



CHAPTER 4

Infrastructure, Assets and Logistics

4.1 Infrastructure and Assets

ICG infrastructure comprises of shore stations, air stations and air enclaves, whereas, the assets of ICG comprise of a wide range of ships, aircraft and associated equipment. Adequacy of infrastructure and assets is pivotal for ICG to effectively discharge its mandated role. The audit findings relating to ICG infrastructure and assets are discussed below:

4.1.1 Infrastructure

Indian Coast Guard Stations: The ICG has been establishing shore stations, air stations and air enclaves as per its Perspective Plan 1985-2000. Even in the absence of any approved Perspective Plan thereafter, additional stations and enclaves have been planned and sanctioned in the Xth and XIth Five Year Plans to augment ICG capability in effectively discharging its coastal security responsibilities.

The status of activation of these units is shown in the table:

7 Activation status of ICG stations

Plan	ICG Stations			
	PLANNED/ PROPOSED	SANCTIONED	ACTIVATED	
			Within Plan Period	After Plan Period
PERSPECTIVE PLAN (1985- 2000)	19#	19#	17#	1
X th PLAN (2002- 07)	6 3*	6 3*	5 Nil	Nil 2*
XI th PLAN (2007- 12)\$	14@	14@	5	Nil
TOTAL	42	42	27	3

Includes 6 ICG stations sanctioned/activated prior to Perspective Plan (1985 – 2000) also.

* MHA funded stations.

\$ Indicates position as of December 2010.

@ Includes 7 ICG stations sanctioned by Cabinet Committee on Security under Coastal Security Plan.

By the end of the Xth plan period (2002-07), even though ICG had activated 23 coast guard stations, a large number of these stations continued to function with infrastructural/fleet deficiencies. These deficiencies are yet to be made good as of December 2010 at most of the stations. Post 26/11¹ incident, the Government sanctioned 14 new stations in a span of 18 months (between June 2009 and November 2010). However, only five² have been activated till December 2010.

These activated stations also suffer from various problems. The deficiencies in respect of stations activated prior to 26/11 and thereafter are discussed below:

- The ICG District Headquarters at Diglipur, Andaman and Nicobar Islands, activated in 1987, is a forward operational base and the only defence establishment in North Andaman since inception. Despite its strategic importance, the unit had been functioning without any boat and crew till July 2006. For 19 years, the unit was

¹ On 26th November 2008, there were more than ten coordinated shooting and bombing attacks by terrorists across Mumbai. It was alleged that the terrorists had used the sea route to enter Indian Territory

² ICG Station Karwar, Gandhi Nagar, Hutbay, Minicoy and Ratnagiri

carrying out its task using hired dinghies. Its first operational asset, i.e. one Rigid Inflatable Boat (RIB) was positioned in July 2006 and a motorised boat in October 2007 respectively.

- The District Headquarters at Campbell Bay in Andaman and Nicobar Islands, operational since May 1985, were provided with one RIB and one motorised boat in July 2006 and October 2007 respectively, after a gap of 20 years.
- Some of the Coast Guard stations like New Mangalore, Campbell Bay, Diglipur, Kochi, Mumbai, Ratnagiri, Murud Janjira, Karwar, Vizhinjam, Kavaratti, Goa, Mlnicoy, Okha, Puducherry, Hut Bay and Beypore do not have basic facilities like Jetties for berthing ships, fuelling facilities etc. ICG is dependent upon other agencies for use of their services.
- ICG has a fleet of six Air Cushion Vehicles³ (ACVs) based at Haldia, Mandapam and Okha. However, required infrastructure such as berthing facility, hangar, repair / maintenance facility are not available.
- ICGS Kamorta in the Andaman and Nicobar Islands, though planned in the 1985-2000 Perspective Plan, was sanctioned only in November 2010. The land allotted by local administration in 1985 is still not identified. Government also transferred naval land in 1993, which is under dispute with tribals since 2004. ICG plans to activate the station using Porta cabins on ALHW⁴ land as a temporary measure. The manpower, however, was sanctioned for ICG station 14 year's earlier in 1996.
- The manpower for ICGS Pipavav, Gujarat was sanctioned in January 2006, while the station was sanctioned only in November 2010. The station was yet to be activated as of December 2010 as ICG is in the process of land acquisition for the station.

³ These are fast reacting high-speed (45 Knots) craft capable of all weather operation. These craft can operate at sea, through creeks, estuaries and marshy patches, which are often covered with navigational hazards.

