



# भारतीय नौसेना

## THE YEAR THAT WAS

### INDIAN NAVY IN THE YEAR 2011

#### Force Levels

- Indian Navy (IN) started out at independence as the Royal Indian Navy (RIN) with a small flotilla of 33 ships which comprised two frigates, four sloops, one Corvette and the other small utility yards and craft. Until 1965, our ships were largely of British origin. The years 1965 to 1971 saw Russian acquisitions being added into the Indian Navy. Today most ships are built in India with a few ships being imported.
- The Indian Navy's present force level comprises 133 ships including 14 submarines. The total number of aircraft is 216. The details of various aircraft in the IN inventory are as follows:-

- Fixed Wing - 80
- Helicopters - 122
- UAV's - 14

- **Basing of Ships.** The details of command wise breakdown of ships and submarines are as follows:-

**WNC.** There are 50 ships, 08 submarines under WNC.

**ENC.** There are 45 ships, 06 submarines under ENC.

**SNC.** There are 11 ships based at Kochi.

**ANC.** There are 13 ships based at Port Blair.

- **Inductions Planned in 2012.** The ships likely to be inducted in 2011 are under:-

- (a) One Shivalik Class.
- (b) One Kolkata class Destroyer (Project 15A).
- (c) Three Catamaran Survey Vessels.
- (d) One ASW Corvette (Project 28).
- (e) One OPV.

(f) 25 FIC's.

(g) One aircraft carrier Vikramaditya & two follow-on Talwar class from **Russia**.

### **Perspective Plans**

- The Indian Navy's perspective-planning of 'force-levels' concentrates upon 'capabilities' instead of numbers alone. In terms of force accretions in the immediate future, we are acquiring ships in accordance with the Navy's current Maritime Capability Perspective Plan. There are presently 49 ships and submarines on order. Our preferred choice of inducting ships has been through the indigenous route. For instance, the GRSE has already delivered all three of the large amphibious ships and ten water-jet Fast Attack Craft. The yard is presently constructing **four advanced Anti-submarine Corvettes (P28)** and has been recently awarded a contract to build **eight Landing Craft Utility (LCU's)**.
- In the South, **Cochin Shipyard Limited (CSL)** is progressing the construction of our most ambitious ship yet – the **Indigenous Aircraft Carrier (IAC)**. The ship is scheduled for launch in early 2012.
- At Mumbai, our premier warship-building yard **Mazagon Docks Limited**, is engaged in the construction of **three Kolkata Class destroyers and four Project 15 B destroyers** besides **one stealth frigate of the Shivalik Class**, (two have already been delivered on 29 Apr 10 and 20 Aug 11). **Six submarines of the Scorpene Class** are also under construction at MDL.
- **Goa Shipyard Limited**, which has built a number of Offshore Patrol Vessels for the Navy and the Coast Guard, has **four advanced** versions of this type under construction.
- Over the years, we have taken a conscious decision to encourage other shipyards, including private yards, to enter the specialised field of warship-construction. The response has been encouraging. While **Alcock-Ashdown Gujarat Limited** has been entrusted with the construction of **six catamaran-hulled survey ships** for hydrographic duties, **Pipavav Shipyard at Gujarat** is making **five NOPV's** and **ABG Shipyard, Gujarat** is constructing **two Cadet Training** ships for the Indian Navy.
- The indigenous warships construction has come a long way since the commissioning of INS Nilgiri on 03 Jun 72. There are not many countries in the world having capability to produce such a wide variety of warships ranging from Fast Attack Craft to Aircraft Carrier. However, a few ships are being inducted from abroad also to bridge the gaps in the capabilities that have been envisaged in the Master Plan of Navy. These include the **carrier Vikramaditya** and three follow-on ships of the **Talwar Class from Russia**.

- Concurrently, Mid-Life Upgrades (MLUs) of ships are also being progressed. After their MLU, ships of the Rajput Class as also those of the Brahmaputra Class will emerge as potent 21st century combatants with significant residual life.
- **Arihant**. Arihant, which is the first submarine under the Advanced Technology Vessel Programme (ATVP), was launched on 26 July 2009 at Visakhapatnam. It demonstrates a quantum leap in the shipbuilding capabilities of the country. The submarine is now undergoing wide ranging trials to prove the various systems fitted onboard. This will be followed by extensive sea trials, before it is commissioned into the Indian Navy.

### **BUDGET**

- There has been a marginal increase in naval share of the Defence Budget from 13.32 % in FY 10-11 to 14.13% in FY 11-12. This year (FY 2011-12), the Navy received Rs. 23236.12 Cr, amounting to 14.13 % of the Defence Budget (Rs 1, 64,445.29 Cr). This is however much below the average trends of over 17% prior to implementation of VI CPC.
- Of this, 59.08% (Rs 13729.12 Cr) is the allocation for Capital Schemes, while 40.92% (Rs 9507.00 Cr) is the Revenue allocation. Of the Rs 13729.12 Cr allocated for capital expenditure, the bulk (Rs 13149.02 Crores) is earmarked for modernisation projects and Rs 580.10 Crores for Land and Construction Works.

### **MANPOWER**

- The Navy is facing a shortage of about 18-19% in the authorised strength of Officers and approximately 17% in sailors. With the current induction patterns, we intend to bring down the shortages considerably in the near future. The Navy has a civilian workforce of around 45,000 employees. Currently, there is a shortage of about 18% which arose due to restrictions imposed by the government on recruitment from the open market during the period 2001 to 2009. The curb has now been lifted and efforts to speed up the recruitment process are in place to bring down the shortage.
- **Training of Civilians**. Training of the civilian manpower of the Navy is being accorded due priority, with the Government providing up to 1.5% of salary budget per annum. Personnel are trained with the aim of updating their knowledge and professional skills. Civilian personnel are also being deputed abroad to respective OEMs to keep abreast of the latest technological developments.

## **Training for Friendly Foreign Countries**

- The Indian Navy has been providing training to foreign personnel for more than 30 years, during which it has trained more than 8000 foreign personnel from 37 countries. Our reputation for providing high quality of training drives us to constantly evaluate and evolve. The Ministry of External Affairs provides assistance for training of Naval Personnel from a large number of countries under the Indian Technical and Economic Cooperation (ITEC) Scheme I and II. Under this scheme, the airfare, tuition, boarding and lodging are fully funded by the Government of India (except in the case of ITEC II Scheme wherein the parent country of the trainee bears the airfare cost). ITEC Scheme is not restricted to the Armed forces alone. In fact a major portion of the money available in this scheme is spent on courses for civilians. In cases where ITEC funding is unavailable, training is availed under the Self Financing Scheme (SFS), wherein all costs are borne by the trainees' own Government.
- Training is planned on a yearly basis from 01 Jul to 30 Jun next year. In most cases international students are accommodated with our own trainees. The courses are structured for effective and efficient utilisation of training infrastructure. The last few years have witnessed a steady increase in our commitment to build capacity through training cooperation. The number of training slots allocated to foreign trainees during the past five years is as tabulated below:-

<b><u>Year</u></b>	<b><u>No of Training Slots Allotted to Foreign Navies</u></b>
<b>2005-06</b>	<b>352</b>
<b>2006-07</b>	<b>471</b>
<b>2007-08</b>	<b>635</b>
<b>2009-10</b>	<b>629</b>
<b>2010-11</b>	<b>792</b>
<b>2011-12</b>	<b>853</b>

## **Indian Naval Academy (INA), Ezhimala.**

- The Indian Naval Academy (INA) located at Ezhimala, approximately 280 kilometres north of Kochi, in Kerala was inaugurated by the Honourable Prime Minister of India, Dr. Manmohan Singh on 08 Jan 09. Spread over 2452 acres of coastal upland, INA has world class facilities in terms of infrastructure, for both academic pursuits and outdoor activities; including state-of-the-art laboratories, workshops, swimming pools and play fields. The Academy has modern residential facilities, an excellent Mess and five well laid-out squadrons, each with its own comprehensive facilities. The administrative support to INA is provided by the Base depot ship,

INS Zamorin, which was commissioned in Apr 05. Being built at a cost of over 1000 Crores, the Academy, when fully ready, would accommodate and train 1200 cadets.

