

Annual Report 2016-17



**Ministry of Defence
Government of India**

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SECURITY ENVIRONMENT



Security Environment

1.1 Given the prevailing uncertainties and challenges in the international security scenario, India's national security imperatives as well as its growing regional and global role necessitate a strong and dynamic engagement in defence and security cooperation with friendly foreign countries.

1.2 The past year witnessed significant changes that directly impacted on the global and regional security scenario. The current international security environment can be characterised as one of rapid change, continued volatility and persistence of vast swathes of instability, compounded by uncertainty about policies and approaches of major powers. India continued efforts to build stronger defence partnerships with a large number of foreign countries with a view to addressing emerging threats and to enhance regional and international peace and stability.

1.3 The persisting salience of trans-national terrorism remains a primary security challenge, exacerbated by the interplay between states and non-state actors often used as proxies to spread extremist ideologies and foment violence. Large parts of West Asia, Afghanistan and Africa are afflicted by deep instability and violence, posing a rising threat to the stability of wider Asia and Europe. The re-emergence of territorial disputes, including in the maritime domain, has sharpened differences between states and could lead to militaristic approaches

and challenges to norms of international law as well as standards of international behaviour. The rise of nationalism, including in key Western nations, and continued challenges to democratic structures and processes in several countries, could limit the efficacy of efforts for dialogue and reconciliation within and among societies. The revolution of rising aspirations coupled with weak economic growth as well as a variety of environmental and social crises, place additional burdens on state structures that are often unable to cope. Such instances of state failure, including in India's immediate neighbourhood, are a distinct feature of the current scenario, with immediate and often serious security implications.

1.4 The situation in India's immediate South Asian neighbourhood remains difficult, with the overall security and political context in most neighbouring states continuing to remain volatile. The growing recognition of the need to take a united view against cross-border terrorism, leading to the cancellation of the SAARC Summit and calls for holding the meeting in an atmosphere free of terrorism, was a notable development. Efforts to provide a fresh impetus to Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC), such as through the BRICS-BIMSTEC Outreach Summit and sub-regional efforts such as BBIN (Bangladesh, Bhutan, India, Nepal) could provide alternative structures to enhance cooperation and promote

economic development. India's continued economic rise, and the ability of some states in South Asia to maintain reasonable economic growth rates as well as improvements in their social development indicators, is another positive dimension that augurs well for longer-term stability in the region.

1.5 In Afghanistan, the Afghan National Security Forces have taken over the security responsibility and are facing a daunting challenge of fighting insurgents with reduced international combat support. The Taliban now controls more territory in Afghanistan than at any time since their ouster in 2001 and is pursuing distinct military as well as political objectives. Pakistan has been manoeuvring to expand its influence using insurgent groups as proxies. India continues to play a role in training and supporting capacity building of the Afghan Security Forces. India has so far provided US \$2 billion in assistance towards development in Afghanistan and has committed a further US \$ 1 billion for capacity and capability building.

1.6 While the political situation in Bangladesh is stable, proponents of radical ideology continue to make efforts to propagate their narrative within Bangladeshi society. The activities of such organizations have posed a grave challenge to Bangladesh's security in the past year. Nepal witnessed prolonged turmoil by way of the Madhesi agitation after the promulgation of the constitution in September 2015. The internal situation has since improved, but remains fragile. With the new NLD Government in power, Myanmar has moved towards democratisation. The new government has made efforts towards resolution of ethnic conflicts and establishment of peace. While the security situation in Sri Lanka is stable, the economic scenario remains challenging despite efforts by the government to shore up revenue through new taxation measures and other initiatives.

1.7 The political situation in Pakistan continues to remain fragile with a severe deficit of inclusive and balanced economic development. Pakistan also continues to relentlessly expand its military forces, especially nuclear and missile capabilities. The country is torn by ethno-regional conflicts, with the zone of conflict expanding from the tribal areas on Pakistan-Afghan border to the hinterland. Although the military has made efforts to improve the security situation in the country, it has avoided taking action against jihadi and terror outfits that target Pakistan's neighbours. Support to such groups persists despite ongoing efforts by the international community, including India, to list the head of the terrorist group JEM, Masood Azhar, as an international terrorist. Such outfits continued to be encouraged to infiltrate into India under the cover of massive cross-LoC and cross-border firing in Jammu and Kashmir and other areas throughout the year. Pakistan based terrorists attacked military bases in India, triggering an appropriate response by Indian armed forces.

1.8 India's central peninsular position in the Indian Ocean and geo political circumstances makes it reliant on the seas. India's oil imports have risen to nearly 80%, almost all of which is transported by sea. 95% of India's total overseas trade by volume is through shipping. A third of the world's bulk cargo and half its container traffic passes through the Indian Ocean. The security of trade and commerce is, therefore, of utmost primacy and importance for India. The location of choke points such as Straits of Hormuz, Malacca and others and the presence of multinational maritime forces makes the scenario in the Indian Ocean Region (IOR) dynamic.

1.9 Developments in the IOR region in the past one year have increased security challenges for India. In order to address these, India has

taken pro-active measures to enhance the peace and stability in the region. India's relations with IOR rim countries, including on-going initiatives for defence and security cooperation will help shape a stable maritime environment. We have concluded 'White Shipping' agreements with a range of partners and cooperate on coastal and EEZ surveillance with some of our neighbours. India actively participated in arrangements like the ReCAAP (Regional Cooperation Agreement on Combating Piracy and Armed Robbery against Ships in Asia) and the SOMS (States of Malacca and Singapore) mechanism for maritime safety. We also took an active role in fighting piracy, both to our west and east. Since 2008, the Indian Navy has undertaken more than 50 anti-piracy escort missions in the Gulf of Aden contributing to greater maritime safety in the region. Building on 2004 tsunami relief experience, India has undertaken a wide range of HADR operations, from major evacuation in Yemen to supply of drinking water to the Maldives and providing relief supplies by air to Fiji and Sri Lanka. We also actively participated in various regional events to enhance our capabilities including workshops, conferences and table-top exercises under the aegis of ARF and ADMM Plus.

1.10 China initiated significant restructuring of the People's Liberation Army, aimed at stronger control by the Party and to usher in jointness to enable mobile operations, multidimensional offense and defence, offshore waters defence and open seas protection, as well as build its airspace as well as nuclear and conventional missiles capabilities. The 'China-Pakistan Economic Corridor' (CPEC) passing through Pakistan Occupied Kashmir challenges Indian sovereignty. South China Sea is a major waterway and over US \$ 5 trillion trade passes through the sea lanes in this region. As per information available, over 55% of India's trade passes through South China Sea and Malacca

Straits. Peace and stability in the region is of great significance to India. India undertakes various activities, including cooperation in oil and gas sector, with littoral states of South China Sea. Keeping in mind implications for regional peace and stability of recent developments in the South China Sea, India's position on the issue is consistent and has been reiterated bilaterally and in multilateral fora on several occasions. India supports freedom of navigation and overflight, and unimpeded commerce, based on principles of international law, as reflected notably in the UNCLOS. India believes that States should resolve disputes through peaceful means without threat or use of force and exercise self-restraint in the conduct of activities that could complicate or escalate disputes affecting peace and stability. As a State Party to the UNCLOS, India urges all parties to show utmost respect for the UNCLOS, which establishes the international legal order of the seas and oceans.

1.11 Despite trends towards higher defence spending, broader trends in South East Asia present a stable picture, with continued economic growth. However, the region could be entering a period of strategic flux as policy shifts on both sides of the Pacific may lead to new economic and security alignments. India continued its sustained focus on its "Act East" policy in strategic, economic, cultural and military engagements at various levels, which has confirmed its role as a responsible stakeholder in regional security. India successfully hosted a multinational peacekeeping and humanitarian mine action field training exercise with the participation of 18 countries under the ASEAN Defence Ministers' Meeting Plus format in March 2016.

1.12 The situation in the Korean Peninsula remains one of serious concern. We have called upon DPRK to refrain from such actions which

adversely impact peace and stability in the region and beyond. India remains concerned about the proliferation of nuclear and missile technologies which have adversely impacted the regional security environment.

1.13 India's interests in Central Asia are based on its geostrategic location, presence of abundant energy and natural resources as well as age-old historical and cultural ties. The region continues to be targeted by radical terrorist groups that seek to undermine the secular regimes. The International North South Trade Corridor which India, Iran and Russia are working to develop could enable viable trade and economic linkages with the region. India is also a stake holder in the TAPI pipeline as well as other initiatives such as digital links to foster connectivity.

1.14 The security situation in West Asia remains in flux, with growing sectarian rivalries as well as inter-state competition for influence in the context of a depressed economic scenario due to continuing low oil prices. The internal situation in countries such as Iraq, Syria, Yemen and Libya remained volatile and violent. Though the situation has slowly started to turn against the various insurgent and terrorist groups, the regimes in power continue to be vulnerable. India has key stakes in this region which accounts for 66% of our energy requirements and is home to over eight million Indians. Apart from economic considerations, the region also assumes importance due to the rise in fundamentalist terrorist groups such as ISIS that seek to spread their influence across the world including India.

INTERNAL SECURITY SITUATION

1.15 Due to the systematic and unrelenting efforts of Government, the internal security

situation in the country is firmly under control. Broadly, the challenges to internal security in India can be categorized into four threats viz. cross border terrorism in Jammu & Kashmir, militancy in the North East, Left Wing Extremism (LWE) in certain states and terrorism in the hinterland. Of these, there is steep decline in terror attacks in the hinterland and the violence perpetrated by LWE.

1.16 The security situation in J&K remained stable during the first half of the year. After the killing of a hardcore terrorist in July 2016, the separatists and terrorist tanzems focused their efforts to mobilize protests and disturb public peace. Due to the continuous efforts of the state government and Security Forces, the situation in J&K is currently tense but under control.

1.17 The security situation in the North Eastern States improved substantially in 2015 and the overall improvement has continued in 2016. In the year 2015, the insurgency related violence in the region had decreased by 30% compared to 2014. This year, there has been further improvement in security situation in the region as number of insurgency incidents has come down to 429 from 502 in the first ten months. Security forces losses have come down this year from 40 to 9 till 15.11.2016. While the States of Sikkim, Mizoram and Tripura have no insurgency related violence, the number of insurgency incidents has come down in Assam, Arunachal Pradesh, Nagaland, Manipur and Meghalaya. Pursuant to policy of talks/negotiation, a number of outfits have come forward for talks with Government and have entered into Suspension of Operations (SoO) agreements and some of them have signed Memorandums of Settlements (MoS) and some groups have dissolved themselves. Sustained

counter-insurgency operations are continuing against those outfits which are indulging in violent activities.

1.18 There was marked improvement in the LWE scenario in 2016. From overall expanse of 106 districts of 10 state affected by LWE, in 2016, affected districts have reduced to 68 with 80 percent of violence reported from only 24 districts in two states. The Government of India has a multi-prolonged strategy which includes

security measures, development measures, ensuring Rights and Entitlements of local communities etc. to deal with LWE problem. LWE situation in India has improved due to greater presence of security forces across the LWE affected States, loss of cadres/leaders on account of arrests, surrender & desertions of LWE cadre, better monitoring of development schemes in affected areas and insurgency fatigue among the LWE cadres.



ORGANISATION AND FUNCTIONS OF THE MINISTRY OF DEFENCE



Organisation and Functions of the Ministry of Defence

ORGANISATIONAL SET-UP AND FUNCTIONS

2.1 After Independence, Ministry of Defence was created under the charge of a Cabinet Minister and each Service was placed under its own Commander-in-Chief. In 1955, the Commanders-in-Chief were renamed as the Chief of the Army Staff, the Chief of the Naval Staff and the Chief of the Air Staff. In November 1962, the Department of Defence Production was set up to deal with research, development and production of defence equipment. In November, 1965, the Department of Defence Supplies was created for planning and execution of schemes for import substitution of defence requirements. These two Departments were later merged to form the Department of Defence Production and Supplies. In 2004, the name of Department of Defence Production and Supplies was changed to Department of Defence Production. In 1980, the Department of Defence Research and Development was created. In 2004, the Department of Ex-Servicemen Welfare was set up.

2.2 The Defence Secretary functions as head of the Department of Defence and is additionally responsible for co-ordinating the activities of the four Departments in the Ministry.

THE MINISTRY AND ITS DEPARTMENTS

2.3 The principal task of the Ministry is to frame policy directions on defence and security related matters and communicate them for implementation to the Services Headquarters, Inter-Service Organisations, Production Establishments and Research & Development Organisations. It is required to ensure effective implementation of the Government's policy directions and the execution of approved programmes within the allocated resources.

2.4 The principal functions of the Departments are as follows:

- (i) The Department of Defence deals with the Integrated Defence Staff (IDS) and three Services and various Inter Service Organisations. It is also responsible for the Defence Budget, establishment matters, defence policy, matters relating to Parliament, defence co-operation with foreign countries and co-ordination of all defence related activities.
- (ii) The Department of Defence Production is headed by a Secretary and deals with matters pertaining to defence production, indigenisation of imported stores, equipment and spares, planning and control of departmental production units of the Ordnance Factory Board and Defence Public Sector Undertakings (DPSUs).

- (iii) The Department of Defence Research and Development is headed by a Secretary. Its function is to advise the Government on scientific aspects of military equipment and logistics and the formulation of research, design and development plans for equipment required by the Services.
- (iv) The Department of Ex-Servicemen Welfare is headed by a Secretary and deals with all resettlement, welfare and pensionary matters of Ex-Servicemen.

2.5 A list of subjects dealt with by various Departments and Finance Division of the Ministry of Defence is given in **Appendix-I** to this report.

2.6 Information regarding the Ministers in the Ministry of Defence, the Chiefs of Staff, the Secretaries in the Departments of the Ministry and the Secretary (Defence Finance)/Financial Advisor (Defence Services) who held positions during the period of this report is given in **Appendix-II** to this report.

HEADQUARTERS INTEGRATED DEFENCE STAFF (HQ IDS)

2.7 HQ IDS was raised on October 1, 2001 based on the recommendations of Group of Ministers (GoM) on the Kargil Review Committee (KRC) report. The HQ was raised under the overall Command & Control of Chairman Chiefs of Staff Committee (COSC) to foster Jointness and synergy amongst the three Services. Since its inception, this HQ has achieved considerable milestones in Joint and integrated planning, coordination of intelligence, Joint conduct of Humanitarian Assistance and Disaster Relief (HADR) operations through DCMG and prioritising/streamlining procurements. Salient activities of HQ IDS, during the year, are enunciated in succeeding paras.

2.8 **Turnover of Chairman Chiefs of Staff Committee:** Chief of the Naval Staff took over charge as Chairman Chiefs of Staff Committee on December 31, 2016 (AN) consequent on the superannuation from Service of Chief of the Air Staff who was the previous incumbent. The event was marked by a Baton handing over ceremony conducted on December 29, 2016 attended by senior officers of the three Service HQs & HQ IDS.



2.9 **Unified Commanders' Conference (UCC):** HQ IDS conducted the Unified Commanders' Conference (UCC) at New Delhi on June 23-24, 2016. The conference was addressed by Raksha Mantri and attended by senior military and civil officials dealing with Tri-Services issues.



2.10 **Coordinated Patrol (CORPAT):** The Ships and Aircrafts of Andaman and Nicobar Command participated in coordinated Patrols "CORPAT" alongwith the Navies of Thailand,

Indonesia and Myanmar. The aim of this CORPAT is to enhance mutual understanding and interoperability between the Navies and prosecute vessels engaged in unlawful activities by undertaking joint patrolling.

2.11 Defence Communication Network (DCN): Project DCN is envisaged as a strategic, exclusive and a highly secure tri-services communication network that will facilitate effective command, control and decision-making at the national level. It was inaugurated by Raksha Mantri on June 30, 2016.

2.12 Humanitarian Assistance and Disaster Relief (HADR): HQ IDS coordinated the conduct of three major HADR exercises incorporating resources of all three Services as well as other stakeholders such as NDRF and local civil officials. These three exercises and simulated disaster situation were Exercise JAL RAHAT



(Floods in Urban Area) at Guwahati from June 28-30, 2016, Exercise PRAKAMPANA (Super Cyclone in Coastal Area) at Vishakhapatnam from August 30 – September 1, 2016 and Exercise SAHAYATA (Major Earthquake) at Bhuj from September 14 – 16, 2016.

2.13 Indian National Defence University (INDU): Work on establishing INDU as the premier Indian University dealing with issue of National Security has made good progress. Public consultation on draft INDU Bill has been held online and construction of boundary pillars at the earmarked site has started. The draft Bill is likely to be put up for parliamentary ratification in 2017.

2.14 National War Memorial & Museum: A global design competition has been held for both the National War Memorial and the Museum. Once the shortlisted designs are finalised, the execution phase will commence at India Gate Complex for National War Memorial and Princess Park Complex for the National War Museum.

ARMED FORCES TRIBUNAL

2.15 The Government has established an Armed Forces Tribunal (AFT) for the adjudication of complaints and disputes regarding service matters and appeals arising out of the verdicts of the Courts Martial of the members of the three Services (Army, Navy and Air Force) to provide for speedy justice to the members of the Armed Forces.

2.16 At present, the Principal Bench at Delhi and Regional Benches at Chennai, Jaipur, Lucknow, Chandigarh, Kolkata, Kochi, Guwahati, Mumbai, Jabalpur and Srinagar are functional.

BORDER ROADS ORGANIZATION

2.17 Border Roads Organization (BRO) is

a road construction Organisation, integral to and in support of Army. It started operations in May 1960 with two Projects. It has now grown into an 18 Project Organisation. Nine BRO projects are located in Western India (4 in J&K, 2 in Himachal Pradesh, 2 in Uttarakhand and 1 in Rajasthan), 8 BRO projects are located in Eastern India (1 in Sikkim, 4 in Arunachal Pradesh, 1 in Nagaland, 1 in Mizoram and 1 in Tripura) and 1 in Bhutan.

2.18 BRO is mainly entrusted with the task of construction and maintenance of roads in the border area, in keeping with defence requirements. These roads are developed and maintained through funds provided under different heads.

2.19 Cabinet Secretariat has amended Government of India (Allocation of Business) Rules, 1961 vide Notification dated January 9, 2015 to include all matters relating to Border Roads Development Board and Border Roads Organisation under Ministry of Defence. The implementation and monitoring of the infrastructure development by BRO is being monitored by Border Roads Development Board (BRDB) with Raksha Rajya Mantri as its Chairman.

2.20 BRO has earned a reputation of being the only road construction agency to construct and maintain roads in difficult, isolated and inhospitable terrain in inclement climatic conditions. BRO has constructed approximately 51,000 Km of roads, 498 major permanent bridges of 45,263 m length and 19 airfields in these areas of the country. At present, BRO is working on 852 roads (39,049 Km), which include new construction, improvement from single lane to double lane (530 Nos and 22, 803 Km) and maintenance of 322 roads of 16247 Km. These 852 roads also include 61 Indo-China Border Roads (ICBRs). The construction

of 22 ICBRs has already been completed and initial connectivity to further 26 roads has been achieved. BRO is also maintaining five airfields. In addition, 2 Nos of Tunnels viz. Rohtang Tunnel (8.8 KM) in Himachal Pradesh and Theng (0.578 Km) in Sikkim are under construction.

DEFENCE (FINANCE)

2.21 Finance Division in the Ministry of Defence deals with all matters having a financial implication. This Division is headed by Secretary (Defence Finance)/ Financial Advisor (Defence Services) and is fully integrated with the Ministry. It performs an advisory role.

2.22 The Ministry of Defence enjoys enhanced delegated financial powers to facilitate quicker decision making. These powers are exercised with the concurrence of the Finance Division. With a view to ensuring transparency in exercise of these powers in respect of defence procurement matters and compliance with the laid down policy guidelines, the Defence Procurement Procedure and Defence Procurement Manual are updated from time to time.

2.23 Finance Division prepares and monitors Defence Services Estimates, Civil Estimates of the Ministry of Defence and the Estimates in respect of Defence Pensions. Break-up of the actual expenditure for the years 2014-15 and 2015-16, as also the Revised Estimates for 2016-17 and Budget Estimates for 2017-18 in respect of Defence Services Estimates are given in Table No. 2.1 and the relevant graph/chart at the end of this Chapter.

2.24 Summary of latest report of the Comptroller & Auditor General of India on the working of the Ministry of Defence is given in **Appendix-III** to this Annual Report.

2.25 The position of Action Taken Notes

(ATNs) as on 31.12.2016 in respect of observations made in the C&AG Reports/PAC Reports is given as **Appendix-IV** to this Annual Report.

Table 2.1
Service / Department-wise break up of Defence Expenditure/ Estimates

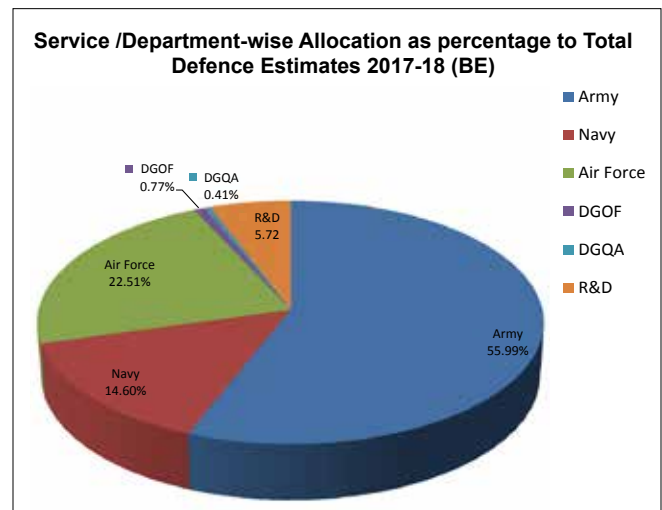
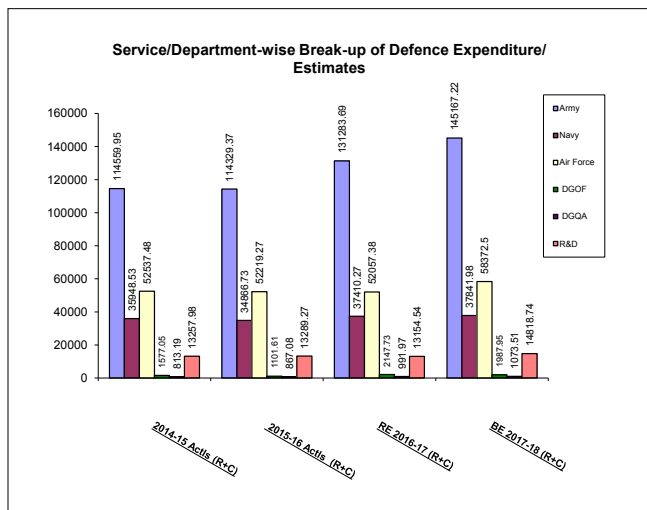
(₹ in crore)

	2014-15 Actuals (Rev+Cap)	2015-16 Actuals (Rev+Cap)	RE 2016-17 (Rev+Cap)	BE 2017-18 (Rev+Cap)
Army	114559.95	114329.37	131283.69	145167.22
Navy	35948.53	34866.73	37410.27	37841.98
Air Force	52537.48	52219.27	52057.38	58372.50
DGOF	1577.05	1101.61	2147.73	1987.95
DGQA	813.19	867.08	991.97	1073.51
R&D	13257.98	13289.27	13154.54	14818.74
Total	218694.18	216673.33	237045.58	259161.90

DGOF – Directorate General of Ordnance Factories

DGQA – Director General of Quality Assurance

R&D – Research & Development



INDIAN ARMY



Indian Army

3.1 The changing global geo-political dynamics presents the Nation with multiple security challenges. While constantly reviewing its operational preparedness/ postures to meet the perceived security challenges, the Indian Army (IA) is committed to the defence of the country from external and internal threats across the entire spectrum of warfare. Also, in times of disaster/ natural calamities, the Indian Army is in the forefront, providing aid and succour to the affected people.

JAMMU AND KASHMIR

3.2 The security situation in J&K is at an important crossroads. The dynamics along the Line of Control have undergone a change, with Pakistan repeatedly violating the Cease Fire Agreement. These violations have been responded to proportionately at various levels. Relentless Counter Terrorist operations by the Army in the hinterland along with other Security Forces have thwarted the plans of Pakistan to give a fillip to the proxy war being waged against India. Terrorists have tried to use the adverse internal security situation to target the Security Forces by merging with the agitating crowd. Reports suggest that while there is overt peace, strong undercurrents exist amongst the local population which may be exploited by the Nexus (Pakistan, Separatists & Terrorists).

3.3 **Cease Fire Violations (CFVs):** During the year 2016, there have been 228 CFVs by Pakistan though the year 2015 witnessed 152

CFVs. Appropriate retaliation to CFVs has been carried out at various levels.

3.4 **Infiltration Bids Eliminated (IBsE):** During the year 2016 (till November 22, 2016), 27 Infiltration Bids have been eliminated in which 37 terrorists have been killed. In 2015, the Army eliminated 18 infiltration bids resulting in killing of 30 terrorists.

Situation in the Hinterland

3.5 **Counter Terrorist Operations:** During the year 2016, relentless and surgical people friendly operations based on a credible intelligence network have resulted in the elimination of 102 terrorists in the hinterland and huge warlike stores recovered. In 2015, the Army had killed 67 terrorists in the hinterland of Jammu and Kashmir. This year, 63 Army personnel have achieved martyrdom in the state of J&K, while undertaking Counter Infiltration/ Counter Terrorist operations.

3.6 **Terrorist Initiated Incidents (TIIs):** During the year 2016, 92 TIIs have taken place in which seven terrorists have been killed. In 2015, there have been 48 terrorist initiated incidents in the hinterland.

NORTH EAST

3.7 The security situation in the North Eastern States has remained complex, fluid and dynamic with sporadic incidents of violence over the year. Proactive approach,

coupled with intelligence based operations undertaken by the Security Forces (SF), has resulted in successful curtailment of the scale of violence in insurgency prone areas of the North East. Owing to successful execution of comprehensive action plan by the SF against the insurgent groups, the violence levels registered a decrease of approximately 15%, thus ensuring moral ascendancy of SF and Government machinery in the region.

3.8 Proactive operations by SF continued and in 2016, 911 terrorists have been neutralized (42 Killed and 869 Apprehended) along with recovery of 874 weapons by Army/ Assam Rifles. Further, largely due to the efforts of the SF, adequate space has been created for other stakeholders to take lead in the process of finding a lasting political solution and ensure peace in North East.

3.9 **Assam:** The security situation in the State remained largely peaceful and under control. Calibrated, synergized and coordinated operations by SF significantly reduced the operational space of insurgent groups. NDFB (S) has been marginalized leading to demoralization and disenchantment amongst its cadres. Insurgent groups are facing acute financial crunch and have resorted to sporadic acts of violence to prove their relevance. Peaceful conduct of Assam Assembly elections in April 2016 indicates a growing desire for peace and development in the region.

3.10 **Nagaland:** Security situation in the State has improved considerably since 2015. NSCN (Khaplang) has been marginalized due to focused counter insurgency operations by SF and presently its activities are confined to Eastern Nagaland and Myanmar Naga Hills. Concerted and relentless operations by SF along India – Myanmar border has severely dented the outfit physically and psychologically.

3.11 There is a growing public disenchantment against Naga Political Groups (NPGs). Against Corruption and Unabated Taxation (ACAUT), Naga Tribal Council (NTC, the apex body of Naga tribes of Nagaland) and Lotha Hoho have denounced unauthorised taxation by NPGs. These organisations have also condemned the threat call released by NSCN (IM) against various social organisations. The open defiance of the Naga groups by the social organisations is a positive development. However, NSCN (IM) continues with financial and military consolidation.

3.12 **Manipur:** The State continued to be the most disturbed State in North East region. Majority of the violence has been perpetrated by Valley based groups as they accounted for approximately 55% of the violence in Manipur. Inter-tribal rivalry and insider-outsider divide was prominently visible during 2016.

3.13 Demand of implementation of Inner Line Permit and its opposition were the main factors for protests in Manipur. Politics of Blockades and Bandhs continued to prevail and led to increasing fissures amongst the three major communities namely; Meiteis, Nagas and Kukis. The proposal by Manipur Government to create new districts led to the economic blockade spearheaded by United Naga Council since November 1, 2016. The announcement regarding creation of seven new districts in Manipur on December 8, 2016 witnessed further intensification of the economic blockade and a fillip to violent activities in the region. The announcement also altered the existing ethnic dynamics and led to allignment of Meiteis and Kukis against Nagas. This ethnic polarisation may further intensify due to upcoming Assembly Elections in the state in March 2017.

3.14 **Arunachal Pradesh:** Security situation in the state in areas excluding southern Arunachal

Pradesh has been gradually improving in terms of reduction in violent incidents, lower civilian casualties and increasing number of apprehension of terrorists. Synergized operations by SF have reduced the operational space of insurgents.

3.15 Longding, Tirap and Changlang districts of the State are affected by the presence of various insurgent groups who continue with their attempts to establish their writ in the region. Cadres of NDFB(S) and ULFA (I) frequent the State (for shelter/transit) sharing borders with Assam and Myanmar.

3.16 **Meghalaya:** The violence remained largely confined to Garo hills perpetrated by the GNLA. Spillover of the activities of these groups was also visible in neighbouring districts of Goalpara and Dhubri in Assam.

Situation Along the India-China Border

3.17 The situation along India-China border continues to be peaceful. There are few areas along the border where India and China have differing perception of the LAC. Both sides patrol upto their respective perceptions of LAC. Specific cases of transgression by Chinese patrols into such areas across LAC are taken up with Chinese authorities through the established mechanism of Hot Lines, Border Personnel Meetings (BPM) and Flag Meetings.

3.18 **Implementation of Border Defence Cooperation Agreement (BDCA):** During the year, both countries have had wide ranging discussions on implementation of BDCA. Towards this, the scope of the Border Personnel Meetings has been increased to include conduct of non-contact games and joint celebration of festivals. In addition, following Confidence Building Measures (CBMs) are in process of implementation :-

- (a) **New BPM Mechanism:** The mechanism is used to discuss all contentious issues at local level. The BPM mechanisms have been instrumental in maintaining Peace and Tranquillity along India-China border. Two new BPM mechanisms (Track Junction in Eastern Ladakh and Kibithu in Arunachal Pradesh) were institutionalised between India and China along Northern Borders in 2015. Additional BPM sites are under consideration.
- (b) **Hotline between India and China:** India and China agreed to establish a Hotline between the Military Headquarters of the two countries as part of BDCA 2013. Discussions are on to operationalise it at the earliest.
- (c) **Joint Humanitarian Assistance and Disaster Relief (HADR) Exercise:** As part of CBMs between Border Guarding Troops of India and China, one Joint HADR Exercise at platoon level was conducted in Eastern Sector in 2015 and two in Western Sector in 2016.

3.19 **Sixth Hand-in-Hand Joint Training Exercise (JTE):** The Sixth Hand-in-Hand Joint Training Exercise was held in Pune (India) during November 16-26, 2016 and is aimed at building and promoting positive military relations, inter-operability and undertaking joint operations in Counter Terrorist environment. These exercises provided valuable opportunity for greater professional military interaction and enhance confidence in each other.

DEFENCE COOPERATION WITH FRIENDLY FOREIGN COUNTRIES

3.20 Defence Cooperation activities constitute an important tool for furtherance of national interests. In keeping with India's rising global stature in recent years, there

has been a considerable increase in Defence Cooperation activities undertaken by the Indian Army. Accordingly, an increasing number of Friendly Foreign Countries (FFCs) have shown keen interest to engage with the Indian Army, which is viewed not only as the world's second largest standing Army but also as a professional, apolitical force with extensive combat experience and exemplary training standards. As on date, Indian Army undertakes defence cooperation activities with 98 countries.

3.21 Structured Engagement: The Government of India has entered into MoUs/ Defence Cooperation Agreements with 54 countries. Indian Army holds Army-to-Army Staff Talks (including Executive Steering Groups) with 12 countries on a one-on-one basis. These provide the formal basis for progressing our defence cooperation initiatives. For engagement with Nepal, there is a joint Ministry of Defence, Ministry of External Affairs mechanism called Nepal India Bilateral Consultative Group (NIBCG). A similar multi ministry engagement exists with Russia.

3.22 There are 70 Military/ Defence Attaches including 31 from the Army posted in 44 Defence Wings abroad.

3.23 Nepal: The focus on enhancing military to military relations as part of ongoing defence cooperation between India and Nepal continues to be strengthened in various fields by providing defence equipment, training of persons of Nepal Army, through visits of medical teams, trekking teams and visit of senior officers. Capability enhancement of the Nepal Army is also being undertaken.

3.24 Bhutan: In keeping with the traditional close ties with Bhutan, assistance is being provided for capacity building of the Royal

Bhutan Army and Royal Body Guards to further enhance strategic relations.

3.25 Myanmar: 26 mules/ horses were gifted to Myanmar Army at an estimated book value of ₹ 48,12,990/- and handed over during a ceremony organized for this purpose on September 12, 2016 near Moreh. A two member delegation of IA from RVC visited Myanmar for a period of seven days from September 22-28, 2016 to assist setting up necessary infrastructure for equine breeding facilities in Myanmar.

3.26 Cambodia: A fifteen member team of Cambodian Army underwent three week 'Dog Handlers Course' at RVC Centre & College, Meerut Cantt. from October 18, 2016 to November 9, 2016. 15 Sniffer Dogs (MD) were gifted to Cambodian Army on November 10, 2016. A five member IA delegation visited Cambodia for seven days from November 10-16, 2016 for handing over 15 Sniffer Dogs (MD) to the Cambodian Army and setting up a canine base at Cambodia.

Training and Joint Exercises

3.27 Joint Exercises with FFCs constitute the most visible component of India's defence cooperation activities. These events showcase its professionalism globally and provide valuable exposure to its troops. These involve sharing of experience, understanding the changing dynamics of military operations, developing inter-operability and streamlining the procurement procedures for combined operations including Humanitarian Assistance and Disaster Relief (HADR) Exercises. As on date, Indian Army has 24 instituted exercises with 19 countries. For the year 2016-17, of the 20 exercises planned, 12 exercises have been conducted till end November 2016. The theme for the exercises is counter insurgency/ counter terrorism under UN Charter/ Humanitarian

Assistance and Disaster Relief. Exercises with Singapore are field firing exercises held in India.

3.28 Courses run in Indian training establishments are valued worldwide for their professional content and apolitical nature. 2426 foreign officers and NCOs have undertaken such training in 2015-16. On the other hand, 65 of Indian Army officers have trained abroad in foreign military institutions. Tailor-made training has been organized in desired fields for personnel of Afghanistan, Sri Lanka, Bangladesh and certain CAR and African nations. Additionally, there are structured exchanges between instructors of Indian institutions with their counterparts abroad.

3.29 The Indian Army contingents participated in multilateral professional competitions with foreign armies. Indian troops took part in the Tank Biathlon held in Russia and in the Cambrian Patrol in UK wherein the Indian Team achieved 'Gold Standard'. Indian Army also sent a number of observers in various competitions held in Russia, Kazakhstan and Sri Lanka. The Indian Army Band participated in the music festival in Japan during the visit of the Prime Minister to Japan. The Indian Army Band had also performed in Nepal during the visit of President of India to Nepal.

ASEAN Defence Ministers' Meet (ADMM) Plus

3.30 India is co-chair with Vietnam for Executive Working Group on Humanitarian Mine Action for 2013-2017 under the ASEAN Defence Ministers' Meet (ADMM) Plus construct. Additionally, a number of mutually beneficial initiatives have been undertaken to include Training Team for Indian Army to impart training to Cambodian Armed Forces in Demining Operations and recovery of unexploded munitions and in UN peacekeeping operations. India shall take over the co-chair of

expert Working Group on Military Medicine along with Vietnam from 2017 onwards for three years.

3.31 **Field Training Exercise (FTX) 2016:** Indian Army hosted all members of ADMM PLUS for a Field training Exercise in March 2016. The Exercise was themed on humanitarian mine action and UN peacekeeping operations. 361 participants and observers formed part of the exercise.

Training Teams

3.32 Training Teams are deployed on the request from the host nation on a specific mandate for each country. Broadly, the mandate includes imparting training on English language, military tactics, logistics, IT, technical assistance in field of engineering and communication etc. In addition, the team leaders in some countries have also been bestowed with the responsibility of Military and Security Advisors to the host countries.

3.33 Presently, ten Indian Army Training Teams are deployed in friendly foreign countries viz. Vietnam, Lao PDR, Myanmar, Tajikistan, Seychelles, Namibia, Uganda, Bangladesh and Bhutan. Expansion of some training teams is underway. Deployment of training teams/experts at Sri Lanka, Kyrgyzstan, Mozambique and Nigeria are under consideration.

MILITARY CIVIC ACTION PROGRAMMES

3.34 Army has undertaken a large number of Military Civic Action Programmes sponsored and funded by the Government of India aimed at "Winning Hearts and Minds" of the people in the areas affected by terrorism and insurgency in Jammu & Kashmir and North Eastern States under "Operation Sadbhavana". The focus of Operation Sadbhavana in these regions has been towards development of core social indices of

'Quality Education, Women Empowerment, Community and Infrastructural Development, Health and Veterinary Care, Development of Gujjar/ Bakarwals and Nation Building'.

3.35 Indian Army in its ongoing programme under 'Operation Sadbhavana' provided veterinary cover and treated sizeable number of animals in hostile areas of Eastern & Northern frontiers. A total of 82,740 animals were treated at various veterinary aid camps in Eastern and Northern Command during the year 2016.

MODERNISATION AND EQUIPMENT

3.36 The major Army acquisitions focused on modernisation, building new capabilities as well as making up deficiencies in the inventory while giving due impetus to indigenisation. During the year, the Army focused on reducing procurement timelines. Major strides were taken in streamlining the evolution of Qualitative Requirements, Request for Proposal formulation and evolution of new methods of field evaluations, which include aligning all Standard Operating Procedures (SOPs) to Defence Procurement Procedure-2016. The changes made would result in making the acquisition process more efficient.

3.37 During Financial Year 2016-17 (up to December 2016), eight contracts have been signed at a total cost of ₹ 11801.21 crore. These include contracts for Rocket Systems, Missiles, Howitzers and Ballistic Helmets. The focus in Capital Procurement has been to enhance the fire power capability of the Indian Army as also in providing basic protection to Infantry Soldiers operating in the field. Individually, various Arms and Services have a number of schemes that are currently at advanced stages in the procurement cycle. Some of these which will enhance combat efficiency are as under:

3.38 **Mechanised Forces:** Modernisation of the mechanized forces is underway to meet the

requirements of the future battle field. Towards this end, upgradation of in-service equipment by night enablement, modern fire control systems, better power packs, Anti-Tank Guided Missiles (ATGM) and Explosive Reactive Armour have been identified as the thrust areas. Concurrently, the indigenous development of future combat vehicle platforms has been initiated. Main Battle Tank Arjun Mark-2 which has been developed by DRDO is presently in the trials stage.

3.39 **Artillery:** The procurement of Artillery equipment is focused on modernization to 155mm caliber, acquisition of long range vectors, battle field transparency, unmanned Aerial Platforms and Weapon Locating Radars. Induction of long range vectors would add adequate muscle to the fire power of the Army. Procurement of Medium Range (MR) Battle Field Surveillance Radar (BFSR) is also being progressed to enhance the surveillance capability and is at an advanced stage of procurement.

3.40 **Infantry:** Modernisation of the infantry soldier is aimed at enhancing lethality and providing individual protection. Towards this end, procurement cases for modern weapons such as ATGMs, Sub Machine Gun with Ammunition, Light Machine Gun, Assault Rifles & Under Barrel Grenade Launcher (UBGL) and Close Quarter Battle (CQB) Carbines are being progressed. To enhance the individual protection of troops, Ballistic Helmets and Bullet Proof Jackets are being procured. For enhancing mobility of Infantry weapon crews, procurement of Light Specialist Vehicles and Light Strike Vehicles are being progressed. Mini UAVs too are being procured which would greatly enhance the surveillance capability and thus the situational awareness of the Infantry Battalions.

3.41 **Army Air Defence:** The Corps of Army Air Defence is taking major strides in upgrading its guns, missiles and radar systems. Procurement of Medium Range Surface to Air Missile (MRSAM), Short Range Surface to Air Missile (SRSAM), Quick Reaction Surface to Air Missiles (QRSAM), Self Propelled Air Defence (SPAD) Gun Missile System and Very Short Range Air Defence System (VSHORADS) is being carried out to replace the existing vintage equipment. Upgrade of existing equipment is also being carried out.

3.42 **Army Aviation:** Procurement cases of major equipment like Kamov helicopters which would be replacing the ageing fleet of Cheetah and Chetak Helicopters and Advanced Light Helicopters are underway. Acceptance of Necessity (AoN) has also been granted for procurement of Light Combat Helicopters. Procurement of rocket ammunition for ALH (WSI), Air to Air Missile for Advance Light Helicopter (ALH) Weapon System Integrated (WSI) and Procurement of Search & Rescue Equipment (SAR) is in progress.

3.43 **Corps of Engineers:** Renewed impetus has been accorded on modernizing the equipment profile. Considerable progress has been made in a number of procurement cases which include Surface Mine Clearing Systems, Dual Tech Mine Detectors, 7/12 Ton Excavators and 10 M Short Span Bridge. Regular interaction, close monitoring and synergy with developing partners like DRDO have yielded rich dividends. Its expertise in countering the Improvised Explosive Device (IED) threat has gained more credence with the promulgation of the New Counter IED Policy in February 2016.

3.44 **Annual Acquisition Plan (AAP) 2016-18:** During the beginning of Financial Year, 120 cases were in AAP Part 'A' and 137 in AAP Part

'B'. Out of 120 cases in Part 'A', eight contracts have been concluded. 33 procurement cases are in advanced stages of procurement (CFA approval and CNC stage). Seven new AoNs have been granted in the current financial year.

3.45 **Ammunitions:** To supplement existing production capacity of Ordnance Factories, eight ammunition categories have been proposed to be offered to Indian Industry for manufacture. A Request for Information has been floated concerning the same on the Government e-procurement Portal on November 18, 2016. An industry interaction between representatives of Indian industry with Service HQ of Ministry of Defence was held at New Delhi on December 9, 2016. The project is likely to result in better ammunition reserves and greater level of indigenization of ammunition production in India and reducing dependence on imports.

3.46 **Ammunition Roll on Plan:** The management of ammunition is done by placing five year Roll on Indent on Ordnance Factory Board (OFB) to enable it to plan its production. The indent is placed on mutually agreed targets keeping the OFB capacity in view.

- (a) The first five year Roll on Indent for 2010 to 2014 was placed on OFB in February 2010 for ₹ 24,311 crore for 113 ammunition items. OFB produced ammunition worth ₹ 18,314 crore.
- (b) The second Roll on Indent was placed on OFB in October 2013 for projected requirement of five year perspective plan for year 2014 to 2019. Production reports of OFB are being monitored on a monthly basis.

3.47 **Ammunition Road Map:** During mid-course evaluation of five year Roll on plan of ammunition, need was felt for preparing Ammunition Road Map to address the

criticalities. An Ammunition Road Map was approved by Ministry of Defence to meet the criticalities in ammunition requirement. The ammunition procurement plan along with budgetary implications was approved as under:

- (a) **Ex Ordnance Factories:** Additional indents have been placed on Ordnance Factories for manufacturing 22 items of ammunition for Financial Year 2013-14 costing ₹ 963 crore and 30 items for Financial Year 2014-15 costing ₹ 1964 crore.
- (b) **Ex Import:** 35 ammunition items costing ₹ 16,637 crore have been approved in the Ammunition Road Map.

3.48 **Armament**

- (a) **Armament Ex OFB:** Based on Annual Provision Review, indent is placed on OFB for manufacture of armament for which OFB has the Capacity and Technology. The Armament cases which are manufactured by OFB are 84 mm RL MK-III, 7.62 mm MMG, 105 mm LFG & Dhanush.
- (b) **Armament Ex Import:** Due to non-availability of technology, inadequate capacity and inability to develop arms indigenously, certain armament are imported. Recent ex-import procurement cases include 84 mm RL MK-III, 30 mm AGS/ AGL, 40 mm UBGL, 7.62 mm Galil Sniper Rifle & 9 mm Submachine MP-9 gun.

3.49 **Weapon Night Sights & Surveillance Devices:** The requirement of Image Intensifier Night Vision Devices (NVD) for Armour Fighting Vehicles (AFV) & Non-AFV applications of Indian Army are met by M/s. BEL & OLF. Present procurement cases from M/s. BEL include Hand Held Thermal Imager (HHTI), HHTI with Laser Range Finder (LRF), Passive

Night Vision Goggles (PNVG), Passive Night Vision Binoculars (PNVB), Passive Night Sights (PNS) for INSAS Rifle/LMG & from OLF include Image Intensifier & Thermal Imagery Sights for AFV platforms.

3.50 **Miscellaneous Equipment:** In addition to acquisitions specific to various arms, induction of Specialist Vehicles, Material Handling Equipment and Critical Rolling Stock for rail movement are in the pipeline. Modernisation of logistics installations with state of the art warehousing facilities and accounting systems is also underway. Projects for Electronic Warfare, Communication and Battlefield Management are also being undertaken.

RASHTRIYA RIFLES

3.51 Rashtriya Rifles since its raising, has also rendered invaluable assistance towards the security as well as socio-economic development of the Jammu & Kashmir. Rashtriya Rifles has successfully carried out relentless Counter Terrorist operations. The Force as a whole provided pivotal support for maintaining peace and tranquillity in the state during fomenting unrest in the valley mostly triggered by the elimination of LeT terrorist Burhan Wani in the month of July 2016.

3.52 Utmost patience and perseverance yet urgency were maintained for conversion of untiring efforts into successful operations. During this period, units of Rashtriya Rifles were able to exert unrelenting pressure on the terrorists and their sympathizers. The efforts of the Force have ensured peace and near normalcy in the area with unyielding operations against the forces of terror.

3.53 **Shri Amarnath ji Yatra:** RR units and formations played a major role in ensuring peaceful conduct of Yatra by early and tiered deployment, aggressive domination and sound intelligence network. Full assistance including

medical cover was provided to facilitate the movement of the devotees.

3.54 People Friendly Operations: A large number of people friendly activities were undertaken to shape the people's perception about the Army which has made a visible change in the way people perceive the Army, besides increasing the comfort levels between 'Awaam' and 'Jawan'. Youth Employment and Guidance Nodes (YEGN), conducted by Rashtriya Rifles effectively targeted the unemployed youth of the state and helped them explore avenues of higher education and employment, thus guiding them away from the lure of easy money and a misplaced sense of power through terrorism.



3.55 Creation of Rashtriya Rifles, the only specially structured Counter Insurgency/

Counter Terrorist (CI/CT) Force in the world has been one of the finest examples of a strategic decision with a long term perspective. The expertise gained is invaluable in building comprehensive National Power and needs to be preserved in perpetuity.

TERRITORIAL ARMY (TA)

3.56 The Territorial Army (TA) Act was enacted in 1948. The concept of the TA is to provide part time military training to gainfully employ citizens who become competent soldiers as a result of the military training imparted to them.

3.57 Territorial Army Day: On the occasion of Territorial Army Day, Territorial Army Day Parade was held at Army Parade Ground, Delhi Cantonment on October 9, 2016 and was reviewed by Chief of Army Staff. Ten marching contingents comprising of Inf (TA) units and Home & Hearth (TA) units, ten Infantry Battalion (TA) unit Pipe Bands and three tableaux of Department (TA) units participated in the parade. As part of the TA Day Celebrations, Officers, JCOs, OR and families of the Territorial Army, called on The President of India, at Rashtrapati Bhawan on October 6, 2016.

3.58 COAS Silver Trophy for the year 2016-17: 159 Infantry Battalion (TA) (H&H) DOGRA



has been declared as Best Infantry Battalion (TA) amongst 42 TA units (Infantry and Home & Hearth Units). The trophy was presented by Lt. Gen to the unit on October 9, 2016 during TA Day Reception at Terrier Hostel.

3.59 **Contribution of Territorial Army Units**

- (a) **Counter Insurgency/ Counter Terrorism and Internal Security:** Presently, approximately 75 percent of TA units are deployed in the Counter Insurgency/ Counter Terrorism environment in Jammu & Kashmir and North-East and are playing an important role as an adjunct to the Regular Army for carrying out assigned tasks in a professional manner.
- (b) **Conservation of Ecology:** The eight ETF Battalions (TA) are doing excellent work in the restoration of ecology in degraded and difficult areas of country. These units have planted approximately 6.42 crore Sapplings and covered an area of approximately 71618 hectares. The efforts of ETF Battalions (TA) have been appreciated by one and all.

3.60 **Raising of Three Engineer Regiments (Territorial Army):** Three Engineer Regiments (TA) for repair and maintenance of Line of Control in Northern Command (Jammu and Kashmir) were raised in March 2015. These Regiments have become operational w.e.f. February 2016.

3.61 **Grant of TA Commission:** An Assistant Executive Engineer (Production), working with ONGC has been granted commission in rank of Lieutenant in 811 Engineer Regiment ONGC (TA). She was granted commission on September 30, 2016 and has become first woman to join Oil Sector Departmental unit of Territorial Army

as an officer. She is not only first women officer of Oil Sector TA unit but, as on date is also the only woman officer in Territorial Army.

3.62 During the year 2016, 64 persons were granted Commission in TA. Details are as under:-

- (a) Non Department (TA) units - 33
- (b) Department (TA) units - 31

UN MISSIONS

3.63 India has been an active contributor to UN Peacekeeping Operations since 1950 when one Indian Field Hospital consisting of 346 personnel was deployed in Korea. Presently India contributes approximately 6800 personnel in eight UN Missions worldwide. Since 1950, India has participated in 49 UN missions out of the total of 69 UN missions, contributing more than 2,20,000 Indian troops. 153 Indian Army soldiers have so far made the supreme sacrifice during these Missions.

3.64 A number of steps have been undertaken to enhance the serviceability of equipment/ vehicles held by our contingents deployed in UN missions thereby improving their operational effectiveness. Our present contributions are given in succeeding paragraphs.

3.65 **United Nations Mission in Democratic Republic of Congo (MONUSCO):** India's contribution to MONUSCO commenced with the deputation of Military Observers (MILOBs) in 1999. Currently, India deploys an Infantry Brigade Group with four Infantry Battalion Groups, Brigade Signal Company and a Level III hospital. The Brigade has performed commendably in achieving the desired operational goals based on the mandated tasks. Indian peacekeepers were injured in an IED blast on November 8, 2016 and 11 armed group cadres were neutralised and one apprehended

by Indian contingent to protect civilians. India has agreed to convert an already deployed Indian Battalion group as a Rapid Deployable Battalion (RDB) and the process of conversion is underway.

3.66 United Nations Mission in South Sudan (UNMISS): India is the largest troop contributor to UNMISS and has deployed Two Infantry Battalion Groups, Staff Officers (SOs) and MILOBs in the mission including a new Level II (Plus) hospital in Juba. The challenging operating conditions of South Sudan have not dissuaded the Indian contingents in fulfilling their mandate. Timely and resolute actions by the Indian contingents during clashes in Malakal and Juba in March and October 2016, respectively have resulted in saving numerous lives.

3.67 United Nations Interim Force in Lebanon (UNIFIL): The Indian Army's contribution to UNIFIL includes one Infantry Battalion Group, Level I Hospital and Staff Officers. The Battalion is mandated to monitor the Blue Line against any violation of line of withdrawal between Lebanon and Israel occupied Cheeba Farms. The area of operations of the battalion is sensitive and any violation of ceasefire is covered by international media. The Indian contingent continues to operate professionally

to maintain peace in the area.

3.68 United Nations Disengagement Observe Force (UNDOF): The ongoing crisis in Syria had forced the mission to restrict its deployment to only one side of the mission's Area of Operations (AO) since September 2014. India has deployed a logistic contingent in the mission responsible for providing second line logistic support to the mission. Major General JS Menon, VSM has been the Force Commander of this mission since March 14, 2016. The mission is now re-establishing its control on the other side (Syrian side) of its AO thereby necessitating re-structuring of the mission's components including the Indian Logistic Battalion. Part of the Indian Logistic Battalion has been deployed on the Syrian side of the mission's AO to provide second line logistic support to the mission.

3.69 Centre for UN Peacekeeping (CUNPK): The Centre for United Nations Peacekeeping (CUNPK) is the nodal agency for Peacekeeping related training activities in the country. Every year, it trains a number of officers from all three services, Central Armed Police Forces (CAPFs) and also from friendly foreign countries. The courses run by CUNPK have been appreciated by UN and various Friendly Foreign Nations for their comprehensive content and flawless conduct.



INDIAN NAVY



Indian Navy

4.1 India is a maritime nation and the country sits astride a large number of busy International Shipping Lanes that criss-cross the Indian Ocean. More than 90% of its trade by volume and 70% by value is transported over the seas. For a rapidly growing economy seeking new markets worldwide, these trade figures will only spiral upwards in the future.

4.2 India's economic resurgence is directly linked to her overseas trade and energy needs, most of which are transported by sea. Mercantile trade constitutes more than 40% of India's GDP, and is likely to increase in the future. Maintenance of a secure maritime environment, which enables unhindered pursuit of economic activities, is, therefore, essential for the overall economic development and security of the country.

4.3 The last decade has witnessed India's dependence on her maritime environment expanding substantially as her economic, military and technological strength grew, her global interactions widened and her national security imperatives and political interests stretched gradually beyond the Indian Ocean Region. It can thus be assumed that the 21st century will be the 'Century of the Seas' for India and that the oceans will remain a key enabler in her global resurgence.

4.4 The Indian Navy (IN) has been playing a maritime leadership role in the Indian Ocean Region (IOR) due to its multi-dimensional

capabilities and active presence in the region. The environment in India's maritime neighbourhood is dynamic, with increased instabilities, deepening geopolitical and ethnic faultlines, growing military capabilities and wide range of security challenges. These pose a combination of conventional and sub-conventional threats emanating to India, at and from the seas. These threats and challenges require the Indian Navy to remain effective across the entire spectrum of combat operations and constantly reshape itself to meet future challenges.

4.5 The Indian Navy is the key enabler and guarantor of the country's maritime sovereignty and myriad use-of-the-sea activities. This is discharged by the Navy through its four roles – military, diplomatic, constabulary and benign. The objective of the Navy's military role is deterrence/ dissuasion against any intervention or act which is against National Interests, and the ability to inflict a crushing defeat on the adversary in the event of hostilities. A major objective of the Navy's Constabulary role is to ensure coastal and offshore security and implement anti-piracy measures, in conjunction with the Indian Coast Guard (ICG) and other Central and State agencies.

4.6 The IN has been actively pursuing activities towards capability building and capacity enhancement of Navies of friendly countries in the IOR. Towards this end, India has

been providing hardware and platforms, which includes ships and aircraft for EEZ surveillance. IN has also been instrumental in development of maritime infrastructure of friendly nations. IN initiatives contribute towards developing operational and technical skills to friendly foreign counters. Material assistance in terms of providing spares, AIS equipment, Ship Handling Simulators, ammunition, communication equipment, coastal surveillance radars, boats, etc. to navies/ maritime forces in the region has gone a long way in strengthening India's stature and bilateral ties.

4.7 One frontline Fleet ship has been continuously deployed in the Gulf of Aden region since October 2008 for anti-piracy operations and provide safe escort to merchant ships of Indian and foreign nationalities.

4.8 Protection to offshore assets, including Offshore Development Areas (ODAs), has been augmented by deployment of the newly inducted Immediate Support Vessels (ISVs). Regular exercises have been conducted at ODAs to validate the safety and security of ODA platforms which are vital to India's energy security.

Coastal Security

4.9 Indian Navy is the nodal agency responsible for overall maritime security which includes coastal security and offshore security. Due impetus has been accorded to coastal security issues in coordination with various national agencies and organisations. IN is offering assistance to BSF/ CISF/ State Marine Police for procurement, maintenance and operation of boats for coastal security. In addition, technical advice is also being offered for construction of jetties/ conclusion of AMC, wherever required. IN is also conducting training capsules for Marine Police/ CAPF regularly. IN has provided support for conceptualisation,

survey and drawing-up the training curriculum of the Marine Police Training Institute (MPTI), to be set up in Dwarka, Gujarat. IN has also issued a policy in May 2016 towards recognition of alert fishermen/ coastal residents.

4.10 The National Command Control Communication Intelligence (NC3I) Network inter-linking 51 stations of the IN and ICG and integrating multiple sensors is being effectively exploited towards developing domain awareness and for inter-agency coordination. IN is also enhancing coordination between all maritime stakeholders, including the Indian Coast Guard, Indian Air Force, Central and State maritime agencies, and national intelligence agencies for Maritime Domain Awareness and Network Centric Operations. In addition, the Navy is pursuing agreements for sharing of white shipping and air traffic information between friendly nations both in the IOR and beyond.

4.11 Towards strengthening coastal and offshore security, Fast Interceptor Crafts (FICs) and Immediate Support Vessels (ISVs) are being inducted into the IN. 23 ISVs have been commissioned for offshore security and are being deployed regularly for security of offshore installations. IN has inducted 83 out of 95 FICs into the Sagar Prahari Bal, with the balance being planned to be inducted by 2017. These



FIC using indigenously developed Biodiesel on Coastal Security Patrol

FICs are being employed optimally for coastal security missions.

4.12 Coastal and Offshore Security exercises are being conducted regularly in all coastal States and UTs towards streamlining existing mechanisms, improving inter-agency coordination and strengthening maritime, coastal and offshore security. 'Tat Suraksha', a combined coastal security exercise with participation by IN, Army, IAF, ICG and civil stakeholders was conducted in April 2016 in the Andaman & Nicobar Islands. In addition, an offshore security exercise, 'Exercise Prasthan' was conducted on April 22, 2016 on an oil platform off Mumbai. The IN continues to proactively engage with the fishermen and coastal communities through community interaction programmes towards integrating them into the maritime security matrix.



Coastal Security Exercise at Andaman & Nicobar Islands

4.13 **Coastal Security Seminar 2016:** IN conducted a Coastal Security (CS) Seminar at Mumbai on June 24, 2016, which saw the participation of 33 delegates from various organisations involved in the Coastal Security construct of Maharashtra. The seminar was aimed at facilitating a working level interaction of all stake holders in the State's Coastal Security set up.

4.14 A Coastal Security Awareness and Data Collection Campaign was conducted in the six coastal districts of Maharashtra from July 22 – August 28, 2016. The campaign was aimed to sensitise the local populace on coastal security issues as well as to update the data bank regarding vulnerable places and landing points on the Maharashtra Coast. Representatives from IN, ICG, Marine Police, Customs, Fisheries departments and ONGC interacted with about 3000 fishermen and discussed issues related to coastal security as well as their expected contribution to the same.

Anti-Piracy

4.15 IN has deployed 61 ships to the Gulf of Aden since October 2008 for anti-piracy escort duties. During these deployments, IN ships have escorted over 3,325 merchant vessels (388 Indian flagged) with over 24,450 Indian seafarers embarked onboard. Due to robust action and continued vigilance by the IN, no piracy incidents have been reported in the East Arabian Sea since March 2012.

4.16 Consequent to the absence of piracy in the East Arabian Sea, India took up the case for revision of the piracy High Risk Area (HRA) at various international forums. Sustained efforts by the IN along with other stakeholders led to the shipping industry round-table, pushing back the eastern limits of the HRA from the West Coast of India to 65° E longitude in October 2015. The revision of the piracy HRA is likely to result in significant financial savings to the shipping industry.

4.17 IN ships and aircraft are also being regularly deployed for surveillance of the EEZ of Maldives, Mauritius and Seychelles at the request of the host governments.

Overseas Operations

4.18 INS Tabar participated in the National

Day celebrations of Mauritius on March 12, 2016 and INS Trikand participated in the National Day celebrations of Seychelles on June 29, 2016.

4.19 INS Beas participated in the Doha International Maritime Defence Exhibition (DIMDEX 2016) at Qatar from March 29-30, 2016.

4.20 INS Sumedha was deployed at Padang, Indonesia in April 2016 to participate in the International Fleet Review.

4.21 INS Airavat participated in the ADMM Plus Exercise on Maritime Security and Counter Terrorism held at Brunei and Singapore from May 2-10, 2016. In pursuance of India's 'Act East Policy', IN has been a regular participant in the ADMM Plus exercise for the last two years.

4.22 Maiden Table Top Exercise (TTX) was conducted with the Royal Malaysian Navy (RMN) at Lumut, Malaysia, during the visit of IN ships to Port Kelang in July 2016.

4.23 **Eastern Fleet Overseas Deployment (OSD):** IN ships Satpura, Shakti, Sahyadri and Kirch were deployed for an OSD from May to July 2016. The deployment was titled 'Rajdoot-16' and is part of the ongoing process of engaging with maritime neighbours in the South East Asia. The IN ships made port calls at Cam Ranh Bay (Vietnam), Subic Bay (Philippines), Sasebo (Japan), Busan (South Korea), Vladivostok (Russia), and Port Kelang (Malaysia).

4.24 **Western Fleet Overseas Deployment (OSD):** IN ships Vikramaditya and Mysore were deployed to Sri Lanka and Maldives in end January to February 2016. IN ships Deepak, Tarkash and Delhi were deployed to Dubai, Kuwait, Manama and Muscat in May 2016. IN Ships Ganga and Trikand were deployed to Iran from May 20 to 30, 2016.

IN ships Aditya, Trikand and Kolkata visited ports in IOR and East Africa from August to October 2016, wherein, technical assistance to Mauritian Coast Guard Ship Barracuda and humanitarian support to victims of fire tragedy at Ambilobe, Madagascar were rendered. In addition, PASSEX was carried out with Navies/ Coast Guard of Seychelles, Mauritius and Kenya.

4.25 In August 2016, INS Satpura made the first ever port call by an IN ship at Port Majuro in Marshall Islands, and Pohnpei in Micronesia. The deployment was aimed to have greater interaction with the Pacific Island countries and build bridges of friendship.

4.26 INS Sumitra was deployed at Auckland, New Zealand from November 18-22, 2016 to participate in the International Fleet Review (IFR). The ship also took part in the Golden Jubilee celebrations of India-Australia bilateral relationship at Sydney, Australia in November 2016. The ship visited Suva in Fiji and Surabaya in Indonesia during the deployment.

4.27 IN ships of 1st Training Squadron (1 TS) visited Thailand and Sri Lanka in March-April 2016 and, Thailand, Myanmar and Bangladesh in October-November 2016 as part of sea training of cadets.

International Fleet Review 2016

4.28 **International Fleet Review 2016:** The International Fleet Review 2016 (IFR-16) was conducted off Rama Krishna (RK) Beach, Visakhapatnam. A total of 97 ships including 70 ships anchored in six columns, seven ships in Mobile column, three submarines, six ships in President column and 11 ships in logistics/security groups participated in the event. IFR-16 saw participation of 24 ships from 21 foreign Navies, 22 Chiefs of Navies (CNOs) and 26 delegations from about 50 countries. Besides

review by the President, there were interactions and exchanges on the sidelines among Chiefs of the Navies as well as officers and men. A Passage Exercise (PASSEX) was conducted on February 9, 2016, with a number of foreign warships before their departure to respective countries.



Unveiling of IFR-16 Chart

4.29 As part of IFR-16, a Maritime Exhibition (MAREX) was conducted at the International Fleet Review village at Andhra University grounds, to showcase innovation and indigenisation/ self-reliance efforts of the nation. Indian industry - both private and public, shipyards and academic institutions, in addition to the Indian Navy participated in the exhibition.



Presidential Review Column

4.30 An International Maritime Conference was inaugurated by the Raksha Mantri on February 7, 2016 at Visakhapatnam. The event saw the participation of visiting dignitaries from countries participating in IFR 16 and other senior MoD and Services officials.

Major Exercises

4.31 An Amphibious Exercise, Jal Prahar was conducted in the Andaman and Nicobar Islands in April 2016. IN amphibious ships/ aircraft/ helicopters, Indian Army troops/ assets and IAF aircraft/ helicopters participated in the exercise.



Amphibious Assault during Exercise Jal Prahar

4.32 Exercise Paschim Lehar was conducted off the Western Seaboard in November 2016. 30 ships, 3 submarines, 5 Immediate Support Vessels, and 37 aircraft from Navy, Air Force and Coast Guard participated in the Exercise.

4.33 The 7th Search and Rescue Workshop and Exercise 2016 (SAREX-16) was conducted in May 2016 to check the preparedness and response measures for Search and Rescue (SAR) at Sea. The exercise was steered by the Coast Guard and saw coordinated operations by Indian Navy and Coast Guard. 25 international observers from nine maritime nations witnessed the exercise at sea.

4.34 A joint IN-IAF exercise, Exercise Khoj, aimed at sea survival and locating survivors at sea was conducted in April 2016. The exercise saw the participation of IN helicopters and aircrew from Indian Coast Guard and Indian Air Force.



Search and Rescue - Exercise Khoj

Coordinated Patrol (Corpat) with Indian Ocean Region Littoral Navies

4.35 IN and Myanmar Navy have been conducting Coordinated Patrols (CORPAT) annually since 2013. The 4th CORPAT was conducted from February 12-18, 2016, with the opening ceremony being held at Port Blair on February 12, 2016.

4.36 Indo-Thai Coordinated Patrols are being conducted regularly since 2005. Two CORPATs are held each year and a total of 23 CORPATs have been conducted till date. In 2016, the 22nd CORPAT was conducted in April 2016 and the 23rd CORPAT in November 2016.

4.37 The signing of a defence agreement between India and Indonesia in January 2001 has resulted in considerable enhancement of interaction between the navies of the two countries in the form of a periodic coordinated patrol. This coordinated patrol called 'IND-

INDO CORPAT' is conducted every year in March/ April and September/ October, along the IMBL. 28 CORPATs have been undertaken till date, with 27th and 28th edition held in end April-May 2016 and October 2016, respectively. Further, the second edition of the IND-INDO Bilateral exercise was conducted along with the 28th cycle of CORPAT in October 2016.



Joint Coordinated Patrolling during 28th IND-INDO CORPAT

Foreign Cooperation

4.38 INS Sutlej was deployed for surveys of approaches to Mkoani Harbour, Tanzania in January 2016, based on a request received from the host government. In addition, to facilitate greater cooperation in the field of hydrography, the maiden Indo-Tanzania Joint Hydrography Meet was held at Dar-es-Salaam, Tanzania, in March 2016.



Maiden Indo-Tanzania Joint Hydrography Meeting

4.39 An IN Hydrographic survey team participated in the 35th Indian Scientific Expedition to Antarctica from December 2015 to April 2016 for surveying India Bay area.

4.40 The first of two Water Jet Fast Patrol Vessels built at Goa Shipyard Limited for Mauritius Coast Guard, was delivered in September 2016. Construction of the ship, named 'Victory', was overseen by the Indian Navy.



Delivery of Mauritius CG Ship 'Victory'

4.41 The Indian Navy held Staff Talks on maritime cooperation and bilateral issues with Australia, Israel, Japan, Maldives (inaugural), Malaysia, Myanmar, Sri Lanka, Singapore, Thailand, United Kingdom, United States and Vietnam (inaugural). Cooperation in hydrography, training and exchange of White Shipping Information and conduct of Bilateral Exercises has been some of the common issues discussed during the Staff Talks.

4.42 Vietnam People's Navy had deputed a team of 49 personnel, including seven Officers and 42 NCOs to INS Eksila for a 15 month training programme on repair and maintenance of M-15 Gas Turbines. IN has successfully completed the training programme for VPN, as requested by the host Government.

Commissioning

4.43 INS Kadmatt, the second ship of the Kamorta class Anti Submarine Warfare

Corvette, was commissioned by the Chief of the Naval Staff on January 7, 2016 at Visakhapatnam. These ships are amongst the most technologically advanced ASW platforms with state-of-the art indigenous weapon/ sensor package, advanced stealth features and a high degree of automation, showcasing the country's capability in developing and deploying sophisticated weapon systems and equipment.

4.44 INS Chennai, the third ship of Kolkata class destroyers, was commissioned by the Raksha Mantri on November 21, 2016 at Mumbai. Designed by the Indian Navy's in-house organisation, Directorate of Naval Design, and constructed by Mazagon Dock Shipbuilders Ltd., Mumbai, the ship has advanced weapons and sensors. In consonance with the national vision of achieving maritime security through self-reliance, the Kolkata class ships have significantly higher level of indigenisation as compared to the Delhi class.

4.45 Two Water Jet Fast Attack Craft, INS Tarmugli and INS Tihayu were commissioned at Visakhapatnam on October 6 and 21, 2016 respectively. Designed and constructed by M/s. GRSE Kolkata, the ships will augment the local naval defence and coastal security efforts of the Indian Navy.

4.46 An Indian Naval base, INS Karna was commissioned by the Chief of the Naval Staff at Visakhapatnam on July 12, 2016. INS Karna will serve as the operational base for the Marine Commandos on the East Coast.

Naval Aviation

4.47 Naval Aviation is poised at a crucial juncture on its path towards modernisation. Numerous initiatives have been undertaken in the quest towards ensuring a potent, professionally competent and operationally ready Air Arm of the future. Towards this,

modern, state-of-the-art aircraft such as P8I, Hawk AJTs and MiG-29K fighters have been inducted.

4.48 MiG 29K is a multirole ship-based fighter aircraft and presently IN is operating two squadrons of MiG 29K/ KUB aircraft. INAS 303 is a frontline operational fighter squadron which has been undertaking embarked operations from INS Vikramaditya since January 2014. INAS 300, the training squadron was commissioned in May 2016 at Goa and undertakes training of fighter pilots on MiG 29 K/ KUB. The delivery of all 45 MiG 29K aircraft has been completed.



MiG 29K Fighters

4.49 The induction of the P-8I Long Range Maritime Reconnaissance and Anti Submarine Warfare (LRMRASW) aircraft into the Indian Navy has enhanced India's maritime surveillance capability. All eight aircraft have been inducted in the IN and are being optimally exploited.

4.50 The Hawk Advanced Jet Trainers (AJT) squadron, based at Visakhapatnam, conducts training of fighter pilots and also undertakes other tasking for fleet units. All 17 Hawk Mk 132 AJTs contracted from HAL have been delivered to the Indian Navy and are being optimally exploited.

Important Events of Interest

4.51 A bridge on Savitri river had collapsed on August 3, 2016 at Mahad, Raigarh District in Maharashtra during heavy rains and a few vehicles fell off, leading to loss of lives. IN deputed a specialist diving team of 22 personnel with 3 Gemini craft and two Sea King helicopters for the search operations from August 3-14, 2016. IN diving team assisted in recovery of two State Government buses, an SUV, and 14 bodies drowned in the river.

4.52 On June 24, 2016, one each Dornier and ALH were deployed to Lakshadweep Islands for Medical Evacuation (Medevac) of critical patients from Kiltan and Agatti islands to Kochi.



MEDEVAC from L&M Islands

4.53 Yard 12705 (Mormugoa), the second ship of Project-15B was launched on September 11, 2016. The Ship has been designed by the Indian Navy's in-house organisation, Directorate of Naval Design and is the follow on of Kolkata class guided missile destroyers. The ships are being built by MDL, Mumbai. In order to accrue benefits of series production, while the design of P-15B ship is similar to P-15A ships, however the weapon systems and sensor suite of the ships are superior and are state-of-the-art,

making them one of most potent platforms in the world.

4.54 In order to absorb the increasing training load and to reduce the work load of scheduling examination, invigilation and evaluation, it is

planned to conduct online examinations for all the Qualifying courses in the IN. In line with this plan, "Pariksha" an Online Examination centre with 50 thin clients has been commissioned on January 7, 2016 at INS Shivaji.



INDIAN AIR FORCE



Indian Air Force

5.1 IAF is on a trajectory of modernisation and is transforming itself into a strategic aerospace power with full-spectrum capability. Capability enhancement through new acquisitions, replacement of obsolete equipment with state-of-the-art inductions and upgrade of legacy weapon platforms has been taken up to bolster operational potential and effectiveness. Forthcoming inductions of the Rafale aircraft, attack helicopters, heavy lift helicopters, force enhancers, Surface to Air Guided Weapon (SAGW) and Air Defence Radars, hold great promise for the future. Also, it has been a matter of great national pride, to usher in the first Tejas squadron of the IAF. Simultaneously, airfield infrastructure modernisation programme and up-gradations in communications network have strengthened the support structure for effective operations. While undertaking its modernisation, the IAF has taken an active and sustained role in the “Make in India” plan, to take forward indigenous production of combat aircraft, helicopters, weapon sensors and systems, besides other aviation equipment. A vibrant and flourishing domestic aviation capability would provide strategic military independence and boost economic growth.

5.2 Self-reliance in aerospace sector is a major key result area for the IAF. Efforts in field of research and development as well as manufacturing sectors have been stepped up,

in order to reduce reliance on foreign sources. To give a boost to ‘Make in India’ initiative and achieve self-reliance in defence manufacturing sector, highest priority has been given to equipment manufactured in India.

Acquisitions and Upgrades

5.3 **Su-30 MKI:** Induction of Su-30 MKI aircraft in the IAF is under progress and many squadrons are already operational in the IAF. Current lot of Su-30 MKI aircraft are being manufactured in HAL through transfer of technology. Advance indigenous weapons like Brahmos supersonic cruise missile and ‘Astra’ Beyond Visual Range (BVR) missile are being integrated and test fired from the aircraft.



SU 30 MKI

5.4 **Tejas Light Combat Aircraft:** The first fightersquadron of the IAF with LCATejas aircraft, has been formed on July 1, 2016. Light Combat



Tejas



Rafale

Aircraft (LCA) 'Tejas' is the first advanced, Fly-By-Wire fighter aircraft designed, developed and manufactured in India. Tejas is a 4th Plus generation aircraft with a glass cockpit and is equipped with state-of-the-art Satellite aided Inertial Navigation System. Tejas successfully participated in Bahrain International Air Show, from January 21-23, 2016 and also participated in 'Exercise Iron Fist 2016' in March 2016, displaying its maneuverability and operational capability to the national leadership and the world.

5.5 **Rafale:** An Inter-Governmental Agreement for procurement of 36 Rafale aircraft, in fly away condition, has been signed between the Government of India and Government of French Republic on September 23, 2016. Globally, Rafale is one of the most modern aircraft which would boost the offensive capability of IAF and give enormous edge over adversary.

5.6 **C-130J:** IAF has already inducted C-130J aircraft and the delivery of balance aircraft is likely to be completed by July 2017. Night Vision Goggles are being procured for the fleet, which will enhance aircraft's night operations capability. C-130J has rendered exceptional service, in Humanitarian Assistance and



C-130J

Disaster Relief (HADR) operations in Nepal, Chennai, Male etc.

5.7 **Apache Attack Helicopters:** Letter of Agreement (LOA) was signed on September 28, 2015 between Government of India and United States Government (USG) and the contract was



AH 64E Apache

also signed with the Boeing Company of USA for the procurement of AH 64E Apache Attack Helicopters. The deliveries of Helicopters would commence in July 2019 and are expected to be completed by March 2020. Apache helicopter with its advance fire control radar and lethal weapons would enhance strike capability against ground targets, radars and enemy armour in battlefield.

5.8 Chinook Heavy Lift Helicopters: IAF is procuring CH-47F(I) Chinook Heavy Lift Helicopters. Deliveries of these helicopters are expected to be completed by March 2020. These helicopters would provide IAF, unique capabilities to ship heavy load to inaccessible areas. It would also be a great asset for Humanitarian Assistance and Disaster Relief (HADR) operations.



Chinook

5.9 Aircraft Upgrade: Comprehensive upgrade programmes have been marked out for various fleets to boost their capabilities and ensure operational relevance. Mirage 2000 and MiG-29 aircraft upgrade is under progress and few upgraded aircraft have already been operationalised in the IAF. IOC D&D for DARIN III upgrade of Jaguar aircraft has been completed and series upgrade is under progress. Re-equipping of An-32 is also under progress. IAF will also be upgrading its IL-76/78 fleet and

Mi-17 helicopters and will be enhancing the capabilities of Su-30 MKI aircraft.



Mirage 2000

Weapons & Missiles

5.10 Weapons: In order to complement state-of-the-art platforms being inducted into the IAF, advance weapons with high precision and lethality are being inducted. Beyond Visual Range missiles, precision weapons, smart bombs, Anti-Ship missiles etc. are being procured. Emphasis is being laid on Design and Development (D&D) and production of modern weapons indigenously.



BVR missile

5.11 Brahmos Surface to Surface Missile firing: IAF successfully fired the first Brahmos Surface to Surface Missile on May 27, 2016 at Pokhran Field Firing Range.

5.12 **MICA Air-To-Air Missile:** Indian Air Force successfully fired long range 'Beyond Visual Range' Air-to-Air MICA missile from Mirage-2000 upgrade aircraft on a manoeuvring target. In spite of the complexities associated with small target, the mission was executed with remarkable accuracy. The launch ranges offered by the onboard systems were validated and with the success of this mission, IAF has become one of the few Air Forces in the world with the capability of such long range Air-to-Air missiles.



Mirage 2000 Upgrade aircraft with MICA Missiles

5.13 **Medium Range Surface to Air Missile (MRSAM):** MRSAM is a Joint D&D project of DRDO with Israel. MRSAM is capable of engaging targets from extreme low altitude to high altitude and very close range to medium ranges. This extremely capable Area Air Defence weapon networked in the modern Integrated



MRSAM

Air Command and Control System (IACCS) system of IAF would defeat all types of hostile targets within its engagement zone including those with extremely low Radar Cross Section (RCS) even in a dense jamming environment.

5.14 **Spyder LLQRM System:** IAF is in the process of inducting Spyder Low Level Quick Reaction Surface to Air Missile (LLQRM) system which is equipped with Python 5 and Derby missiles. It is an excellent system to counter-attack the enemy aircraft, helicopters, cruise missiles, Unmanned Aerial Vehicles (UAVs) and Precision Guided Munitions (PGMs). The system enables operational flexibility and multi-shot capability for short to medium range intercepts. The system provides a comprehensive response to the saturation attacks with multiple target engagement.



Spyder

5.15 **Akash Missile System:** IAF has already contracted for indigenous Akash short range



Akash Missile

surface-to-air missile system. Delivery of these systems is in progress. In future, IAF plans to induct more firing units of advance version of Akash missile system. These missile systems are important element for providing Air Defence cover to vital areas and vital points.

Air Defence Radars

5.16 In order to boost the surveillance and detection capabilities, a number of radars have been operationalised in the IAF. In last few years, Medium Power Radars, Low level Tracking Radars and Low Level Light Weight Radars have been inducted into the IAF.



Air Defence Radar

5.17 **Medium Power Radars (MPRs):** Medium Power Radars have been recently inducted into the IAF. MPRs are based on solid state TR modules with Phased Array Technology.



Medium Power Radar (MPR)

The digital output of these radars has been integrated with Integrated Air Command and Control System (IACCS) of the IAF.

5.18 **Low Level Transportable Radars:** To fill the low level radar gaps along the border, new Low Level Transportable Radars (LLTRs) are being inducted into the IAF. These radars are mobile and can be deployed anywhere as per operational requirements. LLTRs are equipped with mobile communication system which provides landline and SATCOM connectivity from remote location to the Command and Control (C2) Centres.



Low Level Transportable Radars (LLTR)

5.19 **Low Level Light Weight Radars (LLLWRs):** Low Level Light Weight Radars are being inducted to provide electronic eye to Mobile Observation Flights (MOF). These



Low Level Light Weight Radar (LLLWR)

Flights scan for low level aerial threats and provide extended early warning. Initially these radars were imported, but they are being manufactured indigenously by M/s. BEL.

Exercises

5.20 **Ex-Iron Fist 2016:** Indian Air Force conducted Fire Power Demonstration, 'Exercise Iron Fist – 2016' on March 18, 2016 at Pokhran Field Firing Range in Rajasthan. Fighter, transport, trainer aircraft and helicopters participated in the exercise. For the first time, the firing of indigenous Beyond Visual Range (BVR) Air to Air Missile (AAM) 'ASTRA', R-73 AAM by MiG-29 Upgrade aircraft and 70 mm rocket from Light Combat Helicopter was demonstrated. In addition, auto bombing by Mi-17 V5 helicopter by night, firing of 'AKASH' Surface to Air Missile (SAM) and para-drop from C-17 aircraft were also undertaken for the first time by the IAF. The event was graced by the presence of the President of India, the Prime Minister and various other dignitaries.

Aerospace Museum

5.21 **Aerospace Museum:** An Aerospace museum is planned to be constructed at Air Force Station Palam, on an area of 43 acres of Defence land. It would be a world class museum showcasing rich history of the IAF.



Aerial view of proposed Aerospace Museum

Indigenisation

5.22 One of the main focus areas of the IAF is to reduce dependency on import of defence equipment and support indigenisation and manufacturing of defence equipment. While Light Combat Aircraft, Akash Missile and Advance Light Helicopters have already been inducted, IAF is actively supporting design and development of Light Combat Helicopters, indigenous Remotely Piloted Aircraft, Medium Power Radars, Low Level Tracking Radars and a series of weapons and other systems.



Light Combat Helicopter

5.23 **Make in India:** Modernisation plan is being pursued with an aim to give impetus to indigenisation and to beef up the defence manufacturing base and the eco system. IAF has already identified series of defence equipment that can be manufactured under 'Make in India'. Ministry of Defence is also considering to include the private sector in production of defence equipment, manufacturing of Ka-226 T helicopters, suitable fighter aircraft etc. which will give impetus to 'Make in India' initiative and this has generated enormous interest amongst global defence entities to start manufacturing in India. This will not only generate employment and enhance skill level, but also assist in harnessing key technologies for growth of aerospace sector in the country.



INDIAN COAST GUARD



Indian Coast Guard

6.1 Indian Coast Guard (ICG) came into being on February 1, 1977 after approval of the Cabinet Committee on Political Affairs to set up an interim Coast Guard Organization. It was formally established as an independent organization on August 19, 1978 with the enactment of Coast Guard Act, 1978. The ICG began in 1978 with two frigates seconded from the Indian Navy and five patrol boats from the Department of Customs. Since inception, the Service has acquired a wide range of capabilities both surface and airborne to undertake the assigned tasks during peace time and to supplement the efforts of Indian Navy during war.

6.2 **Organization:** The Command and Control of the Coast Guard lies with the Director General of Indian Coast Guard (DGICG), New Delhi. The Organisation has five Regional Headquarters located at Gandhinagar, Mumbai, Chennai, Kolkata and Port Blair. These Regional Headquarters exercise Command and Control in the waters adjoining the entire coastline of India through fourteen Coast Guard District Headquarters located in the coastal States of India. A post of ADG (West) designated as Commander Coast Guard (Western Seaboard) has been established w.e.f. March 4, 2015 at Mumbai. In addition, there are 42 Stations, 2 Air Stations, 7 Air Enclaves and 1 independent Air Squadron at various strategic locations for undertaking effective deployment of ships

and aircraft for Search & Rescue and maritime surveillance.

6.3 **Duties and Functions:** The duties of Coast Guard are as follows:

- (a) Ensuring the safety and protection of artificial islands, offshore terminals, installations and other structures and devices in Maritime Zone.
- (b) Providing protection to fishermen including assistance to them at sea while in distress.
- (c) Taking such measures as are necessary to preserve and protect the maritime environment and to prevent and control marine pollution.
- (d) Assisting the customs and other authorities in anti-smuggling operations.
- (e) Enforcing the provisions of such enactments as are for the time being in force in the maritime zone.
- (f) Such other matters, including measures for the safety of life and property at sea and collection of scientific data, as may be prescribed.

6.4 During the course of time the following additional duties have been assigned to the Indian Coast Guard:

- (a) National Maritime Search and Rescue Coordination Authority;
- (b) Coordinating Authority for National Oil Spill Disasters;
- (c) Coordination for security in the offshore oil-fields;
- (d) Focal point in India for information sharing under the Regional Cooperation Agreement on Combating Piracy and Armed Robbery against Ships in Asia; and
- (e) Lead Intelligence Agency for maritime borders.

6.5 **Existing Force Level:** At present, the Indian Coast Guard has a force level of 62 Ships, 64 Boats/ Hovercraft and 62 Aircraft to carry out regular surveillance of the Maritime Zones of India. 2 Offshore Patrol Vessels (OPVs), 6 Fast Patrol Vessels (FPVs) and 2 Interceptor Boats (IBs) have joined the Coast Guard fleet in year 2016.

Coastal Security

6.6 Indian Coast Guard has been additionally designated as the authority responsible for Coastal Security in territorial waters including waters to be patrolled by Coastal Police. The Director General, Indian Coast Guard has also been designated as Commander, Coastal Command and is responsible for overall coordination between Central and State agencies in all matters relating to Coastal security.

6.7 **Coastal Security Exercises:** Indian Coast Guard, in coordination with Navy, has been undertaking patrolling and surveillance of the entire coastline. During 2016, a total of 18

Coastal Security exercises have been conducted for ensuring effectiveness of the coordinated patrolling and validation of Standard Operating Procedure.

6.8 **Coastal Security Operations:** The deployment of the Coast Guard Ships and Aircraft has been increased for Coastal Security in addition to patrolling in the Exclusive Economic Zone. During 2016, a total of 63 Coastal Security operations have been conducted in coordination with all stake holders.

6.9 **Community Interaction Programmes:** Indian Coast Guard conducts regular interaction with fisher folks through Community Interaction Programmes. During 2016, a total of 749 Community Interaction Programmes have been conducted to sanitize fishermen on safety and security issues and to create awareness about usage of lifesaving equipment like Distress Alert Transmitters, lifebuoys and life jackets etc.

Significant Milestones and Achievements

6.10 **6th National Level Pollution Response Exercise (NATPOLREX-VI) off Mundra:** The Indian Coast Guard conducted sixth National Level Pollution Response Exercise (NATPOLREX-VI) on December 20-21, 2016, off Mundra in Gulf of Kachchh. Representatives of various Ministries and Departments of Central and State Governments, Ports, Oil Handling Agencies and other stakeholders participated in the exercise. In addition, representatives of Oil Industry Safety Directorate and Observers from three foreign nations also witnessed the NATPOLREX-VI exercise. A total of 40 participants from 26 stakeholders and Resources Agencies participated in the table top exercise

and embarked Coast Guard Ships Sarathi, Samudra Prahari and Samudra Pavak for witnessing the demonstration of the Pollution Response capability at sea. Chief Minister of Gujarat alongwith DGICG witnessed the exercise while onboard Coast Guard Ship Sarathi. The Foreign Observers who witnessed the Pollution Response exercise were from Sri Lanka, Bangladesh and Australia.



6th National Level Pollution Response Exercise

6.11 Two Offshore Patrol Vessels (OPVs) have been commissioned namely Indian Coast Guard Ship (ICGS) Shoor on April 4, 2016 and ICGS Sarathi on September 9, 2016.

6.12 One Pollution Control Vessel (PCV) namely ICGS Samudra Pavak has been commissioned on January 14, 2016.

6.13 Six Fast Patrol Vessels (FPVs) namely ICGS Arnvesh, ICGS Arush, ICGS Aryaman, ICGS Atulya, ICGS Rani Gaidinliu and ICGS Ayush have been commissioned during the year 2016.

6.14 Two Interceptor Boats (IBs) namely, C-156 and C-158 have been commissioned during the year 2016.

6.15 Coast Guard Air Enclave at New Mangalore has been activated on September 10, 2016.

International Cooperation

6.16 DGICG visited Yangon, Myanmar to attend a High Level Meeting with Myanmar Navy from January 6-9, 2016.

6.17 On January 13, 2016, a delegation led by Vice Admiral Hideyo Hanamizu, Vice Commandant, Japan Coast Guard visited Coast Guard Headquarters, New Delhi for a High Level Meeting.

6.18 A delegation led by Commissioner General, Korean Coast Guard (KCG) attended a High Level Meeting with DGICG at Coast Guard Headquarters, New Delhi on June 8, 2016.

6.19 A delegation led by DGICG visited Pakistan from July 13-14, 2016 and a High Level Meeting between ICG and Pakistan Maritime Security Agency (PMSA) was held at Islamabad on July 13, 2016.

6.20 A delegation led by DGICG visited Sri Lanka to attend the High Level Meeting between ICG and Sri Lanka Coast Guard (SLCG) from August 16-20, 2016.

6.21 The 12th Heads of Asian Coast Guard Agencies Meeting (HACGAM) was held from October 11-14, 2016 at Jakarta, Indonesia. A delegation led by DGICG participated in the 12th HACGAM Meeting.

6.22 A delegation led by Director General, Bangladesh Coast Guard (DG BCG) attended a High Level Meeting with DGICG at Coast Guard Headquarters, New Delhi on December 8, 2016.

6.23 Indian Coast Guard Interceptor Boat C-405 was gifted to Government of Seychelles on January 22, 2016.

6.24 An important milestone has been achieved in International Cooperative engagements by signing of a Memorandum of Understanding (MoU) with the Royal Oman Police (Coast Guard) on May 22, 2016.

6.25 **Overseas Deployment of Indian Coast Guard Ships:** The details of overseas visits undertaken by Indian Coast Guard ships are as follows:

Sl. No.	Ship Name	Duration	Country
(a)	ICGS Varad	January 5-13, 2016	Myanmar
(b)	ICGS Samarth	January 13-21, 2016 January 26-29, 2016 February 1-4, 2016 February 9-12, 2016	Seychelles Mauritius Madagascar Kenya
(c)	ICGS Sankalp	January 24-28, 2016 January 30 to February 2, 2016 February 4-7, 2016 February 9-13, 2016	Qatar South Africa UAE Oman
(d)	ICGS Samarth	August 18-20, 2016	Sri Lanka
(e)	ICGS Vishwast ICGS Anmol	August 24 to September 2, 2016 September 5-9, 2016 September 14-17, 2016 (OTR) September 19-23, 2016	Bangladesh Myanmar Port Blair, India Thailand
(f)	ICGS Samar	September 25 to October 5, 2016	Maldives
(g)	ICGS Samrat	October 12-16, 2016 October 23-27, 2016 October 29 to November 2, 2016 November 8-11, 2016	Indonesia Vietnam China Cambodia
(h)	ICGS Samudra Pavak	October 25-29, 2016	Maldives
(j)	ICGS Samar	December 19-29, 2016	Maldives
(k)	ICGS Samarth	December 29-31, 2016	Malaysia

Other Achievements of ICG

6.26 Some of the other achievements of the Coast Guard which clearly demonstrate the role played by ICG in service of the nation are given below:

Sl. No.	Achievements during the period January 1, 2016 to December 31, 2016	
(a)	Search and Rescue (SAR) Missions	223
(b)	Search and Rescue (SAR) Sorties	444
(c)	Lives Saved at Sea	610
(d)	Medical Evacuation at Sea	18
(e)	Poaching Trawler Apprehension	11 Boats & 69 Crew
(f)	Apprehension on Marine Wild Life Violation	11 Boats & 104 Crew
(g)	Repatriation of fishermen	333 Indian Fishermen from Sri Lanka 9 Sri Lankan fishermen from India

6.27 Search & Rescue

(a) **Operation "Talash 01/16"** was executed for search of missing IAF Aircraft AN-32 (AF 330) from July 22 to September 29, 2016. The aircraft was on passage from Chennai to Port Blair with 29 passengers onboard. During the search operation, a total of 29 (11 ICG + 18 IN) Indian Coast Guard and IN ships were deployed from July 22, 2016 to September 29, 2016. In addition, ICG/ IN/ IAF aircraft were also deployed to undertake Sea Air Coordinated search from July 22 to September 18, 2016. A total of 301 ship days and 1222 hours of flying was undertaken in 280 sorties. A total of 61 days of sub-surface search was also undertaken since August 1, 2016. Operation 'Talash' for missing IAF aircraft AN 32 (AF 330) was terminated on September 29, 2016. However, the ships and aircraft transiting through the area continue to

monitor the area during routine surveillance sorties/ deployment.

(b) **Search and Rescue Coordination between Indian Coast Guard and Bangladesh Coast Guard:** The North Bay of Bengal witnessed 2 depressions during August 9-20, 2016 resulting in missing of 22 fishing boats alongwith 285 crew at sea due to inclement weather. 257 Indian fishermen and 66 Bangladeshi fishermen were rescued and expeditiously repatriated at sea.

(c) **SAREX-16:** The National Maritime Search and Rescue Exercise (SAREX-16) was conducted at Mumbai on May 2-3, 2016. A total of 13 ships, 1 Hovercraft and 6 aircraft participated as Search and Rescue Units (SRU). All the resource agencies actively participated in the exercise. The conduct of SAREX-16, not

only displayed our capabilities to harmonise maritime & aeronautical SAR but also reinforced our stature as the lead Maritime SAR provider in the IOR.

(d) **XV National Maritime SAR Board Meeting:** The XV National Maritime Search and Rescue Board (NMSARB) Meeting was held at Vigyan Bhavan, New Delhi on July 27, 2016. Union Minister of Earth Sciences was the chief guest for the inauguration and launch of the Search and Rescue Aid Tool ('SARAT') designed and developed by Indian National Centre of Ocean Information Services (INCOIS).

6.28 **Medical Evacuation**

(a) **Medical Evacuation from MV 'MP Panamax-5':** On August 8, 2016, Indian Coast Guard Interceptor Boat (C-418) evacuated injured crew (Cadet Dilawar Ahlawat) from 'MP Panamax-5' (Flag-India) in position 30 nautical miles South West of Sagar Island.

(b) **Medical Evacuation from MV Fleet Phoenix-off Okha:** On September 9, 2016, Indian Coast Guard Interceptor Boat (C-411) ex-Okha evacuated a crew from MV Fleet Phoenix (Flag-Panama) in position 20 nautical miles Northwest of Okha and handed over to local agent at Okha for further medical management.



Medical Evacuation from MV MP Panamax 5



Medical Evacuation from MV Fleet Phoenix- off Okha





DEFENCE PRODUCTION



Defence Production

7.1 The Department of Defence Production (DDP) was set up in November 1962 with the objective of developing a comprehensive production infrastructure to produce the weapons/systems/platforms/equipments required for defence. Over the years, the Department has established wide ranging production facilities for various defence equipments through the Ordnance Factories and Defence Public Sector Undertakings (DPSUs). The products manufactured include arms and ammunition, tanks, armoured vehicles, heavy vehicles, fighter aircraft and helicopters, warships, submarines, missiles, ammunition, electronic equipment, earth moving equipment, special alloys and special purpose steels.

7.2 The organizations under the Department of Defence Production are as follows:

- Ordnance Factory Board (OFB)
- Hindustan Aeronautics Limited (HAL)
- Bharat Electronics Limited (BEL)
- Bharat Dynamics Limited (BDL)
- BEML Limited (BEML)
- Mishra Dhatu Nigam Limited (MIDHANI)
- Mazagon Dock Shipbuilders Limited (MDL)
- Garden Reach Shipbuilders & Engineers Limited (GRSE)
- Goa Shipyard Limited (GSL)
- Hindustan Shipyard Limited (HSL)
- Directorate General of Quality Assurance (DGQA)
- Directorate General of Aeronautical Quality Assurance (DGAQA)
- Directorate of Standardisation (DOS)
- Directorate of Planning & Coordination (Dte. of P&C)
- Defence Exhibition Organisation (DEO)
- National Institute for Research & Development in Defence Shipbuilding (NIRDESH).

7.3 With the objective of achieving self-reliance in defence production, the Ordnance Factories and DPSUs have been continuously modernizing and upgrading their capabilities and widening their product range. A large number of major products have been developed through in-house research and development initiatives in addition to a number of products and equipment being produced through transfer of technology.

7.4 The value of production of Defence

PSUs/ Ordnance Factories and Profit after Tax are indicated in Table 7.1 and Table 7.2, respectively.

Table No. 7.1
WORKING RESULTS
Value of Production of Defence PSUs and OFB

(₹ in crore)

Name of DPSU	2013-14	2014-15	2015-16	2016-17 (Up to Dec, 2016) (Provisional)
HAL	15867	16289	17273	9980
BEL	6127	6659	7782	5211
BEML	2814	2599	2740.01	1515.15
BDL	1804	2770	4299.84	2978.68
GRSE	1611.67	1612.66	1706.60	701.18
GSL	508.90	569.55	725.96	739.17
HSL	453.40	294.16	593.29	404.32
MDL	2865.51	3592.60	4121.65	1932.80
MIDHANI	572	640.04	678.78	518.84
OFB	11123	11364	13047	8398
Total	43746.48	46390.01	52968.13	32379.14

Table No. 7.2
Profit after Tax of DPSUs

(₹ in crore)

Name of DPSU	2013-14	2014-15	2015-16	2016-17 (Up to Dec, 2016) (Provisional)
HAL	2693	2388	1654	1090
BEL	932	1167	1358	755.88
BEML	5	6.76	52.65	-140.93
BDL	346	419	563.24	351.88
GRSE	121.46	43.45	160.71	52.87
GSL	-61.09	78.24	61.89	70.25
HSL	-46.21	-202.84	19.00	6.15
MDL	397.61	491.59	637.82	353.73
MIDHANI	83	102.13	118.03	68.53
Total	4470.77	4493.33	4625.34	2608.36

7.5 DPSUs and Ordnance Factories have, as a policy, been outsourcing many of their requirements and have over the years developed a wide vendor base which includes a large number of medium and small scale enterprises apart from large scale industries. In addition, the DPSUs and OFB are also striving to increase the indigenous content in equipment and products, manufactured by them.

Private Sector Participation

7.6 To achieve the goal of self-reliance in the Defence sector, continuous efforts are being made to increase indigenization, wherever technologically feasible and economically viable.

7.7 In May, 2001, the Defence Industry sector, which was hitherto reserved for the public sector, was opened up to 100% for Indian private sector participation, with Foreign Direct Investment (FDI) up to 26%, both subject to licensing. However, recently Department of Industrial Policy & Promotion, Ministry of Commerce & Industry vide Press Note No. 5 (2016 Series) (Available at www.dipp.nic.in under Acts and Rules followed by Press Notes), has allowed FDI under automatic route upto 49% and above 49% wherever it is likely to result in access to modern technology or for other reasons to be recorded. Other conditions as per the said press note are as follows:

- (a) Infusion of fresh foreign investment within the permitted automatic route level, in a company not seeking industrial license, resulting in change in the ownership pattern or transfer of stake by existing investor to new foreign investor, will require Government approval.
- (b) License applications will be considered and licences given by the Department

of Industrial Policy and Promotion, Ministry of Commerce & Industry, in consultation with Ministry of Defence and Ministry of External Affairs.

- (c) Foreign investment in the sector is subject to security clearance and guidelines of Ministry of Defence.
- (d) Investee Company should be structured to be self-sufficient in areas of product design and development. The investee/ joint venture company along with manufacture facility should have maintenance and life cycle support facility of the product being manufactured in India.

7.8 The Department of Industrial Policy & Promotion (DIPP), in consultation with Ministry of Defence, has issued detailed guidelines vide Press Note No. 2 (2002 Series) dated January 4, 2002 for licensing production of Arms and Ammunition in January 2002. Consequently, the role of Private Sector has shifted from that of supplier of raw material, components, sub systems to one of becoming partners in the manufacture of complete advanced equipments/ systems. The basic objective of allowing private sector participation is to harness available expertise in the private sector and work towards attaining total self-reliance in defence manufacturing sector. In-built advantages of the private sector are its reservoir of management, scientific and technological skills coupled with its ability to raise resources.

7.9 A Standing Committee on private sector participation in defence production in the Department of Defence Production considers applications received from Department of Industrial Policy & Promotion (DIPP) for grant of Industrial Licences and FDI Proposals from FIPB Unit, Department of Economic Affairs

(DEA) respectively for the manufacture of licensable defence items and to communicate the recommendation of the Ministry of Defence to the respective Departments. The Joint Secretary (DIP) is presently Chairman of Standing Committee with members from diverse fields viz. Naval HQrs, Air HQrs, Army HQrs, DGQA, DGAQA, DoD, DG(Acq), OFB, DRDO and BEL.

7.10 Department of Industrial Policy and Promotion (DIPP) has so far issued 342 Industrial Licences (ILs) covering 205 companies till June 2016 for manufacture of a wide range of defence items to private companies. 52 licensed companies covering 83 industrial licenses have so far reported commencement of production.

7.11 After opening up of the Defence Industry sector for Indian Private Sector Participation, so far 36 FDI proposals/ Joint Ventures have been approved in defence sector for manufacture of various defence equipments, both in public and private sector. FDI amounting to ₹ 25.84 crore (US\$ 5.12 Million) has been received in the Defence Industry Sector from April 2000 to September 2016 (Source: FDI Statistics on <http://www.dipp.nic.in>).

7.12 The Department of Defence Production has finalized the Defence Products List for licensing purpose under Industries (Development & Regulation) Act, 1951. DIPP, vide Press Note No. 3 (2014 Series), has uploaded the Defence Products List on their website. DIPP vide Press Note 10 of 2015 series has increased the initial validity of industrial licenses for a period of 15 years, further extendable upto 18 years to be granted by administrative ministry. Both Press Notes are available on DIPP website (www.dipp.nic.in) under Acts and Rules followed by Press Notes.

7.13 The Department has also launched a 'Make in India' portal, wherein all policies, procedures and promotional measures related to Defence Production are available at a single platform. The portal is also interactive, where investors can raise any question or clarification and same is replied back within 3 working days. The portal has received a very encouraging response from the industry.

7.14 The Department has finalized a Security Manual for private sector defence industries. The security manual provides for physical, documentation and IT security for the companies. The Security Manual is available on DDP's website (www.ddpmod.gov.in) under Publication/Reports. For the purpose of compliance, the security manual has been divided into three parts; Category A, B & C. Depending on the products/ weapons/ equipments, the companies will be required to comply with the security protocol. This is also available on DDP's website. Brief descriptions of Categories are as follows:

Category-A: The products under this category would be highly classified and sensitive from the security angle and the manufacturing of these items would require the highest level of security.

Category-B: The products under this category would include semi-finished products, sub-assemblies, sub-systems of main weapons/ equipments/ platforms and some finished products of lesser degree of sensitivity.

Category-C: The products under this category would include products which do not involve use of any classified/ secret information and are very generic in nature. The products in this category would normally be not specifically designed or modified for military use and therefore would require only a very minimal level of security.

Export Profile of Indian Defence Industry

7.15 After the introduction of on-line system for accepting applications for issue of no objection certificates (NOCs) in November, 2014, the system has been further streamlined to make it industry friendly. NOCs are also now being issued on-line to save the time and make the system more transparent. System is being improved regularly based on the feedback of the industry associations/ private exporters, received from time to time.

7.16 With a view to facilitate DPSUs and private defence industry in exploring business opportunities abroad, 'In-principle' approval is being given for the purpose. A number of countries have shown interest in indigenously developed products such as Multi-function Hand Held Thermal Imager, Light Weight Torpedoes, Anti-submarine warfare upgrade suit, Akash Air Defence System, etc.

7.17 The value of defence exports by DPSUs, OFB and the Private Sector Companies (based on the NOCs issued), for the financial year

2016-17 (upto December, 2016) is ₹1105.20 crore (provisional) as compared to ₹ 2059.18 crore during the financial year 2015-16. A total number of 193 NOCs have been issued till December, 2016, out of which 166 have been issued to private defence industry. About 12-14 companies in the private sector have contributed to defence exports.

7.18 Some of the major export destinations for defence products have been Kenya, Bhutan, Ethiopia, Israel, Taiwan, UK, Nepal, Belgium, Vietnam, and Philippines. The major defence items being exported are Personal Protective Items, Turbo Chargers and Batteries, Electronic Systems (EOPOD ALH System), Light Engineering Mechanical Parts etc.

Ordnance Factories Organisation

7.19 Indian Ordnance Factories are the oldest and largest industrial setup which functions under Ordnance Factory Board (OFB) with the primary objective of achieving self-reliance in equipping the armed forces with state-of-the-art battlefield equipment.

7.20 Core competence of Ordnance Factories:

Weapons	Small, Medium and Large Calibre Weapons & Mortar Equipment
Ammunition, Explosives & Propellants	Small, Medium and Large Calibre Ammunition, Mortar Bombs, Signaling and related stores, Rockets & Aerial Bombs, Fuzes, Explosives, Chemicals & Propellants
Military Vehicles	Trucks, Mine protected and Special Security Vehicles
Armoured Vehicles	Tanks & its variants, Armoured Personnel Carrier (APCs) & Engines
Instruments & Optical devices	Night & Day Vision Sights & Instruments
Parachutes	Brake Parachutes, Man dropping & Supply dropping Parachutes
Troop comfort & General Stores	Tentage, Clothings, Personal equipment, Bridges, Boats, Cables etc.

7.21 **Production achievement:** The turnover during the financial year 2015-16 was ₹ 14158 crore. The turnover for 2016-17 up to December 2016 is ₹ 9154 crore including taxes and duties.

7.22 **Modernisation:** OFB is continuously modernizing its existing facilities by replacing age old machines with the state-of-the-art machines to manufacture quality products, taking into account the current and long term future requirements of the customers. To achieve this, a Comprehensive Modernisation Plan has been prepared and a total expenditure of ₹ 5663 crore is planned to be made during 12th Plan for modernisation of OFB.

7.23 **Quality Management:** The process has been strengthened by taking following initiatives: Test facilities at ordnance factories have been made available to the private entities, Establishment of Ten Quality Audit Groups (QAG) for audit of manufacturing processes, Deputation of teams for direct interaction with central and forward Depots to address the complaints, Formation of Failure Review Board in each Factory with DGQA representative as a Member and enhancing the in-house test facility capability of input material inspection.

7.24 **Achievements and Awards:**

- Ordnance Factory Medak in association with DRDO has indigenously developed and supplied the first NBC vehicle to Indian Army.
- OFB has participated in RFP of upgunning of 130 mm Gun to 155 mm x 45 calibre Gun and the OFB Gun has undergone successful field trial at PFFR Pokharan against RFP issued by the user.
- Kavach MOD-II Chaff launcher system has been developed, manufactured and installed onboard INS Chennai.

The Installation Test Firing of Long & Medium Range Launchers of Kavach MOD-II was successfully carried out for the first time onboard a Naval ship.

- OFB has developed 7.62 x 39 mm Assault rifle "GHAATAK" as an alternative to AK-47.
- OFB has successfully developed Bi-Modular Charge System (BMCS) and issued to Indian Army.
- OFB's newly developed 155 mm x 45 Calibre Gun "Dhanush", which is one of the Major Products under "Make in India" theme, was chosen for display in Republic Day Parade 2017 at New Delhi.



NBC Recce Vehicle



Bi-Modular Charge System

DEFENCE PUBLIC SECTOR UNDERTAKINGS (DPSUs)

Hindustan Aeronautics Limited (HAL)

7.25 Hindustan Aeronautics Limited (HAL) is a Navratna DPSU with 20 production Divisions, 11 R&D centres and one Facility Management Division spread across the Country. HAL has so far designed and developed 17 types of Aircraft/Helicopters, the latest being HTT-40 (Basic Trainer Aircraft) and Light Utility Helicopter (LUH). Major aircraft/helicopters in the current production range are SU-30MKI, Hawk, Light Combat Aircraft (LCA), Dornier Do-228, ALH and Cheetal helicopters. The Company has achieved turnover of ₹ 8619 crore (provisional) up to December 2016. Export Sales of ₹335 crore has been achieved upto December 2016.



Raksha Mantri in the cockpit of HTT-40 during its inaugural flight on June 17, 2016 at HAL airport, Bengaluru.

7.26 Important Events/ Achievements in 2016-17

- (i) MoU signed with the Indian Army for establishing MRO hubs for the ALH fleet on May 9, 2016. MRO hubs are planned to be established at two places to provide faster repair and maintenance support to ALH fleet of Indian Army.

- (ii) Inaugural flight of HTT-40 took place on June 17, 2016 in the presence of Raksha Mantri.
- (iii) The first carriage flight of Su-30MKI aircraft with Brahmos supersonic cruise missile carried out successfully on June 25, 2016.
- (iv) First "Final Operational Clearance" upgraded Mirage-2000 aircraft was flown on July 28, 2016, a significant milestone in midlife upgrade of platforms to overcome obsolescence issue and enhance the reliability and maintainability of these aircrafts.
- (v) Successfully conducted first technical flight of HAL's indigenous LUH on September 6, 2016.
- (vi) Shareholders Agreement for joint production of Kamov helicopters with Russian Helicopters, Rosoboronexport signed during the summit held at Goa on October 15, 2016.
- (vii) Formation of Helicopter Engine MRO Pvt. Ltd., a Joint Venture Company, for ROH of Shakti & TM3332BD engines.
- (viii) Formation of Naini Aerospace Ltd., a wholly owned Subsidiary.
- (ix) Asia Pacific Aerospace Quality Group (APAQG) has conferred the membership to HAL under the category 'Full Member with voting rights' making India as the 7th nation to join APAQG.

7.27 Awards Received During 2016-17:

- (i) 'SCOPE Excellence Award' for outstanding contribution to the Public Sector Management was presented by President.
- (ii) "Performance Excellence Award 2015"

by Indian Institution of Industrial Engineering (IIIE), in recognition of the achievements and contributions made by HAL towards the nation.

Bharat Electronics Limited (BEL)

7.28 BEL, a Navratna Company, established in 1954 under MoD has nine Units across India with core competencies in areas of Radars & Weapon Systems, Sonars, Communication, EWS, Electro-Optics and Tank Electronics. In Non-Defence sector, BEL's product range includes EVMs, Tablet PCs, Microcircuits, Semiconductors, Solar cells etc.



Inauguration of Coastal Surveillance System at Seychelles by the Hon'ble Prime Minister of India



Hull Mounted Sonar

7.29 **Research & Development:** BEL has R&D facilities in all nine Units to achieve self-

reliance. Company has made a 3 year R&D Plan identifying future programs & various technologies, Knowledge Management Portal etc. On an average 10 new products are introduced annually. BEL spends around 9% of its turnover on R&D.

7.30 **Major achievements in 2016-17:**

- (i) Setting up of Advanced Night Vision Products Factory at Nimmaluru, AP commenced.
- (ii) Firing trial for WLR successfully completed.
- (iii) Secure CDMA Cellular Network (15 CESR) commissioned at Srinagar.
- (iv) 8.4 MW Wind Energy Power Plant commissioned at Davangere (Karnataka).
- (v) Awards won include Dun & