining halls and bath rooms of airmen which was not included in the authorised' scale of accommodation. Boards met thereafter to assess the requirement of tiles at various IAF units/formations. On the basis of the recommendations of the Boards, the Command HQ and three units thereunder, accorded sanctions between October 1993 and November 1995 for provision of glazed and non-skid tiles in airmen dining halls, toilets and bathrooms as special works' at a cost of Rs 24.15 lakh. The works were completed between March 1994 and April 1996 at a cost of Rs 24.69 lakh. Sanctioning and execution of these works were in contravention of Government orders.

Admitting the irregularity, the Ministry stated, in August 1996, that the works were necessitated on health ground of airmen and added that instructions have been issued by Air HQ to all their Commands to avoid recurrence of such cases in future.

## Provisioning

### 9 Procurement of unsuitable gliders

**Cancellation of order for procurement of gliders resulted in redundancy of tooling and material worth Rs 1.37 crore, besides affecting glider training in NCC.**

Mention was made in paragraph 8 of Report No. 3 of 1989 of the C&AG of India, Union Government - Defence Services ( Air Force and Navy) for the year ended 31 March 1988 regarding unproductive investment of Rs 2.27 crore in procurement of 57 gliders from HAL. The fall out was inadequate glider training facility for NCC. In their ATN, the Ministry had stated, in January 1992, that despite inbuilt limitations in gliders on account of wooden construction technology and foreclosure of project at supplied quantity of 50 gliders, the users had recommended further procurement of 40 gliders to replenish their fleet to meet training requirement.

Further review revealed that the Ministry sanctioned procurement of 40 gliders at a total cost of Rs 5.43 crore (unit rate of Rs 12.35 lakh) including ground support equipment and maintenance spares in December 1991. Accordingly, Air HQ placed order on HAL in February 1992. The supplies were to be effected between 1993-94 and 1996-97. An amount of Rs 31 lakh was paid as advance to HAL in March 1993.

HAL, however, failed to deliver the gliders as scheduled and asked for increase in price ranging from 40 to 150 *per cent*, besides extension of delivery time by about two years. Neither the price increase nor extension of time was acceptable to the users, as other available gliders were not only better but also less expensive. The Ministry, therefore, directed HAL to hold the order for 40 gliders in abeyance and set up a committee to identify a suitable micro-light motor glider for induction into NCC. The order on HAL was cancelled in August 1994. This led to redundancy in tooling and material to the extent of Rs 1.37 crore mobilised by HAL, which lodged a claim for Rs 1.06 crore (excluding Rs 0.31 crore paid as advance) in September 1995.

Accepting the facts, the Ministry stated, in August 1996, that NCC has refuted the claim of HAL towards redundancy charges. However, the matter was yet to be finalised. They also added that non-availability of the gliders has affected the training of NCC.

## 10 Unnecessary procurement of radar tubes

**Despite sufficient stock of 23 tubes of a radar, RCPO procured three tubes at a cost of Rs 95.31 lakh in spite of very low trend of actual consumption.**

In May 1991, Air HQ projected a requirement of 48 numbers of tubes 'A' and 'B' of a radar for maintaining depot spares up to 1995. Of these, 34 tubes had been procured/ordered for procurement by May 1993. While examining the need for further procurement, RCPO suggested in August 1993 that as the consumption pattern of the tubes was not known, no further procurement of the tubes be made and that the stock already procured, would meet the requirement upto 1997.

It was noticed that even without knowing the actual consumption pattern, RCPO had no hesitation to declare the adequacy of the stock of tubes. Against this professed stand, however, RCPO executed a *volte-face* in March 1994 while considering the offer of BEL to deliver three such tubes procured by them from a foreign manufacturer notwithstanding the fact that 23 tubes worth Rs 3.39 crore were already held in stock (February 1994). Since the validity of the offer of BEL was expiring in March 1994, RCPO, against their own earlier suggestion, placed an order on the advice of Air HQ for procurement of three tubes at a total cost of Rs 95.31 lakh. The tubes were received in March 1994.

It was noticed that only two tubes were issued to the operating units between 1990-1996 and that twenty four tubes were lying in stock as of August 1996, which would last upto the year 2000. It is, therefore, evident that inspite of having sufficient maintenance stock of tubes, three more were extravagantly procured from BEL, incurring an unnecessary expenditure of Rs 95.31 lakh.

Accepting the facts, the Ministry stated, in August 1996, that procurement was based on bare minimum requirement projected by Air HQ. The fact, however, remained that only two tubes were issued during last six years and 23 tubes were already lying in stock (February 1994). Procurement of three such tubes valuing Rs 95.31 lakh in March 1994 was, therefore, unnecessary.

## 11 Procurement of unsuitable machines

**Procurement of 27 electrostatic liquid cleaner machines without proving their suitability and framing a policy on recycling the oil in the hydraulic system of the aircraft, resulted in an infructuous expenditure of Rs 77.23 lakh.**

With a view to improving flight safety environment, reducing down time of the aircraft and effecting economy, Government agreed, in November 1987, to the introduction of electrostatic liquid cleaner machines for recycling the oil in the hydraulic system of the aircraft. Air HQ imported four such machines at a cost of Rs 8.70 lakh in January 1990 and procured 23 indigenous machines costing Rs 68.53 lakh from HAL during May - June 1993.

None of the 23 indigenous machines procured at a cost of Rs 68.53 lakh could be used and four imported machines costing Rs 8.70 lakh were being used for other than the intended purpose. Air HQ realised in April 1996 that the machines were unsuitable for super cleaning of hydraulic oil used in the aircraft, which necessitated a search for alternative use of the machines. Moreover, a policy on recycling of hydraulic fluid was yet to be formulated as of July 1996.

Admitting the facts, the Ministry stated, in August 1996, that the recycled oil by indigenous machines can not be reused for aircraft hydraulic systems. The Ministry, however, added that "the machine will now be used with equal effectiveness for recycling hydraulic oil and its dehumidification at vital operational units like THD Radar Units as also at BRDs/Repair, Maintenance and Servicing Establishment". It may firstly be observed that there is no indication as to whether the aforesaid decision has been implemented and if so, to what extent the machines have been utilised. Secondly, there is no contest about the fact that the machines were initially procured for recycling of hydraulic fuel of aircraft and finding that the machines could not be utilised for the purpose for which these were procured, an attempt has been made to find an alternative use in radar installations for which no necessity for such machines was felt before their procurement. As a result, an infructuous expenditure of Rs 77.23 lakh had been incurred in the process.

## Other Cases

### 12 Damage to rotor blades of a helicopter

**EHQ, Mumbai and the consignee ED between them took 17 months to lodge claim on a foreign firm for damaged helicopter rotor blades valuing Rs 1.19 crore, which were despatched by the foreign firm on FOB basis instead of on CIF basis. This gave opportunity to the foreign firm to repudiate the claim as time-barred.**

The Ministry concluded a contract in January 1989 with a foreign firm for supply of one set of rotor blades of a helicopter at a CIF cost of Rs 1.19 crore. The firm shipped the consignment in January 1994 on FOB basis contrary to the provisions of the contract. EHQ, Mumbai received the consignment containing the blades in March 1994 in a damaged condition.

A Board conducted marine survey of the consignment during the same month and found the packing case and blades in damaged condition. The Board recommended preferment of a claim against the carriers. Instead of preferring the claim against the carriers, EHQ forwarded the survey report to the concerned consignee ED in April 1994, asking them to collect the consignment. The consignment which should have been collected in April 1994, was finally received by ED in July 1995. In the meantime, the prescribed time limit of 90 days for raising the claim had expired. ED raised the discrepancy report in August 1995 against the firm which rejected the claim in October 1995 as being time-barred. The blades were transferred to the operating unit in February 1996 for exploring the possibility of its repair.

The Ministry stated, in August 1996, that the firm was being persuaded to repair/replace the blades free of cost since these were despatched in violation of the contractual provisions. It also added that the delay in raising the discrepancy report was mainly due to procedural reasons and instructions have been issued to avoid recurrence of such contingencies in future.

Thus, lack of co-ordination between EHQ and ED led to delay in preferring the claim for damage which was rejected by the firm as time-barred though the firm had violated the contractual provisions in the matter of despatch of the blades. As a result, the blades costing Rs 1.19 crore were lying in a damaged condition since March 1994. The lapse evidently calls for fixation of responsibility.



### 13 Loss due to negligence

**Negligence of IAF in packing and handling of a radar tube costing Rs 25.50 lakh caused damage to it beyond economical repairs, resulting in rejection of claim for its warranty replacement. The damaged tube was cleared for disposal without investigating the reasons.**

A radar tube procured in March 1992 from BEL at a cost of Rs 25.50 lakh failed within the warranty period of one year. The operating unit returned the tube to an Air Force depot in December 1992 in a Service aircraft for onward despatch to BEL for its warranty replacement. But the depot handed over the tube after receipt and inspection to a Movement Control Unit (MCU) for onward despatch to BEL. MCU despatched the tube in January 1993 through a civil truck. On opening the consignment in August 1993, BEL found that it had been damaged and ascribed the damage to faulty packing. Nevertheless, in October 1993, BEL sent the tube to the foreign manufacturer for evaluation and repair.

After investigation, the manufacturer stated, in February 1994, that the tube was severely damaged and the damage might have occurred due to mishandling. Considering the extent of damage, the manufacturer declared the tube beyond economical repair and recommended its scrapping. BEL rejected the claim of Air HQ in June 1994 stating that warranty terms could not be applied as the tube had been damaged beyond repairs by the users.

It was noticed that rather than investigating the matter regarding faulty packing or mishandling of the tube as required under extant orders, Air HQ declared the tube unserviceable in September 1994 and authorised its disposal.

IAF failed to enforce the warranty clause for repair/replacement of radar tube due to its further damage in transit to BEL on account of faulty packing. Thus, negligence of IAF in packing and handling of the tube valuing Rs 25.50 lakh led to its scrapping without any compensation and no responsibility for the loss has been fixed as of August 1996.

While admitting the above facts, the Ministry stated, in August 1996, that instructions have been issued to the Command HQ to order COI to investigate the matter. It also added that BEL has been asked to reimburse the amount of Rs 25.50 lakh on account of damaged tube.

## 14 Wasteful expenditure on import of an equipment

**IAF took more than six years to decide utilisation of an imported equipment valued at Rs 11.46 lakh for refuelling the missiles, when the missile itself was declared obsolete.**

IAF had been using an equipment for refuelling missiles since 1964. In 1985, necessity arose for two more such equipment, but Government concluded a contract with a foreign country in June 1986 for procurement of one equipment only at a cost of Rs 11.46 lakh. The equipment was received in an IAF unit in July 1987 but was not taken on charge for over six years as the unit could not identify the equipment. A Board, constituted in September 1993, identified the equipment in November 1993 and it was taken on charge during the same month. The equipment, however, could not be put to any use even thereafter as missiles for which it was imported, had been declared obsolete and withdrawn from IAF by September 1993. Consequently, in January 1994, the unit recommended disposal of the equipment.

Air HQ ordered a COI in January 1996 to, *inter alia*, fix responsibility for delay in identifying the equipment and not taking it on charge and its consequential non-utilisation.

The Ministry stated, in August 1996, that COI was in progress and its proceedings were expected shortly.

Thus, failure of an IAF unit to identify the imported equipment for over six years resulted in wasteful expenditure of Rs 11.46 lakh.

## 15 Recoveries at the instance of Audit

**Air HQ recovered advance of Rs 1.50 crore after being pointed out by Audit.**

Outstanding advance of Rs 1.50 crore was recovered at the instance of Audit during 1995-96, details of which are as under:

### Case I

HAL raised three work orders between August 1989 and October 1990 for fabrication of spares at a total cost of Rs 3.56 crore for servicing of IAF helicopters during the period from 1989-90 to 1991-92.

Against the subject work orders, advance amounting to Rs 1.25 crore towards stage payments was made to HAL in August 1989 and October 1990. It was noticed that HAL had fabricated and supplied spares worth Rs 0.43 crore only upto September 1992 and the balance amount of advance of Rs 0.82 crore remained with them though under the existing orders, the amount should have been adjusted/recovered within six months of supply of the items. On this being pointed out by Audit in February 1995, the sum of Rs 0.82 crore was recovered from HAL in August 1995.

## **Case II**

Between February 1994 and March 1995, Air HQ allotted nine aero-engines to HAL for retrieval of all useful components/rotables. The retrieved serviceable rotables and other components were to be credited to IAF stores held with them for use in overhaul programme. It was noticed that HAL had been paid an advance of Rs 0.68 crore during June - August 1995 towards part payment as if the aero-engines had been overhauled. Keeping in view the fact that the aero-engines had actually not been overhauled, no payment was due to them on that account. On this being pointed out by Audit in February 1996, an amount of Rs 0.68 crore was recovered from HAL in March 1996.

The Ministry stated, in August 1996, that instructions had since been issued to avoid such lapses in future.



## CHAPTER IV

### NAVY

#### Review

#### 16 Submarine fleet

##### 16.1 Introduction and scope of Audit

The Navy acquired certain number of 'F', 'S' and 'K' class of submarines in batches between 1967 and 1994 at a total cost of Rs 1614.31 crore for deployment in both offensive and defensive roles. The review covers the operation and maintenance of these vessels during 1990-95, including creation of infrastructure for their refit and personnel training.

##### 16.2 Command and control of submarines

The submarines are placed under the operational and administrative control of the FOsC-in-C of the respective Naval Commands. A Flag Officer is appointed as Class Authority for the submarines to coordinate and institute common standards and practices, safety precautions and procedures, warfare tactics and training and also operational readiness.

##### 16.3 Highlights

- **The operational availability of the submarines ranged between 10 and 66 per cent only, affecting the combat readiness of the fleet as a whole.**
- **Communication facilities created in 1989 at a cost of Rs 122.16 crore could not be fully exploited as bulk of the submarine fleet were not fitted with the antenna system to receive the messages transmitted by the station.**
- **Prescribed time schedules for refit of submarine were not adhered to, affecting the operational availability of the vessels, blocking the Naval dockyards for longer duration, necessitating refit of other Naval vessels in commercial docks at an expenditure of Rs 3.04 crore.**

- **Augmentation project for repair facilities for 'K' class submarines was languishing. Only Rs 8.78 crore has been spent against Rs 51 crore sanctioned in 1989.**
- **Armament repair facilities of 'K' class submarines also lagged behind. Equipment worth Rs 40.03 crore imported for armament repair facilities during 1995-96 are expected to be used only by the turn of the century, after the associated civil works are completed.**
- **'K' class submarines acquired during the eighties had operational limitations which could not be assessed before procuring one more vessel of the same class at a cost of Rs 120.26 crore in December 1990. Upgradation of the vessels which is expected to cost five times the acquisition cost, is yet to be taken up.**
- **Very high persistent shortfall in the participation of the submarines in the fleet exercises was noticed. Shortfall was also seen in the utilisation of programmed training days.**
- **Stores worth Rs 3.20 crore imported/procured for meeting urgent requirement, were lying unused for over two to four years.**
- **Dedicated hull construction facility created at a cost of Rs 16.67 crore in Mazgon Dock Limited (MDL) in the early eighties has remained unutilised since 1986-87.**

#### **16.4 Refit and maintenance**

For the purpose of ensuring proper preventive maintenance of the submarines, periodical refit of all the three classes has been prescribed by the Naval HQ. These refits are of three different types namely short, normal and medium, with specified durations ranging from two to 24 months. For the purpose of carrying out refits of the submarines as well as the surface vessels of the Indian Navy, there are six naval dry dock facilities - four at Mumbai and two at Visakhapatnam. Any time-overrun in carrying out refits beyond the prescribed periods has evidently an adverse effect on the maintenance schedule of other vessels due for refits, affecting their operational availability and battle readiness. So far as the submarines are concerned, it was noticed that between 1990 and 1995, there were inordinate delays in carrying out prescribed refits of all the classes as indicated below:

Refits undertaken at Naval dockyards:

Type of refit	Type of submarine	No. of refits taken up	Prescribed duration for completion of each refit (in months)	Average extra time taken (in months)	
<b>Short Refit</b>					
	F	7	3	8	
	S	2	2	4*	* One each yet to be completed
	K	8	3	8	
<b>Normal Refit</b>					
	F	1	12	11	
	S	2	8	20	
	K	2	12	36*	
<b>Medium Refit</b>					
	F	2	24	32	Both the refits yet to be completed

No cost data is available with the Naval authorities to ascertain the expenditure incurred on the various types of refit at Naval dockyards. In the absence of such data, it has not been possible to examine the financial implications of the time-overruns for carrying out refits.

According to the Navy, the delay in completion of refit was due to non-availability of spares, yard material, dry dock availability and shortage of man power. The delay in completion of refits not only affected the availability of operational vessels but also held up dockyard facilities for refit of other Naval vessels. As a result, certain other surface vessels had to be dry docked in commercial yards at an expenditure of Rs 3.04 crore during 1990-95 at one of the Naval Commands. Although, instructions had been issued to Naval Repair Organisations by Naval HQ in April 1988 and ratified by the Ministry in November 1991 to update their list of spares on a regular basis to ensure availability of spares for refits, there had been no perceptible improvement in the situation.

## **16.5 Delay in creation of repair facilities**

(a) In October 1989, the Ministry issued a sanction for augmentation of repair facilities at Visakhapatnam at a cost of Rs 51 crore for two classes of surface vessels and 'K' class of submarines for completion by 1995-96. The object of augmentation programme was to cater to special requirements of relatively recent acquisitions as those could not be met by the existing facilities. As of September 1995, only Rs 8.78 crore had been spent. As the augmentation programme was evidently languishing, Naval HQ proposed in January 1995 to offload the repair of one 'K' class submarine to a foreign country for which a sanction of the Ministry was issued in November 1996 for Rs 74.57 crore. The reasons for tardy progress of the augmentation programme was not made available to Audit. It is a matter of concern that for lack of repair facilities, refit of comparatively new acquisitions which have fallen due, cannot be undertaken indigenously.

(b) The Ministry also sanctioned in May 1991 civil works for housing test equipment in Naval Dockyard, Mumbai at a cost of Rs 64 lakh for augmentation of repair facilities for 'S' class submarines. The test equipment costing Rs 44.19 lakh were imported between August 1990 and September 1991 and although, the aforesaid civil works had been completed in July 1995 at a cost of Rs 59 lakh, DGNP was yet to complete installation of the imported equipment as of April 1996.