⁴ Andaman & Lakshadweep Harbour Works

Aviation Units: The performance of Indian Coast Guard in so far as activation of Aviation Units is indicated below:

8 Activation status of Aviation Units

PLAN	ICG AIR STATIONS/ ENCLAVES			
	PLANNED	SANCTIONED	ACTIVATED	
			Within Plan Period	After Plan Period
PERSPECTIVE PLAN (1985-2000)	11#	9	5	3
X th PLAN (2002-07)	1	1	Nil	Nil
XI th PLAN (2007-12)@	5	4	Nil	Nil
TOTAL	15	14	5	3

Two Aviation units dropped subsequently.

@ Position as of December 2010.

Audit observed that:

- Only eight aviation units out of the 15 planned were activated.
- Five ICG Aviation units⁵ are running without any Government approved Unit Establishment (UE). They have been created by Director General Coast Guard under his delegated powers. In the absence of a government approved UE, these Aviation units are performing their roles by utilising the assets re-appropriated from other Aviation units, thereby, impacting the operational needs of Aviation units whose assets were re-appropriated. As such, these five Aviation units are performing their roles with skeletal assets.
- ICG air enclave at Port Blair does not have any hangar with the result that aircrafts are parked in the open resulting in their exposure to the vagaries of weather and resultant technical snags.

Thus, infrastructure has not been established either in a timely manner or functions without associated manpower / equipment. Besides, supporting systems had failed to deliver required functionality, thus, affecting the operational capabilities of the Indian Coast Guard.

⁵ No. 747 Squadron, Vajra, Kochi and Porbander Dornier Flight and Porbander Chetak Flight

4.1.2 Assets

4.1.2.1 Introduction

The Indian Coast Guard's operational capabilities are reflected in a wide range of ships, aircraft and associated equipment which are required for the Coast Guard to perform its tasks and respond successfully to unforeseen and emergent situations. Force levels are important, both in terms of numbers as well as technology, since the Coast Guard is responsible for 2.01 million sq km of sea area over which India claims exclusive rights for exploration and exploitation of resources, both living and non-living.



Inshore Patrol Vessel at Sea

The ICG requires patrol vessels of different types, interceptor boats and crafts, pollution control vessels and hovercrafts for its sea-based activities. Its aviation wing requires fixed wing aircraft as well as rotary wing helicopters for its reconnaissance, surveillance, logistics, search and rescue missions etc. Equipment includes gunnery equipment, radars, other communication equipment and pollution control equipment which are essential for performing the operational roles of ships and aircrafts.



An Offshore Patrol Vessel at sea

4.1.2.2 Shortfall in Assets

Review by Audit revealed non-achievement of planned acquisitions has resulted in the Coast Guard operating at considerably lower strength of ships and aircraft *vis a vis* its required strength. Compared to the force levels of 122 vessels envisaged in the Perspective Plan for the period 1985-2000, the Indian Coast Guard, as on date (December 2010), possesses only 65 *per cent* of the required force level in terms of ships and vessels. With respect to the aviation arm, the corresponding figure is 48 *per cent*. As of December 2010, the ICG has not processed the cases for acquisition of Deep Sea Patrol Vessels (DSPVs), Medium Patrol Vessel (MPVs) and Aerostats, even though they were envisaged in the Perspective Plan (1985 – 2000).

Although new projects have been sanctioned during the XIth Plan and projects pertaining to previous Plans will be completed during this period, taking into account the planned decommissioning of ships, it would be difficult for the ICG to achieve the Perspective Plan (1985-2000) force levels even by 2012 i.e by the end of XIth Plan. The deficiency would be to the extent of 17 *per cent* and 45 *per cent* in respect of vessels and aircrafts respectively as depicted in the table.

9 Actual and expected force levels and shortages

Type of vessel / aircraft	Force Level as per ICGPP 1985-2000	Present Force Level (December 2010)	Present (December 2010) %age Shortage vis a vis 1985-2000 plan	Force Level as on March 2012 after expected receipts and planned decommissioning of ships	%age Shortage in March 2012 vis a vis 1985-2000 plan
SHIPS					
DSPV/MPV	12	-	100%	-	100%
AOPV/OPV	24	15*	38%	15	38%
FPV/IPV	36	28	22%	34	6%
ACV	6	6	--	6	-
PCV	6	1	83%	3	50%
IB	30	19**	37%	25+7#	17%
IC	8	10	--	18	-
Total	122	79	35%	101	17%
AIRCRAFT					
Chetak	36	18	50%	20	44%
Dornier	36	24	33%	28	22%
ALH	12	4	67%	4	67%
MRSA	9	-	100%	-	100%
Aerostats	2	-	100%	-	100%
Total	95	46	52%	52	45%

* Excludes 2 OPVs on lease with Sri Lankan Navy.

** Excludes 1 IB on lease with Mauritius Navy.

7 MHA funded.

The shortages have translated into corresponding gaps in the operational capabilities of individual Coast Guard stations. A test check with reference to availability of Interceptor Boats (IB) / Crafts (IC) at six stations revealed that in three stations as of December 2010, the stations did not have the vessels in adequate strength.

10 Shortfalls in Requirement of Assets

Station	Requirement of Interceptor Boat / Craft	Availability
Mandapam	5 IC	1 IC
Kakinada	1 or 2 IB 2 IC	1 IB and 1 IPV NIL
Vizhinjam	2 IB	1 IB

In case of Mandapam the availability of crafts was only 20 *per cent* of the requirement. The situation was aggravated at times when the available vessels were undergoing refit or repairs.

Audit scrutiny revealed that significant shortfalls with regard to projected requirements for ships and aircraft existed even as Coast Guard acquisitions have been dogged by time over-runs.

4.1.2.3 Replacement of vessels

Timely replacement of old and ageing vessels is essential to any Armed Force so that the vessels and platforms are available for exploitation optimally for fulfilling designated roles. The replacement of vessels depends upon the assessed life of the platform after examining its various aspects including the material, equipment and sensor state. The ICG is functioning with ships which have outlived their prescribed life and should have been decommissioned but which have not been phased-out as replacements have not materialised. Details of the age of the fleet are given below:

11 Age of fleet

(Position as of December 2010)
(All figures in numbers and percentages are given in the brackets)

Class of Ship	No. Of Vessels	ON EXTENDED LIFE	EXTENDED LIFE EXPIRED
AOPV/ OPV	15	6 (40)	1 (7)
FPV / IPV	28	10 (36)	10 (36)
IB	19	6 (32)	1 (5)

As brought out above, 72 per cent of FPV / IPV's, 47 per cent of AOPV/ OPV's and 37 per cent of IB's are either on extended life or their extended life has also expired.

The present status of ships due for decommissioning and their contracted replacement is given as under.

12 Delays in Replacement of Vessels due for Decommissioning

SHIP	No. Of Vessels due for decommissioning	Original decommissioning period	Revised decommissioning period	Contract For Replacement	Expected / Actual Date of Delivery
AOPV/OPV	3	2003 to 2006	2010 to 2012	February 2006	February 20 10 to November 20 11
FPV / IPV	13 [#]	1999 to 2005	2008 to 2013	Only for 08 in March 2009 [@]	September 2011 to June 2013
	4	2006 to 2008	2012	October 2010	June 2012 to March 2013
IB	1	1997	2008 [^]	March 2006	March 2012
	7	2008 to 2011	2012 to 2015	March 2010	September 2011 to March 2013

[#] Four though due during 2006 to 2008, have been extended up to 2012. However, the contract is yet to be planned.

[@] Contract for remaining five proposed in January 2011.

[^] Yet to be decommissioned.

The table above indicates that:

- Three OPVs⁶ meant to be decommissioned in 2003, 2005 and 2006 remain in force as the contract for their replacement was signed only in February 2006 and the replacements are expected between February 2010 and November 2011 only, i.e 5-6 years after these vessels were due for decommissioning.
- 13 IPV's were to be decommissioned between 1998 and 2006. However, approval of Defence Acquisition Council for Acceptance of Necessity was obtained only in August 2006. The contract has been concluded in March 2009 and the first vessel is expected to be

⁶ ICGS Vikram, Vijaya and Veera

delivered by August 2011 only, i.e 12 years after the first vessel was due for decommissioning. Thus, ICG will be dependent upon the aging fleet.

- Replacement contracts for FPV and IBs were also concluded much after the due decommissioning period.

4.1.2.4 Availability and deployment of vessels

The operational-cum-refit cycle, promulgated in 1993 for the AOPV/OPV and FPV/IPV/SDB class of vessels, implies that ships have to be operationally available for a certain number of days, out of which the ships have to be deployed at sea for roughly 50 *per cent* of the time. In the remaining period, ship should be operationally available in harbour for deployment as required. As per norms of 1993, the AOPV's have to be operationally available for 160-170 days per year with the required sea days being 80-85 per year. In 2004, the ICG issued directives raising the number of days required at sea to 120-144 per year for all classes of ships.



ICGS Advanced Offshore Patrol Vessel

Audit analysed the operational availability and sea deployment levels in terms of norms of 1993 and 2004 for the period 2003 to 2010 and observed the following:

Based on the 1993 norm, it was observed that the Coast Guard is maintaining the operational availability and sea deployment levels as prescribed on an average for almost all class of ships except in the case of the FPV / IPV / SDB where required days at sea fell short by about 42 *per cent* between 2003 and 2010. Accepting the facts, ICG attributed it to ageing of the ships which have outlived their operational life.

Based on the revised norms of 2004 the deployment and shortfalls for the period 2003 to 2010 are as under:

13 Shortfall in availability of vessels

Sl. No.	CLASS	AVERAGE NUMBER HELD	NUMBER OF DAYS REQUIRED ATSEA	NUMBER OF DAYS ACHIEVED AT SEA	PERCENTAGE SHORTFALL IN NUMBER OF DAYS REQUIRED AT SEA (range for period 2003-2010)*
1	AOPV / OPV	13	13,662	10,579	11 – 29
2	FPV / IPV /SDB	28	28,952	16,879	24 – 38
3	IB	14	14,916	7,494	26 – 64
4	ACV	6	23,250	13,303	18 – 64*

* Reflects position as of September/October 2010

ICG replied in November 2009 that the requirement of 80-85 days at sea per year for AOPV/OPV and 100-105 days at sea for IPV/FPV/SDB has been worked out to ensure that the ships are not over exploited and are operationally available as per plan. No reasons were furnished for the shortfall. In January 2010, CGHQ initially held that the policy of January 2004 regarding number of days at sea is in force. However, ICG in November 2010 did a volte face and stated that there is no change in policy of deployment of ships promulgated in 1993. The replies of CGHQ are contradictory as the directives of 2004 are in force and no proof was made available to audit that these have been rescinded.

Audit noted that there were abnormal delays in commissioning of new vessels which severely impacted the decommissioning schedule of the Indian Coast Guard. ICG would not be able to achieve the force levels envisaged in Perspective Plan (1985 -2000) even by the end of the XIth Plan in March 2012. This coupled with the fact that majority of the main vessels of ICG, viz. OPVs, FPV/IPVs and IB, are either functioning on extended life span or are already life expired and are due for decommissioning, ICG is not in a position to achieve the desired levels of operational deployment of vessels.

4.1.2.5 Serviceability of Aviation Arm

ICG has government sanction to operate four squadrons of Dornier, four squadrons of Chetak and one squadron of ALH. As high as 82 *per cent* of the Chetaks and 54 *per cent* of the Dorniers of Indian Coast Guard are more than 15 years old. This age profile compares unfavourably with the prescribed life of Chetak helicopters of 15 years and that of Dornier Aircraft at 20 - 25 years. Two squadrons of Dornier and all four squadrons of Chetak are operating fewer number of aircraft than the sanctioned Unit Establishment (Annexe 2), as ICG is operating five aviation units with re-appropriation of assets. Operational availability of Chetaks and Dorniers on an average was 84 and 78 *per cent* respectively during the audit period.



ICG Dornier Aircraft

In order to meet its requirements primarily for search and rescue role and afloat operation, Coast Guard Development Plan 1992-97 provided for acquisition of two twin engine helicopters for which the ICG identified the Advanced Light Helicopter (ALH). However, first ALH was delivered in March 2002 and second ALH was received in March 2003.



ICG Advanced Light Helicopter

Audit noted that the Indian Coast Guard concluded the contract only in March 2003 with Hindustan Aeronautics Limited (HAL) for the two ALH. Subsequently, a third and fourth ALH were received in March 2004 and March 2005 respectively without Government sanction and contract. The acceptance of the aircrafts before the signing of a formal contract was a deviation from the laid down norms and the Cabinet Committee on Security had also expressed displeasure on the shortcomings in the procurement process including release of on account payments by the Ministry of Defence without its approval.

The availability of the ALH was poor as they remained under evaluation since induction (2002-2005) till May 2009. Even during evaluation, their serviceability ranged from 21 to 40 *per cent* and the entire ALH fleet was grounded in November 2005 and flying re-started only in January 2007.

4.1.2.6 Onboard Equipment and Weaponry

The effectiveness of ICG operations is determined by the quality of the onboard equipment and weaponry. Audit test check of status of such equipment on-board some ships revealed significant areas of concern. Deficiencies in aviation equipment, weapons, arms, ammunitions and communication and electronic equipments is discussed below:

14 Deficiencies in Aviation Equipment

EQUIPMENT	ROLE	REMARKS (With limitations / not operational / under trial /not installed)
Advanced Light Helicopter	Air surveillance, SAR, pollution response, CASEVAC, troop transport, armed variant and afloat operations	(i) Even after seven years of induction of the first helicopter and expenditure of ₹ 162.03 crore, the ALH does not meet operational requirements. The ALH is being exploited only for basic flying as the present state of ALH precludes accomplishment of any mission oriented flying.

- (ii) The ICG ALH are not fitted with weather radars, which is a major limitation. Fitment of operational role equipments has been kept in abeyance.
- (iii) ICG ALH can neither be exploited for SAR mission nor for afloat operations pending resolution of many issues including rescue hoist trials and certification, structural provisions for SAR operations, radar flickering and Doppler failure, AFCS software update for auto hover.
- (iv) Serviceability has been poor. On an average the ICG aircraft have spent more time at HAL than with the squadron since their induction. In September 2007, for one ALH, out of 100 hours of flying undertaken by the Helo, only 30 hours and 40 minutes contributed towards service flying and remaining was towards maintenance test flight. The aircraft has been plagued by premature component failures and frequent groundings for compliance of servicing instructions and modifications.
- (v) Deployment of ALH on ships has not been achieved due to problems in blade folding even though two newly inducted AOPVs have been specifically designed to accommodate ALH on board.
- (vi) ICG has a requirement of 12 Twin Engine helicopters against which it holds four ALH. Due to failure of ALH, ICG is contemplating procurement of eight twin engine helicopters by import to meet the deficiency.

<p>Helo Traversing Gear</p>	<p>Helicopter Securing and Traversing system is to secure and safely traverse helicopter from the landing area to the hangar along a system of rails secured flush to the deck and vice-versa. The system is installed on the quarter deck of the ship.</p>	<p>Two newly inducted AOPVs are designed to embark ALH helicopters on them. However, the decks of these ships could not be cleared for helicopter operations due to obstructions with the Helo traversing gear. Operations are thus restricted to emergent, critical and life-saving operations only using Chetak.</p>
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The deficiencies in ALH and its ineffective utilisation is a severe constraint in ICG operations.

15 Deficiencies in Weapons, Arms and Ammunition

EQUIPMENT	ROLE	REMARKS (With limitations / not operational / under trial /not installed)
<p>Super Rapid Gun Mounts (SRGM)</p>	<p>Anti Aircraft/Missile point weapon system</p>	<p>(i) A major armament of the AOPV, this gun is not available on two ships Samar and Sangram since 2006 due to problems in commissioning of gun assemblies viz., EOFCS/BIFU/VRU.</p> <p>(ii) Major routines like initial test firing, factory acceptance trials, harbour acceptance trials and sea acceptance trials are pending on other two AOPVs i.e Sagar and Sarang.</p> <p>Coast Guard stated (September 2009) that SRGM is considered as deterrence and is required to be used in war like situation only. The AOPVs have been equipped with other armaments like LMG, HMG and Gustav Rocket Launcher to suit ICG role at sea. ICG argument is illogical, as having non-functional guns at any point of time cannot be considered optimal operational preparedness.</p>

		Besides, the availability of other armaments on board AOPVs does not make good the void created by the absence of an operational SRGM as these armaments are not likely to provide protection against the enemy aircraft.
CRN 91 guns	The gun is fitted on AOPVs, OPVs and FPVs. The gun is a maritime version of 2A42 Medak gun and is the main armament of these ships. Besides, it serves as anti aircraft defence weapon, provides fire cover to boarding parties and neutralizes dangerous enemy surface targets.	<ul style="list-style-type: none"> (i) Is operating with reduced accuracy in tracking a target due to lack of the Stabilised Optronic Pedestal (SOP). (ii) Restricted operations at night due to lack of night vision facility. (iii) Harbour Acceptance Trials (HATs) schedule waived off due to non-fitment of SOP for 5th and 6th AOPV. (iv) Guns have been installed on new FPVs delinking SOPs. <p>Even though all the 20 SOPs have been delivered, only 8 have been fitted onboard CG ships, 5 are under fitment onboard FPVs and remaining 7 are stowed at various construction yards for fitment onboard new ships.</p>

Deficient Weapons, Arms and Ammunition onboard the vessels is a serious impediment to the exploitation of the vessel for its designated role as it renders the vessel less than effective in engaging hostile targets. Besides, the security of the vessels is also compromised.

16 Deficiencies in communication and electronic equipment

EQUIPMENT	ROLE	REMARKS (With limitations / not operational / under trial /not installed)
Radars	'X' and 'S' Band Racal Decca radars used in Search and Rescue role on AOPVs and OPVs	<ul style="list-style-type: none"> (i) Have completed service life of 10 years (ii) Persistent defects since 2001, however, replacements commissioned only between November 2009 and February 2010

		<p>(iii) Till the replacement, the 'X' band radar could be made operational in basic modes with limitation of range till 30 Nautical Miles. The 'S' band radar had a similar fate with range limited to 15 NM.</p> <p>Coast Guard stated in reply that the ships met operational commitments despite range limitations. However, the fact remains that range limitation will not allow the user to notice the presence of any ship or land mass beyond a reduced limit. The achieved range would also vary depending upon the weather and the sea conditions.</p>
<p>IFF/ Glide Path Indicator/XBT</p>	<p>IFF- Used for identification of friend/foe of the ships fitted with interrogator.</p> <p>Glide Path Indicator is used as aid for correct approach path of helo while landing on deck.</p> <p>XBT- Expandable Bath Thermograph used for measuring temperature of sea water.</p>	<p>The Glide Path Indicator and XBT were fitted on board AOPV ICGS Sankalp, commissioned in May 2008 but are not proven pending HATs/SATs even after a lapse of more than two years.</p> <p>SATs of IFF pending since 2006 on ICGS Aruna Asif Ali and S K Chauhan</p>
<p>VHF Communication Equipment</p>	<p>This equipment is used by crews of IB's, IC's etc to communicate with each other /shore establishment while on patrol.</p>	<p>The equipment has a range of 15 NM. However, it is fitted on-board Interceptor Crafts having an endurance of 75 NM. Coast Guard stated (June 2009) that ICs are not deployed beyond 15 Nautical miles as crafts can not sustain rough seas. The reply is contradictory as Coast Guard had stated in April 2008 that ICs are deployed in areas more than 35 NM from the base for surveillance and patrol.</p>

Deficiencies in the communication equipment and electronics equipment, fitted onboard vessels, has a direct fall out in the accomplishment of the mission for which the vessel is deputed.

Recommendations

- *Planning, sanction and establishment of ICG stations and aviation units should be viewed in a professional manner based on project mode. It should be ensured that stations are activated with a full complement of envisaged manpower, land and other infrastructure, simultaneously, to ensure that activated stations do not suffer from limitations.*
- *Replacement procurements for ageing vessels should be timely to ensure that a reliable fleet is available to ICG.*
- *There are serious shortages in number of vessels and aircrafts, as compared to planned levels. Pro-active procurement has to be resorted to in order to liquidate the shortages.*
- *Deficiencies in performance of on-board equipment hamper ICG effectiveness. Concerted efforts should be undertaken to provide quality on-board equipment / platforms either by procurements or refurbishing of existing ones.*

4.2 Logistics and Manpower

4.2.1 Logistics – An Introduction

ICG vessels are installed with a vast variety and range of mechanical, electrical, electronic equipments and weapon systems. To ensure that these ships are exploitable in a high state of operational sea worthiness for their entire life, the hull and structure of these ships and all the equipment/systems fitted on them need to be maintained and overhauled in a phased manner.

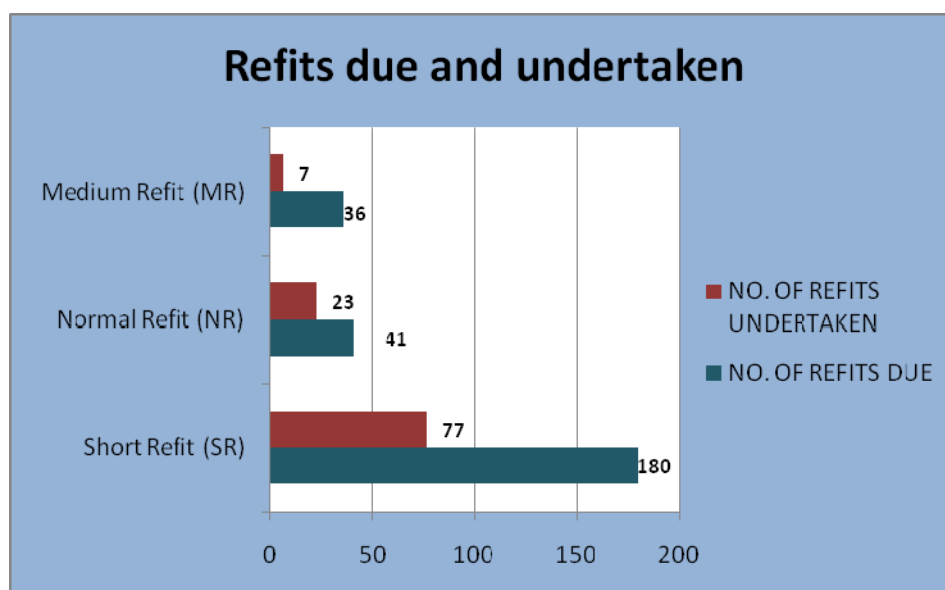
Each ship has an operational phase, which varies from 9 to 15 months depending on the class of ship. During this period the ship is available for meeting all tasks/commitments. At the end of an operational phase, each ship is scheduled to undergo a refit at the dockyard. Basically ships undergo three types of refits, Short Refit (SR), Normal Refit (NR) and a Medium Refit (MR). The scope of each type of refit is given in Annexe 3.