- The first B.Tech Course commenced at INA on 22 Jun 09. This is a significant step in evolution of the Navy to meet the technical challenges of the 21<sup>st</sup> Century. Induction of cadets to the Academy is through UPSC examinations as well as directly by IHQ MoD (Navy)/ DMPR based on their 10+2 merit.
- B.Tech curriculum has been drawn up by the Navy, in conjunction with Jawaharlal Nehru University (JNU) and the All India Council for Technical Education (AICTE). INA has been accredited by AICTE. B.Tech training is conducted in Electronics and Communication Engineering (ECE) for 'X' and 'L' officers and Mechanical Engineering (ME) for 'E' and 'NA' officers. Accordingly, B Tech (ECE) and B Tech (ME) degrees are awarded by JNU on completion of the B Tech course. On completion of a common curriculum in the first two years (four semesters), cadets bifurcate into different streams for the remaining two years. 5<sup>th</sup> semester onwards, cadets split into Mechanical Engineering (ME) and Electronics & Communication Engineering (ECE) streams. Further, after the 7<sup>th</sup> semester, cadets from ECE stream bifurcate further into 'X' and 'L' and those from ME stream into 'E' and 'NA' branches.
- In addition to Technical training, the Academy provides its cadets with a healthy dose of humanities and Naval History. The curriculum not only provides adequate academic grounding for award of a B Tech degree but also caters to the overall transition of an Officer Cadet to a fine Service Officer who is always ready to defend his country.
- **Education of Naval personnel.** The Indian Navy considers education as the foundation on which its professionalism is built upon. Towards this end the following initiatives have been taken in the field of education:-
- **Navy IGNOU Community College Scheme 'Sagardeep'**. Indian Navy has signed a MOU with IGNOU on **24 Jun 11** for implementation of Community College Scheme **Sagardeep** in the Navy. Under this scheme, IGNOU has recognised nineteen training schools/ establishments of Indian Navy as Navy IGNOU Community Colleges (NICCs). These colleges will function as autonomous institutes for carrying out academic, training and administrative responsibilities and will identify academic / training programmes / courses to be offered to Naval personnel within the broad framework set out by IGNOU. The scheme aims to confer educational certifications by recognising the 'In-Service' training/courses undergone in Navy through award of Associate Degree/Diploma/Certificates of IGNOU.

- **IGNOU- Navy Educational Project (INEP)**. MoU has been signed in 2000 with IGNOU for setting up of study centres/ Regional Centres in the Navy for facilitating various courses of IGNOU for Naval personnel within Naval premises. At present nine courses are being offered. There are four Regional Centres functioning at New Delhi, Mumbai, Visakhapatnam and Kochi.
- **Libraries in the Navy**. Fifty four Naval Reference Libraries have been created all over the Navy to provide resources for professional reading thereby providing Naval personnel a means by which they can build upon their professional knowledge and improve all round awareness.

## **OPERATIONS/ EXERCISES**

### **Surveillance, Operations and Missions**

- Surveillance forms one of the pillars upon which the peace-time Concept of Operations of our Navy rests. For the purposes of surveillance, it is divided into the following four segments (proceeding steadily inwards towards our coast): -
  - First are the Choke Points of the Indian Ocean.
  - Next is a 'Maritime Surveillance Zone', with its outer limit defined by mission requirements and its inner limit being defined by the current EEZ boundary, that is, 200 nm from the coast.
  - The third segment is an area called the 'MZI Interest Zone' (MZI being the "Maritime Zones of India), with its outer limit at 200 nm and its inner limit at 12 nm from the Indian coast.
  - Finally, there is a 'Territorial Interest Zone', which coincides with the country's Territorial Waters.
- **Surveillance in Choke Points**. Dedicated surveillance missions are periodically mounted in the Choke Points. These missions are generically termed "SLOC Monitoring Missions".
- **Surveillance in the 'Maritime Surveillance Zone'**. Naval ships from all three Commands as well as the Tri Services Command based at Port Blair are regularly deployed in Maritime Surveillance Zones to show presence as well as coordinate / exercise with other regional navies to enhance interoperability. Government sanction for Operational Turn Around (OTR) of IN Ships and aircraft for twenty five specified countries has been obtained for a period of three years, commencing in 2009. With the changing dynamics of the geo-political environment and the growing Indian influence in our immediate and extended region of interest, this sanction would facilitate enhancement of our ability to assist in collective efforts towards maritime security in IOR, the piracy-infested coast of

Somalia, the Mozambique Channel and the southern reaches of the Indian Ocean.

- **Surveillance within the 'MZI Interest Zone'**. Till recently, there were not too many dedicated surveillance missions mounted within the 'MZI Interest Zone'. However, the anti-piracy operations have necessitated deployment of regular units in this zone also, in addition to normal transits undertaken by the Fleets, Flotillas, and Air Squadrons. A dedicated ship and aircraft surveillance effort is also being undertaken around the Lakshadweep and Minicoy Islands called 'Op Island' watch.
- **Surveillance within the 'Territorial Interest Zone'**. **Op SWAN** and **Op TASHA** are ongoing operations of dedicated surveillance missions mounted within the 'Territorial Interest Zone'. In addition, frequent coastal security exercises in close coordination with Indian Coast Guard, Marine Police, Customs, Fisheries, Port authorities and other government agencies are conducted to enhance coastal security awareness among the local populace.
- **Operational Interaction with Foreign Navies**. The operational interaction with regional and extra-regional navies involves structured interaction in the form of war games, exercises or operations. The fundamental purpose of this 'Constructive Engagement' in operational terms is to hone our own Navy's skills in a number of diverse areas of war-fighting and to share current tactical/ technological practices and techniques. The major engagements with foreign navies include US, UK, Russia, France, Sri Lanka, Singapore, Indonesia, Oman, Thailand etc. to name a few.
- **Major Exercises/ Events**. The following Major Exercises/ Events are being scheduled in 2010-11:-
  - **Defence of Gujarat Exercise 11 (DGX 11)**. Defence of Gujarat Exercise has just been concluded on the Western Seaboard in Nov 11. The exercise was conducted by HQWNC with participation from IAF and ICG units.
  - **TROPEX 12**. TROPEX 2012 is scheduled in early 2012. Other than the naval assets of all Commands, IAF assets and Indian Army units will also participate in the exercise.
  - **AMPHEX 2012**. The annual theatre level exercise is also scheduled to be conducted in conjunction with TROPEX 2012.
  - **PFR 2011**. It is a time honoured tradition of the Indian Navy that circumstances permitting, the President of India, as the Supreme Commander of the Armed Forces, reviews the Naval Fleet once during his/ her tenure. Since Independence, nine such reviews have taken place; the last Fleet Review was conducted in honour of HE Dr APJ Abdul Kalam in February 2006, at Vishakhapatnam. The President's Fleet Review is a symbolic display of the nation's

maritime might. The participating units include warships, submarines, auxiliary vessels, Coast Guard ships and merchantmen and are anchored in formation in precise columns for the review. The President of India, embarked on a Naval vessel designated as the 'Presidential Yacht', reviews all the ships by cruising past them. The Ship's company of each ship renders a salute to the Supreme Commander as the yacht sails past. Simultaneously, aircraft of the naval air arm fly past the Presidential Yacht overhead at the designated time in salute. The symbolism is meant to convey reassurance to the Supreme Commander, and to the nation, that the country's maritime forces are in a fighting fit condition and ready to meet any eventuality. The 10<sup>th</sup> President's Fleet Review is scheduled to be held on 20 Dec 11 at Mumbai. Ships from the Indian Navy, Indian Coast Guard and Indian Mercantile Marine are planned to be part of the PFR.

### Anti Piracy Operations

- A large percentage of India's trade, including oil and fertilisers, passes through the Gulf of Aden. The Ministry of Shipping has estimated that the annual **Indian imports through the Gulf of Aden route were valued in the order of USD 50 Billion and exports at USD 60 Billion**. The safety and unhindered passage of maritime trade, by the ships that use this route, is in national interest as it directly impacts our economy. A minimum of about 24 Indian flagged merchant ships transit the Gulf of Aden every month. However, the crew of most of the foreign flagged vessels comprises of Indian nationals, as India's large seafaring community (approximately 100,000 in number) accounts for nearly 6% of the world's seafarers.
- Piracy off the coast of Somalia has grown steadily over the years and has become serious as it is spreading further from the coast into the Indian Ocean. The number of piratical incidents reported in 2010 surpassed the total number reported in 2009. The total number of attacks reported in and around Somalia, Seychelles & off Oman coast in the year 2010 were 219. The number of piracy attacks in 2011 stand at 227 till 17 Nov 11.
- Consequently, to protect Indian-flagged ships, Indian Navy commenced anti-piracy patrols in the Gulf of Aden from 23 Oct 08. A total of 27 IN ships have been deployed for anti-piracy missions in the Gulf of Aden, since Oct 08. Merchant ships, (irrespective of their flag) are currently being escorted along the entire length of the (490 nm long and 20 nm wide) Internationally Recommended Transit Corridor (IRTC), that has been promulgated in the Gulf of Aden for use by all merchant vessels. The escort schedule of the Indian Navy ship in the Gulf of Aden, which indicates commencement dates of escort from either end of the corridor,

is intimated to DG Shipping. Indian flagged merchant vessels avail of this escort. They can also avail of escorts by navies of other countries which are deployed in the Gulf of Aden. This arrangement is working satisfactorily. No Indian flagged merchant ships with Indian nationals onboard has thus far been hijacked in the Gulf of Aden, where the IN ship is deployed for escort missions.

- A total of **1845** merchant ships (of various nationalities) have been escorted by the Indian Navy ships in the Gulf of Aden since Oct 08. Of these only **218** are Indian Flag vessels. During their deployments for anti-piracy operations, Indian Naval ships have prevented **39** piracy attempts on merchant vessels of different nations. The proactive stance taken by the Indian Navy towards providing protection to the merchant marine, irrespective of their nationality has deterred acts of piracy in the Gulf of Aden, and this has been widely appreciated.
- With the increased incidents of piracy, up to 900-1000 nautical miles from the Somali Coast and off Seychelles, and at the request of their governments, **thirteen** IN ships have also been deployed on occasion in the Exclusive Economic Zone of Seychelles/ Mauritius for surveillance in the last three years.

#### **Coordinated Anti Piracy Ops with Other Navies**

- **Exchange of Information.** Although, a number of naval ships from various countries are being employed in the area to prevent acts of piracy, there was a very limited exchange of piracy related information between the navies initially. To facilitate sharing of information, a Counter Piracy Shared Awareness and De-confliction (SHADE) meeting was established by Combined Maritime Forces (CMF) at Bahrain, so that, the forces deployed for anti-piracy operations could exchange piracy related unclassified information over the internet. SHADE meetings are now being held once every two months at Bahrain under the aegis of CMF and provide the Indian Navy an opportunity to interact with representatives from other navies and remain apprised of the latest initiatives being taken to avoid piracy in the Gulf of Aden. An operational update is also provided by various multinational forces and representatives from merchant shipping community.
- **Coordination of Escort Schedule.** GoI/ MoD has given the go ahead for undertaking anti-piracy patrol in coordination with warships from other countries in Gulf of Aden.

#### **Coastal Security Initiatives**

- Since Nov 2008 several initiatives have been taken by the Government to strengthen security of the coastal areas against the threat of non-state actors from sea.

- **Inter Agency Cooperation.** One of the most significant achievements of the last year has been the integration of all maritime stakeholders, including the several State and Central agencies into the coastal security matrix. As a result, there is good coordination, synergy and understanding between all agencies. The resources and security structures of all the stakeholders are being utilised more effectively. Intelligence and information sharing has undergone a transformational change. Real time information flow between all stake holders has resulted in more immediate response by the sea going agencies to any emerging situation.
- **Joint Operation Centres (JOCs).** The Indian Navy has established four Joint Operation Centres in all Naval Commands and ANC. All coastal security operations are now coordinated from the Joint Operations Centre, which are manned round the clock by Naval and Coast Guard teams. In addition, the State Marine Police and other agencies such as Customs, Intelligence Bureau, Ports, and Fisheries etc are also networked with these centres. Besides the four Joint Operation Centres at Mumbai, Visakhapatnam, Kochi and Port Blair, each coastal district also has its own Operations Centre for coordinating activity in their respective districts.
- **Awareness Campaigns.** The very large fishing community all along the coast is considered as good 'eyes and ears' for coastal security scheme. They could provide valuable information on 'out of the ordinary' happenings. In a focused drive to enlist the support of fishermen for their role, awareness campaigns are being conducted. Joint motorcycle rallies by the Navy, Coast Guard and State Police have been conducted in each coastal state, covering all coastal districts. Villagers and fishermen in almost every coastal village have been sensitized to threats emanating from the sea and the measures they could take to contribute to coastal security. Till date, more than 89 awareness campaigns have been carried out. This is an ongoing endeavour along the coast of India and all the coastal districts will be visited regularly by such teams.
- **Surveillance Patrols.** There has been a quantum increase in the efforts for coastal surveillance patrols by Naval and Coast Guard ships as well as aircraft. These patrols are closely coordinated so as to maximise efforts and keep the entire coast under surveillance. The Marine Police of each coastal state has also been associated with the Navy and Coast Guard for coastal patrols. CISF units deployed at all major ports are also being similarly integrated.
- **Sagar Prahari Bal.** Formation of 'Sagar Prahari Bal' comprising 1000 men is in progress in three phases for force protection duties. Further, induction of 80 Fast Interception Craft is also being undertaken to enhance the effectiveness of coastal security.

- **Operations.** The Navy and Coast Guard have launched a number of joint coastal security operations on both seaboard and island territories on receipt of security related information. During such operations, ships and aircraft of the Navy and Coast Guard undertake continuous surveillance and thorough investigations/ checks of various ships, boats and fishing vessels. Surveillance of the ODA's are also enhanced as necessary. In addition, regular surveillance is undertaken in vicinity of maritime boundaries with the neighbouring countries. It is pertinent to mention that coordinated patrols are conducted with Indonesia and Thailand, in vicinity of the IMLL, twice a year.
- **Coastal Security Exercises.** In order to periodically review the readiness of the security agencies and the state administrations in thwarting maritime threats, the Navy conducts coastal security exercises with every coastal state in conjunction with the Coast Guard, marine police, customs, immigration and Port authorities. In all, ten such exercises on West coast, ten on East coast, two in L & M islands and two in A&N Islands have been conducted this year. During these exercises, several contingency scenarios are simulated, including hijacking of fishing craft, landing of terrorists on the coast, stowaways on ships etc. All agencies with a stake in coastal security, participate in these exercises with a view to improve coordination, to achieve integration and thereby improve the coastal security mechanism even further.

## **SPORTS**

- **Achievement in Sports-international Level.** The Indian Navy lays huge emphasis on physical fitness and sports. The Navy's sportsmen have consistently done their country proud in the International arena through their achievements. 63 Naval sportsmen represented the country at various International sports events during the year 2010 – 11 and have won **06 Gold, 03 Silver and 05 Bronze medals.** Sanjeev Rajput, MCPO II QA3 won **Gold Medal** in the 50 Meter Rifle 3 Positions event during ISSF World Cup and has also qualified for the **London Olympics 2012.** During the Commonwealth Games in 2010, Omkar Singh, CPO QA3 has won **03 Gold Medals** and **01 Silver Medal** in shooting, Suranjoy Singh, MCPO II PT won a **Gold Medal** in 52 Kg (Boxing). Cdr Dilip Donde was awarded the Tenzing Norgay Adventure Award for his exemplary feat of successfully completing the maiden solo circumnavigation onboard the sailing yacht 'Mhadei' in 2011.
- **Achievement in Sports-National Level.** Sportsmen from the Indian Navy have also been active in the National arena. As many as 44 sportsmen from the Navy participated at Various National level sporting events in the year 2010-11 and collected a haul of 16 medals, which included **02 Gold, 07 Silver and 07 Bronze medals.**

- Suranjoy Singh, MCPO II of the Navy Boxing team has been bestowed with the Arjuna Award and Best Services Sportsman award for sporting excellence in 2010-11. This is the fourth consecutive year that a naval sportsman has won the Best services Sportsman Award.

### MEDICAL

- The Indian Navy accords utmost priority towards maintaining the health of its personnel and their dependents. Approval-in-Principle for up-gradation of INHS Kalyani to the level of a Command Hospital was accorded by the RM in Apr 10. The case for up-gradation of the hospital has been taken up with MOD.
- INHS Patanjali, a 141 bed Naval Hospital at Karwar is now fully functional. The hospital's capacity will be gradually increased to a 400 bed hospital, so as to be able to cater for the increase in the Naval personnel being based at Karwar.
- At Ezhimala, a new 60-bed hospital, INHS Navjeevani, is likely to be commissioned in early 2012. The hospital will be equipped and manned as per existing scales.
- In an effort to equip hospitals, ships and establishments with modern medical equipment, scales of medical equipment were recently revised, which have been approved by the GoI and procurement action is being taken by the office of the DGAFMS. Two CT scan machines have been installed in INHS Kalyani and INHS Sanjivani and work is in progress to install one CT Scanner at INHS Dhanvantari at Port Blair by end Dec 11. Advanced Operative Arthroscopic Unit has also been installed at INHS Asvini. In addition, Autologous Stem Cell Harvest and Transplant has also commenced at INHS Asvini.
- INHS Asvini, at Mumbai, has been awarded the coveted '**Raksha Mantri Trophy**' for the '**Best Command Hospital in the Armed Forces**' for the year 2010.