## **16.6 Armament repair facility**

An Inter-Government agreement was concluded in 1987 for setting up of armament repair facilities at Naval Dockyard, Mumbai. It was envisaged, in November 1993, that the said facility would support repair of weapons worth Rs 600 crore. Pursuant to the Inter-Government agreement of 1987, a contract was concluded only in June 1993 for supply of equipment costing Rs 40.03 crore. Part supply of equipment worth Rs 9.24 crore had already been received between March 1995 and March 1996 and the balance is likely to be received by December 1996. Civil works, necessary to accommodate these equipment at a cost of Rs 8.63 crore (revised to Rs 9.18 crore in January 1996) were, however, sanctioned very late in January 1995, although it was known that supply of the aforesaid equipment was already in the pipeline. Scrutiny of the said sanction further revealed that the civil works would be completed in 36 months from the date of award of the contract for construction. DGNP had since concluded a design consultancy contract in January 1996 for preparation and initiation of the required tender process. But the contract for civil works has not yet (September 1996) been awarded.

The delayed action to sanction the civil works had two effects. Firstly, equipment for armament repair costing over Rs 40 crore is likely to remain unutilised optimistically for the next three years causing deterioration of equipment. Secondly, it would correspondingly delay the completion of indigenous armament/weapon repair facilities, in the absence of which such repairs are being carried out by replacement of complete sub-



assemblies/units ex-stock and by utilising the services of foreign specialists. No data is available to work out the extra cost involved in the process.

## **16.7 Operational status and availability of the submarines**

The Navy operates a certain number of submarine squadrons, each with an assigned number of vessels. All the squadrons, excepting one which had only 50 *per cent* of its complement, operated with the assigned number of vessels. However, on account of considerable time overruns for various refits, ( paragraph 16.4 refers), the operational availability of vessels during 1990-95 ranged between 10 and 66 *per cent* of the total strength of submarine fleet.

**16.7.1** The operational status of each class of submarine involves certain significant issues which are discussed below:

### **16.7.2 'F' class submarines**

F' class submarines, whose normal life is stated to be 20 years, were commissioned between December 1967 and December 1974. Out of the 20 years, the submarine is expected to be operationally available for atleast 12 years, the remaining time being spent in refits. Two of these submarines have since been decommissioned - one in September 1989 and the other in May 1996 and sanction for decommissioning of one more submarine was issued by the Ministry in December 1996. In the proposal for decommissioning the first one, it was stated in July 1989 that the normal life of the vessel was over and that the submarine had deteriorated to such an extent that it could not be gainfully deployed further. The reason for fast deterioration of this submarine was stated to be its deployment in tropically saline water. With a view to ascertaining the time during which this submarine was operationally available to Navy, the Naval authorities were requested to furnish the total time during which the submarine remained docked for refits. The Naval authorities intimated in December 1996 that while they were making efforts to collate the information regarding the period spent in refits, it might be difficult to obtain it, since all records had been disposed of after decommissioning the submarine. In case of the second submarine, which was decommissioned in May 1996, it is found that the vessel was in service for 28 years and 5 months out of which 16 years and 2 months were spent in refits/lay off, as a result of which the Indian Navy could utilise the vessel operationally for only 12 years and 3 months. Thus, while this submarine was operationally available for about 12 years, 57 *per cent* of its extended life was consumed for refits. The third submarine was available in operational state only for nine and a half years out of 22 years of service life.

Considering the cost of replacement, shortened operational life span of the vessels is a matter of serious concern.

### 16.7.3 'K' class submarines

In January 1988, the Navy sought to add one 'K' class submarine to their fleet and while processing the case for Government sanction, suggested that plan for acquisition of more 'S' class submarines should be dropped as the 'K' class was superior. Accordingly, the proposal was accepted in March 1988 and one 'K' class submarine was imported at a cost of Rs 120.26 crore and commissioned in December 1990.

It was, however, noticed in audit that opinion of the Navy about the superiority of 'K' class submarines was not based on an actual assessment of combat capability of the submarines. Even at the time of submitting the proposal in January 1988 to augment the 'K' class fleet of submarines, a full comparison of the capabilities of 'S' and 'K' class had not been carried out although both the classes were available with the Navy for a considerable time. When this exercise was completed in 1988, the Navy realised that 'K' class was a highly under-powered vessel although it had excellent sonar capability, modern long range torpedoes and a superior hull design. As a result, the vessel was later assessed to be inferior in combat capability but no attempt was made to forestall procurement of the 'K' class vessel which was already processed. Instead, in 1992, the Navy ambitiously proposed upgradation and modernisation of the 'K' class submarines in a phased manner at a cost of Rs 4000 crore. It is curious to note that the proposed cost of upgradation was nearly 500 *per cent* of the cost of acquisition. No justification has been provided by the Navy as to why an inferior class of submarines should be procured in the first place, which requires upgradation at an exorbitant cost. So far this proposal had not been acceded to, but the Ministry had provided Rs 1.50 crore between July 1994 and February 1996 to improve the habitability and performance of certain equipment on board of this class of submarines.

## 16.8 Fleet exercise and training

### 16.8.1 Exercise

Exercise and training of personnel, as in the case of other arms of the Defence Forces, are essential to maintain the battle fitness of the Navy. Naval HQ prescribed standards for conducting exercise by the operational vessels from time to time which, *inter alia*, stipulated participation by all the operational vessels in combined and coordinated exercises alongwith other surface vessels and aircraft in the Navy for prescribed durations. It was, however, seen that during 1990-95, the number of participating submarines in exercises was not only low but also the actual duration of their participation was far below the prescribed durations.

Naval HQ stated, in February 1996, that during peace time, every sea sortie had a training value which built up confidence level of the crew and improved combat efficiency. This argument is not tenable as the combined and coordinated fleet exercises are intended

to operate the vessels in tandem with other vessels to enhance combat skills in various eventualities (including war like situations) which were not susceptible to simulation during single sea sorties. Further, as the Navy did not have any submarine specifically dedicated for training purposes, their participation in combined fleet exercises was all the more necessary to ensure battle-fitness of both the crew and the submarine fleet.

### **16.8.2 Training**

The training courses for the crew and officers of the submarine fleet are conducted in a training establishment as per the annual training programme of Naval HQ. A study of the total training days utilised *vis-a-vis* those programmed during the period 1990-95 shows that the shortfall in utilisation of the programmed number of days ranged from 17 to 52 *per cent* in respect of officers and 16 to 46 *per cent* in case of sailors. This apart, the duration was also curtailed by two to ten weeks in respect of certain courses. Thus, training facilities were not utilised to the extent these were programmed.

### **16.9 Unnecessary procurement of spares/unsuitable decoys**

Stores worth Rs 3.20 crore, procured/imported on the ground of meeting urgent demands were lying unused for over two to four years as under:

#### **16.9.1 Case I**

During April 1993- May 1994, a Naval Material Organisation procured spares costing Rs 1.42 crore through ship chandeliers to meet its operational demands as delay was anticipated in procuring the spares directly from the foreign supplier. It was, however, noticed that the spares were lying in stock as of December 1995, thereby indicating lack of justification for procurement of spares from the ship chandeliers on grounds of operational urgency. Since no quotation was obtained from the foreign supplier, the extra cost, if any involved, is not ascertainable.

#### **16.9.2 Case II**

In another case, based on the operational demands for spares projected during July 1989 - November 1991 by a Naval dockyard, Naval HQ imported spares at a cost of Rs 1.01 crore between May 1992 and August 1994 for refit of 'S' class submarines. All these spares were, however, lying unused in stock as of April 1996 and the refit of one of the 'S' class submarines for which these were intended to be used, had already been completed in October 1992 itself.

### **16.9.3 Case III**

A particular type of decoy to be deployed from the submarines was developed by a Naval Research and Development Laboratory in October 1986 at a cost of Rs 39.88 lakh. However, during trials the decoy did not prove successful against certain torpedoes. It was, therefore, decided in October 1986 that order for production of the decoys would be withheld until trials against those torpedoes were successfully completed. Even though the decoys had failed in subsequent trials in May 1989, Naval HQ decided in October 1992 to clear production of 100 decoys by Bharat Dynamics Limited on which a demand for productionisation of decoys had been placed in March 1987. The decoys costing Rs 77.34 lakh were received in September 1994 and were since lying in stock without being used. The procurement of unsuitable decoys had, therefore, resulted in an avoidable expenditure of Rs 77.34 lakh.

### **16.10 Other cases**

#### **16.10.1 Gross under-utilisation of communication facilities**

In order to meet the requirement of communication with submarines, a shore communication station was set up in April 1989 at a cost of Rs 122.16 crore. The submarines were, however, not fitted with necessary antenna system to receive communication transmitted by the station. A contract was, therefore, concluded with a foreign firm in December 1989 for procurement of antenna system for fitment on certain number of 'S' class submarines at a cost of Rs 2.42 crore. The systems were commissioned in November 1992 and March 1994. In addition, two systems ordered at a cost of Rs 3.77 crore in March 1993 were received in April 1994 and January 1995, of which one was commissioned in October 1995 while the second was yet to be commissioned (September 1996).

It was, however, noticed that the remaining submarines constituting bulk of the fleet were yet to be fitted with the requisite antenna system. Consequently, the communication station set up at a cost of Rs 122.16 crore had remained grossly under-utilised for over seven years. Reasons for the delay in equipping the bulk of the fleet with the receiver antenna have not been disclosed to Audit.

#### **16.10.2 Indigenous construction of 'S' class submarines**

Navy invested a total amount of Rs 41.80 crore for creation of facilities in MDL to undertake construction of 'S' class submarines. Out of this investment, Rs 16.67 crore were utilised for setting up welding stations, jigs etc. which were dedicated to hull construction of 'S' class submarines and could not be utilised for any other purpose. The construction of two 'S' class submarines by MDL commenced between January 1984 and September 1984, and fabrication of the two hulls were completed by 1986-87, one

submarine was delivered to the Navy in February 1992 and a second one in May 1994 at a total cost of Rs 390 crore. After commencement of construction of these two submarines by MDL, the Ministry decided in April 1989 that no further construction should be undertaken without examining the feasibility of importing ready-built vessels of another class. As of August 1996, the aforementioned feasibility study remained incomplete and no further construction of submarines had been ordered, as a result of which the dedicated facility for hull construction, created at a cost of Rs 16.67 crore, remained unutilised from 1986-87.

The matter was referred to the Ministry in October 1996; their reply was awaited as of December 1996.

### **Works Services**

#### **17 Avoidable expenditure on construction of excess accommodation**

**Failure of the Naval authorities/ the Ministry in assessing the exact requirement of the quarters at a station resulted in construction of 236 quarters of Petty Officers in excess of their authorisation entailing an avoidable expenditure of Rs 11.36 crore.**

Naval HQ issued eight sanctions during March 1984 and March 1985 for provision of married accommodation for 240 Petty Officers at Kochi at a total cost of Rs 5.65 crore. Based on the recommendations of a Board convened in March 1985 by Southern Naval Command, the Ministry accorded another sanction in April 1986 for provision of additional married accommodation for 90 Master Chief Petty Officers/Chief Petty Officers (MCPOs/CPOs) and 150 Petty Officers at the same station at an estimated cost of Rs 8.91 crore, revised to Rs 13.67 crore in December 1994. The construction of the accommodation was completed by September 1995.

Naval Command noticed in mid 1994 that 139 quarters for Petty Officers had been constructed over and above their authorisation and decided to adjust them against the deficiency of quarters for MCPOs/CPOs.

Scrutiny of records by Audit revealed that there was no deficiency of married accommodation for MCPOs/CPOs. In fact, the station already had 86 quarters in excess of authorisation for Petty Officers at the time when additional 150 quarters were sanctioned in April 1986. It was further seen that the mandatory cut of 20 *per cent* was not taken into account while working out the requirement of quarters for Petty Officers and the additional requirement of 150 quarters worked out by the Board was based on incorrect data which resulted in construction of 236 quarters at a cost of Rs 11.36 crore in excess of the requirement.

Thus, negligent planning, monitoring, scrutiny of proposals and disregard to the mandatory cut resulted in construction of 236 quarters for Petty Officers in excess of authorisation at a cost of Rs 11.36 crore. The proposed alternative use of the surplus quarters also lacked justification as there was no deficiency of accommodation for MCPOs/CPOs.

The matter was referred to the Ministry in July 1996; their reply was awaited as of December 1996 despite reminders.

## **Provisioning**

### **18 Delay in provision of radars**

**The Ministry delayed sanctioning the procurement of radars which led to avoidable cost overrun of Rs 1.50 crore and defeated the very purpose of their procurement at a cost of Rs 3.63 crore.**

Naval HQ sought sanction of the Ministry in May 1986 for procurement of one set each of radars 'A' and 'B' for use as reference sets during maintenance, calibration and periodic overhaul of similar radars installed on Naval ships during 1981-85. BEL had quoted Rs 1.16 crore for radar 'A' and Rs 0.97 crore for radar 'B' in March 1986. The quotation was valid upto June 1986. While the proposal remained under consideration of the Ministry/Naval HQ for about three years, BEL revised the cost of radars 'A' and 'B' in February 1989 to Rs 2.64 crore and Rs 2.10 crore respectively. Naval HQ, therefore, proposed, in November 1989, procurement of only electronic units of the radars and their integration with the antenna of certain other existing radars. This was expected to reduce the total cost by Rs 1.35 crore. After negotiations by a price negotiation committee in March 1991, the price was firmed up at Rs 1.96 crore and Rs 1.67 crore for radars 'A' and 'B' respectively without antenna. The Ministry issued sanction in September 1991 for procurement of the radars along with installation material at a total cost of Rs 5.20 crore and Naval HQ placed supply order on BEL in October 1991 for delivery of the radars by December 1992 at a cost of Rs 3.63 crore, excluding taxes. BEL, however, supplied only radar 'A' in March 1993 which was found defective during installation. The delivery/installation of the radars was expected to be completed only by March 1997. But by that time, the normal electronic life (12 1/2 years) of ship-borne radars would have expired. Till May 1993, BEL had been paid Rs 3.80 crore as stage payments including advance of Rs 72.60 lakh paid in July 1991.

Thus, the delay of five years in sanctioning/procurement of reference radars resulted in escalation of cost by Rs 1.50 crore even for a scaled down version. Moreover, the installation of reference radars which were considered essential for repair/ maintenance of ship-borne radars and for which a sum of Rs 3.80 crore had been paid till May 1993, was expected to be completed only by March 1997. Since by that time, the electronic life

of the radars to be supported/maintained would have expired, the very objective of procurement of the reference radars to be used in calibration of ship-borne radars is likely to be defeated.

The matter was referred to the Ministry in June 1996; their reply was awaited as of December 1996 despite reminders.

#### **19 Procurement of sub-standard boiler tubes**

**Failure of Naval authorities to indicate the specifications of tubes, coupled with the failure of inspecting agency to pin point the fault resulted in wasteful expenditure of Rs 79.36 lakh.**

In March 1987, Naval HQ raised an indent on DGSD for 14 sets of boiler tubes for use in naval ships. DGSD placed orders on two firms in April 1988 for supply of seven sets of boiler tubes each at a total cost of Rs 79.36 lakh. The firms supplied the tubes during July 1989 to April 1990. DQA accepted the consignment after inspection.

Subsequently, when the tubes were used in the boilers of a naval ship in July 1993, it suffered leaks during auxiliary steaming. The Board held in July 1993, attributed the tube-leaks to sub-standard material used in their manufacture and noted that the specification of tube material had not been indicated clearly by Naval HQ/DGSD while raising indent/placing orders. As the entire consignment was declared unfit for use, the Navy had to procure four more tubes in November 1993 at a cost of Rs 24.76 lakh from another firm for meeting their urgent operational requirement.

Thus, failure of Naval HQ to indicate the specification of the tube material and inability of DQA to detect the sub-standard quality of tubes during inspection resulted in wasteful expenditure of Rs 79.36 lakh.

The matter was referred to the Ministry in July 1996; their reply was awaited as of December 1996 despite reminders.

#### **20 Procurement of defective life boats**

**Failure of the inspection authorities to detect defects in life boats valuing Rs 47.76 lakh led to their non-utilisation since May 1994.**

Naval HQ concluded a contract in June 1992 with a firm for supply of six life boats at a cost of Rs 47.76 lakh by February 1993. The boats were cleared for acceptance after inspection by the designated authority and received by the Navy in May 1994. The boats were warranted against defective material, workmanship and performance for a period of 12 months from the date of receipt. However, during trials conducted by the users in June 1994, certain defects and deficiencies were noticed in all the six boats. Since the

boats were still under warranty, Naval HQ asked the firm in August 1994 to rectify the defects and make good the deficiencies but the firm did not respond despite repeated requests. Consequently, the boats had remained non-operational as of December 1995.

Thus, due to failure of inspection authorities, assets worth Rs 47.76 lakh could not be put to use.

The matter was referred to the Ministry in May 1996; their reply was awaited as of December 1996 despite reminders.

## **21 Non-utilisation of computer folders**

**Lack of planning on the part of Naval authorities led to non-utilisation of computer folders valuing Rs 14.91 lakh for the last three years.**

With a view to implementing the computerised pay accounting system in Naval Pay Office (NPO) at Mumbai, Naval HQ sanctioned procurement of 60,000 folders in May 1992 at a cost not exceeding Rs 21 lakh for keeping computer printouts. The folders were procured at a cost of Rs 19.03 lakh from a private firm and were received in Naval Store Depot (NSD), Mumbai during May - August 1993.

After receipt of the folders, the users felt the necessity of providing appropriate storage facility for the management and handling of the folders. Naval HQ proposed procurement of a mobile storage system at a cost of Rs 34.63 lakh as a 'special work' under the works programme for 1994-95, but the Ministry rejected the proposal stating that the subject work did not fall under 'special works' and that it was covered under 'office equipment'. Naval HQ decided, in April 1995, not to proceed further in the matter. Obviously, the required facilities were yet to be planned/provided.

In the meantime, NSD issued 13,595 folders to NPO in June 1993, of which NPO utilised 13,000 folders during June - August 1995, after a lapse of two years. NPO had not collected the balance 46,405 folders from NSD due to non-availability of storage space.

Thus, Naval authorities had neither visualised and planned the storage space required for managing the folders simultaneously with their procurement nor had acted on the advice of the Ministry. This has resulted in non-utilisation of 47,000 folders valuing Rs 14.91 lakh for the last three years besides non-implementation of computerised accounting system in NPO.

The matter was referred to the Ministry in May 1996; their reply was awaited as of December 1996 despite reminders.



## 22 Extra expenditure in procurement of cotton waste

**Failure of CPRO, Mumbai to consolidate two indents received prior to finalisation of the contract for supply of cotton waste entailed an extra expenditure of Rs 9.05 lakh.**

Naval HQ raised an indent in February 1993 on CPRO, Mumbai for supply of 1,00,000 Kg cotton waste white bleached (cotton waste). Before CPRO could finalise a contract against this indent, Naval HQ raised yet another indent on them in April 1994 for supply of 1,14,000 Kg cotton waste. Though the tender enquiry was made based on February 1993 indent, CPRO finalised a contract with a firm in September 1994 for supply of only 1,14,000 Kg cotton waste indented in April 1994 at the rate of Rs 18.95 per Kg. However, CPRO did not include the quantity of 1,00,000 Kg cotton waste indented by Naval HQ in February 1993. The supplies materialised between October 1994 and May 1995.

Subsequently, CPRO concluded another contract with the same firm in July 1995 for supply of 1,00,000 Kg cotton waste indented in February 1993 at the rate of Rs 28 per Kg. The supplies materialised between September 1995 and December 1995.

Thus, the lapse on the part of CPRO in not consolidating the requirement of cotton waste indented by Naval HQ in February 1993 and April 1994 at the time of finalising the contract with the firm in September 1994 resulted in an extra expenditure of Rs 9.05 lakh.

The matter was referred to the Ministry in May 1996; their reply was awaited as of December 1996 despite reminders.

### Other Cases

## 23 Procurement of Article-TEM-3 without cables

**Naval HQ failed to ensure correct description of an equipment in the language of exporting country as per negotiations, which resulted in supply of incomplete equipment valuing Rs 5.08 crore.**

Based on negotiations held in January 1993, Naval HQ entered into an agreement with a foreign firm in April 1993 for supply of certain equipment for Naval ships at a cost of US \$ 4.35 million, which included eight sets of 'Article-TEM-3' at the unit rate of US \$ 0.2 million.

Eight sets of Article-TEM-3 were received in July 1994 without the cables. Naval HQ approached the Indian Mission in that country in the same month to take up the matter with the supplier to expedite supplies of the cables. The supplier, however, contended that the agreement was only for supply of Article-TEM-3 and did not include the cables. Naval HQ held in February 1995 that the spirit of discussion during negotiations was for supply of complete set of Article-TEM-3 and not only for its mechanical accessories. While entering into the agreement, Naval HQ failed to ensure that the item was correctly specified in the language of the exporting country. As a result, the supplier took advantage to supply only the mechanical accessories. As the accessories without cables were of no use, Naval HQ asked the Indian Mission in that country to approach the supplier either to supply the cables or to collect the accessories at their cost. However, the supplier did not agree to either of the options. Consequently, the accessories costing US \$ 1.6 million (Rs 5.08 crore) were lying in stock since July 1994 without any prospect of their utilisation in the absence of cables.

Thus, failure of Naval HQ to correctly specify complete description of the equipment Article-TEM-3 as per negotiations, resulted in procurement of the unusable equipment at a cost of US \$ 1.6 million (Rs 5.08 crore).

The matter was referred to the Ministry in July 1996; their reply was awaited as of December 1996 despite reminders.

#### **24 Non-deduction of income tax at source**

**In disregard to the Income Tax Rules, CDA (Navy), Mumbai did not recover the income tax amounting to Rs 23.59 crore at source from the payments released to two contractors during 1994-95 and 1995-96.**

Under the Income Tax Rules, any person paying any sum including advance to any resident contractor for carrying out any work against a contract in excess of Rs 0.10 lakh is required to deduct two *per cent* of such payment as income tax. Exceptions are, however, made in this regard where a contractor obtains and furnishes a certificate from the concerned ITO for deduction of no such tax or its deduction at a lower rate for the period specified in the certificate.

Test check of payment accounts of a few contractors during 1994-95 revealed that even though the contractors had not furnished the necessary exemption certificates from the prescribed authority, CDA (Navy), Mumbai released payments to them without deducting the income tax. On being pointed out by Audit in August 1994, CDA while admitting that income tax could not be recovered due to oversight, stated in December 1994 that income tax was being effected now. It was noticed that the CDA released payments amounting to Rs 596.39 crore in 1994-95 and Rs 583 crore in 1995-96 in

disregard to the extant rules, to two contractors who had not furnished the necessary exemption certificates. This resulted in non-recovery amounting to Rs 23.59 crore towards income tax at source.

The matter was referred to the Ministry in July 1996; their reply was awaited as of December 1996 despite reminders.

## 25 Avoidable payment of surcharge due to low power factor

**Failure of Naval Dockyard, Mumbai to maintain requisite power factor and delay in providing capacitors resulted in avoidable payment of Rs 1.64 crore towards surcharge to BEST during June 1992 - November 1995, besides an annual recurring liability of Rs 46.82 lakh.**

Under an agreement concluded with BEST in February 1978 for supply of power, Naval Dockyard, Mumbai was required to maintain a minimum power factor of 85 *per cent* which was revised to 92 *per cent* from May 1992. As per the contract, each one *per cent* shortfall in the power factor attracted half *per cent* surcharge on the power consumed. BEST suggested to Naval Dockyard in September 1992, to install suitable capacitor(s) in order to attain the requisite power factor. Naval Dockyard took almost two years to constitute a Board for improving the power factor. Board which was convened only in September 1994, was to study the feasibility of installation of capacitor bank and switch gear for improvement of power factor and give its recommendations by December 1994. The Board, however, finalised its recommendation in October 1995 and sanction for installation of the capacitor bank at Naval Dockyard was accorded in March 1996 at a cost of Rs 1.18 crore. The required work was likely to be completed by March 1998.

Meanwhile, Naval Dockyard had paid surcharge amounting to Rs 1.64 crore to BEST for not maintaining the requisite power factor during June 1992 to November 1995 and continues to face the prospect of paying an average of Rs 46.82 lakh annually until the capacitors are provided.

Thus, due to the unduly long time taken by Naval Dockyard to take appropriate action to attain the power factor, an avoidable payment of Rs 1.64 crore towards surcharge had to be made. An annual recurring liability amounting to Rs 46.82 lakh on this account would continue till the capacitor bank is provided and the stipulated power factor is achieved.

The matter was referred to the Ministry in July 1996; their reply was awaited as of December 1996 despite reminders.

## 26 Delay in setting up of engine test facilities

**Naval authorities failed to commission engine test facilities completed in March 1994 after a delay of five years at a cost of Rs 11.02 crore, as a result of which the repaired engines continued to be used without testing.**

Mention was made in paragraph 22.5.1 of Report No.9 of 1991 of the C&AG of India, Union Government (Defence Services - Air Force and Navy) for the year ended 31 March 1990 regarding delay in creating testing facilities for repaired engines.

Subsequent review of the project revealed that after completion of super structure of Large Engine Test House (LETH) and Small Engine Test House (SETH) and that of Heavy Internal Combustion Engine (HICE) shop in March 1990, allied facilities and systems for the test houses were completed only in March 1994 at a total cost of Rs 9.94 crore against the sanctioned amount of Rs 8.67 crore. However, a vital test equipment costing Rs 1.08 crore required for testing of engines, though installed in LETH in December 1994, was not commissioned by the supplier as of January 1996 due to failure of Naval authorities in arranging an engine of requisite capacity for its testing. As a result, the engines repaired by Naval Dockyard were being used without ensuring their operational fitness. Meanwhile, the warranty of the equipment costing Rs 1.08 crore expired.

Thus, the facilities for testing of engines after repairs envisaged for creation by March 1989, were yet to be commissioned even after an investment of Rs 11.02 crore and the repaired engines continued to be used without testing.

The matter was referred to the Ministry in June 1996; their reply was awaited as of December 1996 despite reminders.

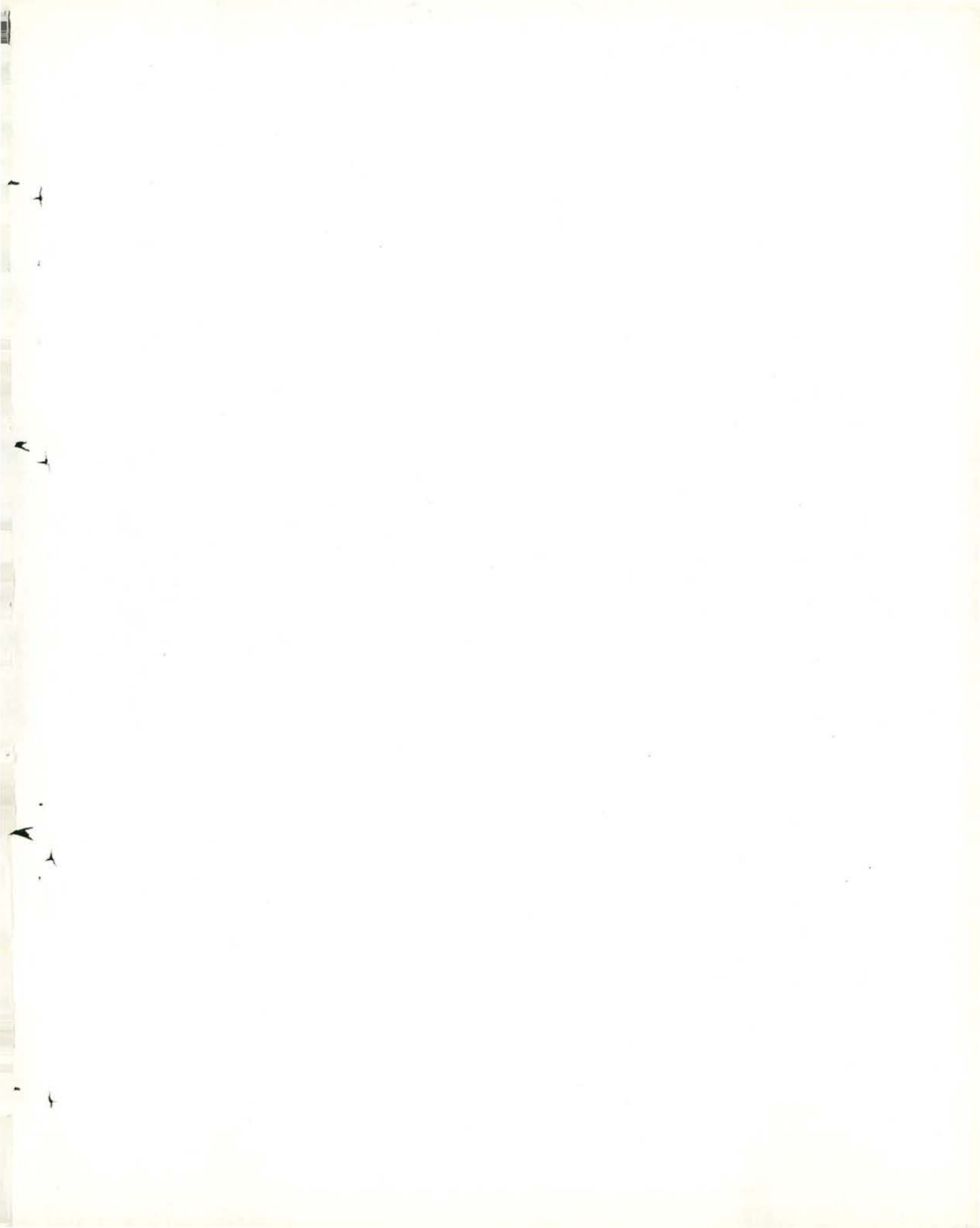
## 27 Avoidable loss due to delay in preferring railway claim

**Failure of Naval Store Depot (NSD), Kochi to prefer claim against the Railways in time resulted in loss of Rs 15.23 lakh.**

Material Organisation, Visakhapatnam despatched a consignment of four packages by rail to NSD, Kochi. As only three packages were received by NSD on 04 January 1992, it raised on 09 June 1992 a formal claim for Rs 15.23 lakh on the Railways for non-receipt of one package which was stated to have been received by the Railways on 25 June 1992. The Railways rejected the claim in July 1992 on the ground that the claim was barred by limitation by one day. Further pursuit with the Railways did not yield any result. Consequently, NSD initiated in March 1996 regularisation of the loss of Rs 15.23 lakh which was awaiting finalisation as of May 1996.

Thus, eventhough non-receipt of one package was known to the Naval authorities as early as in January 1992, they took about five months to prefer the claim which led to its rejection on technical grounds leading to an avoidable loss of Rs 15.23 lakh.

The matter was referred to the Ministry in June 1996; their reply was awaited as of December 1996 despite reminders.



## CHAPTER V

### COAST GUARD

#### 28 Leasing of aircraft

**The Coast Guard suffered operational limitations for want of dedicated aircraft for medium range surveillance. On account of a decision to purchase an old aircraft, Rs 1.20 crore paid to IA remained unfruitful.**

Mention was made in paragraph 6.5 of Report No.15 of 1989 of the C&AG of India, Ministry of Defence, Coast Guard for the year ended 31 March 1988 about non-exercise of option to make outright purchase of two F-27 aircraft at a unit cost of Rs 0.75 crore. Instead, the two aircraft were taken on dry lease and an amount of Rs 4.32 crore was paid to IA from May 1983 to October 1988. The reason advanced by the Coast Guard was that infrastructure for only two aircraft would have to be created for maintenance and logistic support. In their ATN, the Ministry stated, in December 1990 that the lease had to be extended from time to time for meeting operational requirements as permanent induction of a second hand aircraft in the Coast Guard was not considered desirable.

As the aircraft were very old and mandatory modifications were not carried out, DGCA did not permit the aircraft to fly beyond December 1993 and consequently, the dry lease was terminated in the same month. A total amount of Rs 5.12 crore towards lease charges was paid to IA for the period November 1988 to December 1993. The Coast Guard proposed outright purchase of one of the aircraft but the Ministry insisted that the aircraft must be airworthy before its acquisition. IA agreed, in March 1995, to sell one aircraft at a cost of Rs 2.40 crore after carrying out necessary repair/modifications and demanded Rs 1.20 crore as advance. Against the sanction accorded in June 1995, an order was placed in October 1995 for delivery of the aircraft by March 1996 and an advance of Rs 1.20 crore was paid to IA in December 1995. IA failed to deliver the aircraft due to non-receipt of certification for their technical personnel and workshop facilities from DGCA for commencing major inspection on aircraft. Due to undue delay, the Coast Guard reversed their stand in July 1996 and proposed cancellation of the purchase order as the possibility of making the aircraft airworthy was remote in view of its poor material state. After obtaining the Ministry's concurrence, the order was cancelled in August 1996 and IA was requested to refund the advance paid in December 1995. However, the amount of advance was yet to be refunded (October 1996).

It was also noticed that during the period of lease, the aircraft was operated by a Coast Guard air squadron formed exclusively for the purpose with the complement of 11 officers and 51 sailors/civilians. In the absence of any dedicated aircraft in the Coast Guard for medium range surveillance duties since December 1993, the utilisation of the exclusively formed squadron remained sub-optimal.

The Ministry stated, in October 1996, that in the absence of a dedicated aircraft for medium range surveillance, only limited coastal surveillance could be carried out by positioning a Dornier aircraft. It admitted that this had resulted in shortfalls in air surveillance of the area.

Thus, the Coast Guard suffered operational limitations for want of a dedicated aircraft for medium range surveillance. The utilisation of the squadron exclusively formed for the purpose largely remained sub-optimal for want of dedicated aircraft. The decision to purchase the old aircraft was ill conceived and the advance of Rs 1.20 crore paid to IA in December 1995 was yet to be recovered as of October 1996.

## **29 Wasteful investment on construction of jetty**

**An investment of Rs 32.34 lakh made in the construction of a jetty proved wasteful as the jetty was structurally unsafe for operational use.**

Director General, Coast Guard sanctioned, in November 1990, construction of a wooden jetty at a station for a cost of Rs 32.34 lakh. The work was to be executed by Tamil Nadu Port Department as a deposit work on behalf of MES for which payment totalling Rs 32.34 lakh was made in stages upto March 1992. On completion of the work, a joint inspection of the jetty carried out in July 1992 by MES, users and Tamil Nadu Port Department, revealed certain defects and use of sub-standard material. Although Tamil Nadu Port Department was immediately asked to rectify the defects, these remained unattended.

A Board, convened in February 1995 for handing/taking over of the jetty, found the same structurally unsafe as 90 *per cent* of the vertical piles had dangerously deteriorated due to action of sea waves and marine borers. It was also noted that the quality of wood used was sub-standard. The Board recommended the replacement of wooden piles and rectification of other defects to bring the jetty to the designed standard and specifications. While agreeing to rectify the other defects, Tamil Nadu Port Department expressed their inability to replace/rectify the defective wooden piles. The Board suggested that Coast Guard Administration should take up the matter with Tamil Nadu Port officer. However, no progress in replacement and rectification work has been



made as of March 1996. MES stated, in April 1996, that the jetty was being taken over in "as is where is" condition as directed by Coast Guard in November 1995.

Thus, reluctance of Tamil Nadu Port Department to replace the wodden piles/rectify the defects of the jetty constructed with sub-standard material resulted in a wasteful investment of Rs 32.34 lakh.

The matter was referred to the Ministry in June 1996; their reply was awaited as of December 1996 despite reminders.



## CHAPTER VI

### RESEARCH AND DEVELOPMENT ORGANISATION

#### Review

#### 30 Design and development of pilotless target aircraft

##### 30.1 Introduction

In order to provide realistic airborne targets for training air and ground crews in air-to-air and surface-to-air weaponry, Government sanctioned in September 1980 design and development of Inter-Services pilotless target aircraft (PTA) and its engine (PTAE) for meeting future requirements of the Services. As will be revealed in the discussions to follow, the development of the PTA was plagued by deficiencies, the development of its engine was yet to complete important milestones. Till date (December 1996), this training requirement has been met either by importing the PTA or by adopting conventional methods.

##### 30.2 Scope of Audit

The delay in development of the PTA, consequential cost overrun and its impact on training efforts of the Services was commented upon in paragraph 46 of Report No.3 of 1989 of the C&AG of India, Union Government, (Defence Services - Air Force and Navy) for the year ended 31 March 1988. In their ATN, the Ministry had stated, in June 1990, that suitable measures had been instituted to monitor/review the project for its timely completion. As the project has been closed in June 1994, it has again been reviewed in its totality.

##### 30.3 Highlights

- **The development of PTA sanctioned in September 1980 at a total cost of Rs 17 crore by ADE, was delayed by more than eight years. The project was completed in June 1994 at a cost of Rs 26.21 crore. However, it did not meet the Inter-Services Qualitative Requirements (ISQRs) in full.**
- **The delay in development not only compelled the Services to import PTA valuing Rs 23.42 crore, but also defeated the objective of**

providing the Services with PTA necessitating dependence on conventional method of training.

- Failure of HAL to develop PTAE, sanctioned at a cost of Rs 4.50 crore simultaneously with PTA for completion by September 1985 led to import of 14 engines at a cost of Rs 6.57 crore to power the PTA under limited series production, inspite of an investment of Rs 9.22 crore on its development.
- Despite the reservation of the Air Force and the Navy on the performance of the prototypes, the Ministry sanctioned production of ten PTA in May 1994 and March 1995 and paid Rs 18.76 crore to ADE in advance. However, no PTA has yet been produced.
- An amount of Rs 4.39 crore chargeable to PTA project had not been taken into account while computing the project cost.

#### **30.4 Need for PTA**

Training of pilots in air-to-air weaponry and target practice of surface-to-air missile batteries and guns is a regular peace-time drill of all the three services. In such training, certain amount of live firing practice is essential against realistic targets for proper perception of actual threat parameters likely to be encountered. For this, use of recoverable PTA with towed sub-targets had long been considered the most cost effective option. The PTA was also required for evaluation/ development trials of new surface-to-air and air-to-air weapon systems. As such, need to develop PTA indigenously was recognised in May 1976 and an ISQR common to the three Services was formulated and 35 ISQR points identified. Subsequently, based on a feasibility study carried out by ADE, the project for the design and development of PTA by ADE was sanctioned in September 1980 at a cost of Rs 17 crore (FE Rs 8 crore). A separate project for the design and development of a small gas turbine engine (PTAE) to power the PTA was also sanctioned at a cost of Rs 4.5 crore (FE Rs one crore). This engine was to be developed by HAL by September 1985, concurrently with the PTA.

#### **30.5 Development of PTA**

The project was based on the assumption that the annual requirement of PTA would be around 85 (60 for the Army, 16 for the Air Force and 9 for the Navy) and unit cost of PTA was assessed in 1980 at Rs 12 lakh. An annual saving of Rs 11 to 12 crore in FE was envisaged after productionisation of the PTA. ADE was to

manufacture 20 PTA prototypes by September 1985 to carry out flight tests for proving the design and user evaluation trials to facilitate an early decision by the Services on the quantum of production. For powering the prototypes, a contract was concluded in November 1980 with a foreign firm for procurement of 20 aeroengines at a cost of Rs 1.13 crore. The engines were received between May 1982 and December 1983.

Between December 1985 and July 1986, four PTA prototypes powered by imported engines were launched for trials. While the first two launches were successful for planned flight times of 20 and 38 minutes respectively, the next two launches failed. Even in the successful launches, the recovery systems failed to operate, necessitating a detailed investigation to establish the causes of failures. These shortcomings evidently contributed to delays in the execution of the PTA project, which were mainly attributable to technical problems leading to design changes. In developing PTAE also, there was serious delay attributable to excessive rotor vibration and failure of turbine blades.

The time-frame for the completion of the PTA project was, thus, extended upto September 1988 by the Ministry and the cost of the project was also revised from Rs 17 crore to Rs 19.55 crore in December 1987. Since the PTA could not be developed for user trials within the extended time, the Ministry approached CCPA in April 1990 for revision of the total cost of PTA project to Rs 21.84 crore (FE Rs 9.25 crore) and extension of time to March 1991. While processing the proposal for consideration by CCPA, the Secretary (Expenditure) expressed serious concern about the enormous time over-run on account of "either excessive optimism at the initial project formulation stage and sweeping under the carpet the likely teething troubles in R&D project of this type or inefficiencies at the implementation stage". The proposal was approved by the Prime Minister in March 1990, subject to fixation of responsibility for the enormous delay. The project could, however, not be completed even by the date extended for the second time.

Against the planned 20 prototypes, ADE fabricated 18 by June 1994 and conducted 43 trials of which 24 were conducted between December 1985 and February 1992. During trials, it was noticed that out of 35 ISQR points, only 26 were demonstrated in full, five were partially demonstrated and four could not be demonstrated. The Ministry stated, in December 1996, that a high level steering committee (HLSC) constituted to monitor the progress of PTA project concluded (June 1994) that "based on the results achieved in flight trials and grounds tests, PTA may be considered to have met all the major design objectives". The Committee also decided to clear the PTA for limited series production using imported engines to meet the immediate requirement of the Services. A decision was also taken to close the development project.

The PTA project was formally closed in June 1994 and a final closure report was issued in April 1995 after incurring a total expenditure of Rs 21.82 crore (including liability of Rs 0.13 crore) against a sanctioned amount of Rs 21.84 crore. It has, however, come to the notice of Audit that the cost of the project has not been correctly drawn as the salary and allowances of scientists and staff engaged in development of PTA was not found to have been charged to the project after March 1988. Calculations show that on this account, an additional amount of Rs 2.87 crore should have been booked to the PTA project. Further, a liability of Rs 1.52 crore towards the procurement of tow bodies and pylons from HAL had also not been taken into consideration in calculating the total project cost before closing it. Had the project cost been reflected accordingly, it would have exceeded the sanctioned amount by Rs 4.37 crore for which fresh Government sanction would have been necessary. Accepting the facts, the Ministry stated, in December 1996, that the final action in this aspect was yet to be completed.

The delay in development of PTA would have adversely affected the training need of the Services, had it not been met either by import or by adopting conventional methods.

### **30.6 Loss of PTA Prototypes**

During trials conducted between 1985 and 1990, ten PTA prototypes were lost mainly due to malfunction of the recovery system. Of these, nine prototypes were lost along with their engines. While cost of procurement of the engines was Rs 50.85 lakh, the cost of the prototypes lost in trials could not be ascertained. Admitting the facts, the Ministry stated that it was not possible to assess the actual cost of fabrication of prototypes as the cost of in house fabrication and testing had not been logged. It added that the PTA and engines lost/expended, were charged off as per existing procedure and regularised.

### **30.7 Development of PTAE**

Development of PTAE at a cost of Rs 4.50 crore was to be progressed concurrently with the PTA as its successful development and productionisation would have obviated the need for import of engines. The annual requirement was estimated at approximately 100 engines. HAL was to produce by September 1985 six prototype engines besides spares equivalent to two additional prototype engines. There had, however, been abnormal delays on account of excessive rotor vibration and failure of turbine blades necessitating design change. At the instance of HAL, the Ministry enhanced the project cost twice between September 1986 and March 1990. After the last revision of the project cost to Rs 7.40 crore, the Ministry again sought to enhance the same in April 1990 to Rs 9.22 crore. The time of completion of the project was simultaneously sought to be extended to December 1990 with the approval of CCPA.

The reasons advanced for the cost enhancement and extension of time were that five more prototypes of PTAE were to be constructed with a modified design in addition to the four prototypes produced upto April 1990. Accordingly, sanction of Government was issued in June 1990.

HAL failed to complete the project even by the extended date. Finally, in June 1994, only one engine developed by HAL was delivered to ADE for flight trials but during trials conducted in May 1995, the engine failed. HAL stated, in June 1996, that two more engines with uprated performance were planned to be test flown in August-September 1996 and type certification of the engine was planned to be completed by March 1997. It was, however, noticed that the entire amount sanctioned for development of PTAE viz., Rs 9.22 crore had been paid by the Ministry in advance to HAL between August 1981 and January 1991.

As a result of delay in development of PTAE, 14 engines had to be imported between May 1995 and February 1996 at a cost of Rs 6.57 crore for limited series production of the PTA discussed in paragraph 30.8 (infra). Admitting the fact, the Ministry stated, in December 1996, that since PTAE was yet to complete important milestones, it was decided in June 1994 not to plan the limited series production with PTAE.

### **30.8 Production of PTA**

Between December 1985 and February 1992, 24 trials were conducted in which 10 prototypes were lost. In the HLSC meeting held in February 1992, the Army expressed reservations regarding the performance of PTA particularly in relation to land recovery and the re-launch life which were yet to be demonstrated in trials. The Air Force and the Navy stated that performance requirements as stated by users, must be met even by the PTA proposed to be productionised in limited series production.

At the time of conceptualising the PTA project, it was envisaged that development of PTA would be undertaken by ADE while the series production after successful development would be entrusted to HAL. As the Air Force and the Navy required PTA urgently, the Ministry decided in May 1994 and March 1995 that 10 PTA would be produced (five each for the Air Force and the Navy) by ADE itself and not by HAL at a total cost of Rs 28.86 crore even though the annual requirement of the Air Force was 16 and that of the Navy was nine. The Ministry explained in December 1996, that the rationale to launch the limited series production was two fold; (a) to meet the urgent limited requirements of the Air Force and the Navy and (b) to facilitate smooth transfer of technology to the production agency with the least infrastructural investment.

Accordingly, production schedule and payment terms were finalised amongst ADE, the Air Force and the Navy in June 1995 and December 1995 respectively for the limited series production. One PTA was to be delivered to the Air Force in June 1996 and the balance at the rate of two each in August and December 1996. In case of the Navy, all the PTA were to be delivered between August and December 1997. It was noticed in audit that although the PTA due to be delivered to the Air Force in June 1996 had not been delivered but a total advance of Rs 11.54 crore had been paid to ADE by the Air Force between October 1994 and June 1995. An advance of Rs 7.22 crore was also paid by the Navy in November 1995 for production of the PTA in limited numbers. Thus, against the total sanctioned amount of Rs 28.86 crore for 10 PTA, an amount of Rs 18.76 crore was paid to ADE between October 1994 and November 1995.

In February 1995, Army HQ pointed out that the land recovery and the re-launch life were yet to be demonstrated in full and hence the usefulness of the PTA could not be assessed. On account of this inability, no orders for even the limited series production of the PTA had been placed by them on ADE as of September 1996. The Ministry stated, in December 1996, that the position outlined above was incorrect without pointing out specific mistakes. It only indicated the latest position which shows that Government have sanctioned procurement of five PTA for the Army in May 1996 but no formal order was placed till December 1996.

Air HQ also stated, in July 1995, that PTA in its present state of development did not meet the ISQR in its entirety and, therefore, it would be necessary to evaluate its full potential in the Services before taking a decision on placing further orders.

It was also noticed that the cost of the PTA under the limited series production had gone up considerably and as of May 1994 it stood at Rs 1.10 crore (FE Rs 57.84 lakh) excluding the cost of manpower and infrastructure utilised. Considering the cost of indigenous PTA which did not fully meet the ISQRs as revealed by the conclusion in the closure report, it does not appear feasible that full scale production of PTA as originally planned can be undertaken at an early date. Moreover, as the project had been closed in June 1994, it was not clear as to how the shortcomings of the PTA so far developed by ADE, would be rectified. The Ministry stated, in December 1996, that ADE would continue to be associated with the Services during the user evaluation of PTA under the limited series production and support them through improvements and upgrades.

### **30.9 Fruits of Research**

The PTA and the PTAE projects, as has already been pointed out, were undertaken to reduce the drain on FE and dependence on imported equipment. The PTA project commenced from September 1980 and was closed in June 1994 but the



PTAE, which was started simultaneously, has not yet been closed. The findings of Audit given above show that while the PTA developed by ADE in 14 years was deficient in certain major ISQRs, HAL had not been able to successfully develop the PTAE even after 11 years of the scheduled date of completion.

The total cost incurred on PTA is Rs 21.82 crore and on PTAE Rs 9.22 crore. The cost not taken into account of the project as pointed out in paragraph 30.5 (supra) was Rs 4.39 crore. The total expenditure on development of PTA and PTAE thus works out to Rs 35.43 crore. As the expected benefits have not accrued up to December 1996 from this investment on research and development to the three Services for meeting their training needs, Government had to spend a total amount of Rs 23.42 crore in FE on importation of 25 PTA between December 1985 and March 1995 in addition to resorting to conventional methods of training. Successful development of PTA as initially planned and projected would have avoided this out go of foreign exchange.

The Ministry stated, in December 1996, that "various activities connected with execution of project had lot of pitfalls due to technical problems involved in a product of the type being developed for the first time in the country and over-optimistic projections. In addition to financial constraints, as the projections made were based on data available at that point of time which needed improvement and refinement with the progress of the project, it had resulted in periodical stoppage of work contributing to delay in execution of various activities of the project". The Ministry further stated that till such time the indigenous PTA is inducted(1996-97), the Services would be utilising a mix of imported PTA and tow targets deployed from manned aircraft. It may be reiterated that the project was launched with the main objective of reducing the drain of FE and providing the users with unmanned target. According to the Ministry's own admission, neither of this objectives could be fully achieved as of December 1996.

## **Other Cases**

### **31 Delay in commissioning of an imported equipment**

**Failure of the Ministry/Programme authorities to appreciate the complexity of a development programme resulted in non-utilisation of an equipment worth Rs 1.98 crore imported in May 1990.**

Against a development programme of Navy sanctioned by the Ministry in June 1984, the Programme authorities concluded a contract in March 1989 with a foreign firm for procurement and installation of an equipment at a cost of Rs 1.98 crore. The equipment received in May 1990, however, was not installed since the associated activities had not been completed. The warranty of the equipment which

expired in November 1991, was extended upto March 1994 on payment of Rs 5.42 lakh demanded by the firm expecting that the equipment would be commissioned by mid 1993.

The equipment though installed in July 1992, was not commissioned as of September 1996. The Ministry stated, in October 1996, that the development programme was taken up for the first time and the equipment could not be commissioned due to certain design changes necessitating wide range modifications to associated equipment required for its commissioning. The Ministry added that the equipment was expected to be commissioned by October 1996 and that the trials were expected to be completed by mid 1997.

The Ministry/Programme authorities, thus, failed to fully appreciate the complexity of the development programme and make a realistic assessment of time and efforts involved to complete it. As a result, the equipment imported in May 1990 at a cost of Rs 1.98 crore was yet to be commissioned and utilised. The amount of Rs 5.42 lakh paid for extension of warranty also proved infructuous.

New Delhi

Dated

11 MAR 1997



( V.SRIKANTAN )

Additional Deputy Comptroller and Auditor General

Countersigned



( V.K.SHUNGLU )

Comptroller and Auditor General of India

New Delhi

Dated

13 MAR 1997

## ANNEXURE - I

( Referred to in Paragraph 4)

### Position of ATNs outstanding for more than one year (as of December 1996)

Sl. No.	Report No. and Year	Chapter of the Report	Para No.	Pertains to	Brief Subject	Remarks
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1.	9 of 1993	IV	27	Navy	Unauthorised use of Government building for running Naval Public Schools	Final ATN awaited(vetting comments of Audit were sent to the Ministry on
2.	9 of 1993	IV	37	Navy	Avoidable expenditure in the construction of submarine	Final ATN awaited
3.	9 of 1993	IV	38	Navy	Unauthorised provision of residential telephone	ATN not received
4.	9 of 1993	IV	43	Navy	Delay in commissioning of liquid nitrogen plant	Final ATN awaited
5.	9 of 1994	IV	23	Navy	Procurement of time fuzes without detonators	Final ATN awaited
6.	9 of 1994	IV	25	Navy	Procurement of soot blowers	Final ATN awaited
7.	9 of 1994	IV	29	Navy	Avoidable expenditure in hiring of a generator	ATN not received

8.	9 of 1994	VI	35	Navy	Avoidable expenditure in the hiring of buildings for a project	Final ATN awaited
9.	9 of 1995	II	3	(MOD) Navy	Unauthorised funding of a project	ATN not received
10.	9 of 1995	IV	15	Navy	Naval Air Stations	ATN not received
11.	9 of 1995	IV	16	Navy	Naval Yardcraft	Final ATN awaited
12.	9 of 1995	IV	17	Navy	Working of Foreign Procurement Cell in Naval Headquarters	Final ATN awaited
13.	9 of 1995	IV	18	Navy	Idle investment on manufacture of gas turbine	Final ATN awaited
14.	9 of 1995	IV	19	Navy	Excess expenditure over sanctioned cost	Final ATN awaited
15.	9 of 1995	IV	20	Navy	Delay in construction of a dry dock	ATN not received
16.	9 of 1995	IV	22	Navy	Delay in modification of a slipway	ATN not received
17.	9 of 1995	IV	25	Navy	Extra expenditure on procurement of transmitters	Final ATN awaited
18.	9 of 1995	IV	26	Navy	Excessive procurement of valves and fittings	Final ATN awaited
19.	9 of 1995	IV	27	Navy	Extra payments on power consumption	ATN not received

20.	9 of 1995	IV	30	Navy	Delay in induction of a life saving equipment	Final ATN awaited
21.	9 of 1995	VI	35	R&D Org	Irregular expen- diture	ATN not received

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## ANNEXURE - II

( Referred to in Paragraph 4))

### Position of ATNs outstanding for less than one year (as of December 1996)

Sl. No.	Report No. and Year	Chapter of the Report	Para No.	Pertains to	Brief Subject	Remarks
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1.	9 of 1996	II	3	MOD	Avoidable expenditure due to incorrect claims	ATN not received
2.	9 of 1996	II	4	MOD	Follow up on Audit Reports	ATN not received
3.	9 of 1996	III	5	Air Force	Recruitment and training of Airmen	Final ATN awaited
4.	9 of 1996	III	7	Air Force	Delay in establishment of an aircraft base	Final ATN awaited
5.	9 of 1996	III	12	Air Force	Excess procurement of communication sets	Final ATN awaited
6.	9 of 1996	III	13	Air Force	Delay in computerisation of an Indian Air Force Command	ATN not received
7.	9 of 1996	III	14	Air Force	Irregular employment of local staff	Final ATN awaited
8.	9 of 1996	III	15	Air Force	Infructuous expenditure on acquisition of land	Final ATN awaited
9.	9 of 1996	III	16	Air Force	Procurement of unsuitable items	Final ATN awaited

10.	9 of 1996	III	17	Air Force	Losses due to delay in preferring claims	Final ATN awaited
11.	9 of 1996	IV	20	Navy	Review on the working of control-rate of procurement of Navy	Final ATN awaited
12.	9 of 1996	IV	22	Navy	Import of defective system	ATN not received
13.	9 of 1996	IV	23	Navy	Delay in manufacture of a tanker	ATN not received
14.	9 of 1996	IV	24	Navy	Delay in setting up of a missile complex	ATN not received
15.	9 of 1996	IV	25	Navy	Non-utilisation of a workshop	ATN not received
16.	9 of 1996	IV	26	Navy	Non-utilisation of a hangar	ATN not received
17.	9 of 1996	IV	27	Navy	Non-utilisation of a radar	ATN not received
18.	9 of 1996	IV	28	Navy	Un-authorized provision of ground	ATN not received
19.	9 of 1996	IV	29	Navy	Procurement of personel survival packs and dinghies	ATN not received
20.	9 of 1996	IV	30	Navy	Over provisioning and unnecessary procurement of spares	Final ATN awaited
21.	9 of 1996	IV	31	Navy	Avoidable expenditure	ATN not received
22.	9 of 1996	IV	32	Navy	Extra expenditure on procurement of steel plates	ATN not received
23.	9 of 1996	IV	33	Navy	Non-installation of training equipments	ATN not received



24.	9 of 1996	IV	34	Navy	Injudicious procurement of a machine	ATN not received
25.	9 of 1996	IV	35	Navy	Recovery at the instance of Audit	Final ATN awaited
26.	9 of 1996	V	36	Coast Guard	Delay in installation of communication equipment	ATN not received
27.	9 of 1996	V	37	Coast Guard	Loss due to improper storage	ATN not received
28.	9 of 1996	VI	38	R&D Org.	Working of Naval Research and Development Laboratories	ATN not received

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