The duration of these refits and their periodicity is determined based on the number of years the ship has been in commission and periodicity at which various types of maintenance routine are required to be undertaken.

The ships are taken for maintenance based on a refit programme finalised by the Coast Guard (ICGO 5/93). The maintenance period consists of one week self-maintenance period, a two-week assisted maintenance period, short, normal and major refits, and modernisation and replacement of vintage equipments. ICG does not have a repair yard of its own unlike the Indian Navy and has to depend upon Defence Public Sector shipyards like Mazgon Dock Limited, Mumbai, Goa Shipyard, Goa, Hindustan Shipyard, Visakhapatnam, Cochin Shipyard, Kochi, Garden Reach Ship Builders and Engineers, Kolkata, etc. and some private shipyards like Krasney Mumbai, Homa Engineering Works, Mumbai, Wartsila Mumbai etc.

4.2.2 Timely refits not undertaken

Audit scrutiny of refits executed by the Coast Guard during 2003-10 revealed that prescribed norms for carrying out different types of refits as per schedule (ICGO 5/93) were not followed. Despite the schedule for completion of refits being determined after taking into account force level and requirement of fleet, the schedule was not adhered to. Audit observed that the ICG has not undertaken a number of refits which have fallen due as shown in the table.



- Out of total 257 refits due for AOPV/OPVs and FPV/IPVs between March 2003 and December 2010, only 107 could be undertaken indicating a short-fall of 58 per cent.

Ship class wise, it was seen that the percentage shortfalls in undertaking refits ranged from 48 to 88 per cent as detailed below.

17 Shortfall in refits of vessels *vis à vis* refits due

Type of Ship	Percentage shortfall in refits undertaken		
	Short Refit	Normal Refit	Medium Refit
OPV / AOPV	63	50	60
FPV / IPV	54	48	88
Total	57	49	81

- It was further observed that in a few cases, the refits, undertaken, were after an inordinate delay from their scheduled date of refit. The delay in commencement of two scheduled normal refits in respect of AOPV / OPVs was eight years and three medium refits was four to seven years.

ICG while accepting the audit finding (October 2009), attributed the delay to non-availability of sufficiently capable yards in the private sector, non-participation/selective participation by limited number of DPSU/PSU shipyards, re-tendering due to high L-1 quote, and delay in procurement/materialization of major routine kits, procedural delays as a result of queries/clarifications and also due to operational reasons.

4.2.3 Refit Management

Efficient repair and maintenance activities, provisioning of spares along with proper positioning of manpower are a pre-requisite for ensuring proper refit management. The ICGO 5/93 specifies the duration of each refit, i.e. in how much time each refit ought to be completed after performing all scheduled maintenance activities.

Audit noted that refit management was not very efficient as evidenced in the fact that the refits have taken much longer than the number of days prescribed. In fact, ICG has allowed longer periods for the refits to the vendors undertaking the refits, ranging from 25 *per cent* to 329 *per cent* more than the prescribed duration. Despite this, there was further delay in completion of refits as detailed below.

18 Timelines for refits of ships

Type of ship	Duration of Refit in days		
	Short refit	Normal refit	Medium refit
AOPV/OPV			
Days to be taken as per ICGO 5/93	84	120	210
Days allowed as per contract	120-270	120-270	300-365
Days actually taken on an average	156	255	476
IPV/FPV			
Days to be taken as per ICGO 5/93	35	60	120
Days allowed as per contract	90-150	120	150
Days actually taken on an average	145	165	183

Audit noticed that the time actually taken for SR, NR and MR of AOPV/OPVs during 2003 - 2010 was 86 per cent, 113 per cent and 127 per cent respectively more than the bench marked time lines prescribed by ICG in May 1993. Similarly, the time actually taken for SR, NR and MR of IPV/FPVs during 2003-2010 was 314 per cent, 175 per cent and 53 per cent respectively more than the bench marked time lines for this class of ships. The actual time taken in MR of AOPV/OPV and MR of IPV/FPV has exceeded even the liberal time schedule prescribed in the contracts. Audit noted that in the case of 31 refits undertaken for AOPV/OPV between 2003 and 2010, the time taken was 27 per cent more than the contract while the corresponding figure in the case of 74 refits taken up for FPV/IPV/SDB, was 51 per cent more.



ICG Intercepter Boat

ICG attributed delay to inadequate manpower resources and slow pace of progress of work, delay in procurement/non availability of spares, lack of planning, coordination, monitoring and inadequate efforts by yards. ICG also held that unforeseen defects during the refits were also the reasons for delay in completion of refits. The delays raise questions on the efficacy of the refits undertaken on the ships previously, as well as inadequate planning in the refit management.

The prolonged duration of refits adversely impacts the operational availability of the ships. The ICG stated, in October 2009, that amended orders for refit cycles would be issued very soon. Audit noted that the amendment process was initiated in 2001 and even after eight years, ICG has not been able to promulgate a revised refit order. This is indicative of lackadaisical approach on the part of the ICG to address the issues relating to refit management of their vessels.

4.2.4 Inspection of Aircrafts

The repair/maintenance of ICG aircrafts is carried out on a fixed schedule, i.e. after completion of certain period/flying hours. The duration of inspections are also prescribed.



ICG Chetak in flight

- The status of inspections carried out on Dornier aircraft indicated that about 66 *per cent* of inspections are delayed by a period ranging from 5 to 620 days.

- In respect of Chetak, it was seen that about 54 *per cent* of the inspections were delayed by a period ranging from 2 to 289 days.
- In respect of ALH, Coast Guard stated that since the helicopter is still under evaluation stage, duration for carrying out servicing on ALH has not been specified by the OEM⁷, Hindustan Aeronautics Limited (HAL) till date.

Audit noted that much of the delay is attributable to the exclusive dependence on HAL as it is the only service provider for ICG aircrafts (Chetak, Dornier and ALH).

4.2.5 Manpower

Manpower is fundamental to the development and sustenance of the service. Staffing requirements are required to keep pace with the acquisition of ships and aircrafts.



Coast Guard personnel marching

⁷ Original Equipment Manufacturer

The manpower position in ICG is shown in the table below:

19 Men in position

	OFFICERS	ENROLLED PERSONNEL
ICG Perspective Plan (1985 – 2000)	1925	10,959
Men in Position 31/3/2008	731	5244
Men in position 31/12/2010	1037	6387

The shortage as on 31 March 2008, of 62 and 52 *per cent* of officers and enrolled personnel respectively, of the envisaged force level of 1,925 officers and 10,959 enrolled personnel in the Perspective Plan 1985 – 2000, improved as on 31 December 2010. But, there was still a shortage of 46 and 42 *per cent* respectively of officers and enrolled personnel *vis a vis* the force levels envisaged for in the Perspective Plan.

In reply, ICG HQ stated, in May 2009, that manpower to all units are positioned on the concept of manning plan of units which is derived based on total borne strength *vis a vis* Government sanction to adjust the shortages. It was also stated that Director General, ICG is empowered to utilise/deploy manpower within the sanctioned strength as per their role/charter and requirement felt/projected by the units on the basis of Government orders of August 2001.

The reply of the ICG does not address the issue of large shortfalls in the existing levels of manpower available *vis a vis* the levels envisaged in the Perspective Plan.

4.2.6 Training

Initial training of officers and EPs is held at Naval Academy, Ezhimala⁸ and at INS Chilka respectively, which are Indian Navy training establishments. Indian Coast Guard has been projecting the training requirement to Navy every year on required basis. Navy allocates slots to Coast Guard for various training programmes which are conducted for naval personnel at various Naval Training Institutes. The ICG has initiated a proposal to set up its own Training Center in February 2002 with strength of three officers and 15 personnel to provide specific training for Coast Guard personnel in order to carry out its charter of duties and functions effectively. Though the interim Indian Coast Guard Training Centre (ICGTC) was activated in 2002 at Kochi, the sanction

⁸ The Academy was earlier based at INS, Mandovi

for creation of interim training center with two officers and four personnel was given by Ministry of Defence in April 2008 only. Government accorded *in principle* approval for setting up of ICG Academy in October 2010.

Recommendations

- *ICGHQ should review its refit order in view of consistently long time taken in the refit of its vessels. ICGHQ should take steps to minimise delay in commencement and completion of refits and inspections of aircrafts.*
 - *Efforts should be made to identify and develop vendors in public / private sector for a long-term, institutional arrangement to facilitate undertaking refits of Indian Coast Guard ships timely.*
 - *Availability of manpower for operations may be improved for smooth functioning of ICG.*
-

DIFFERENT TYPES OF VESSELS USED BY ICG
FOR UNDERTAKING PATROLLING



AOPV



OPV



FPV



IPV



IB



IC



ACV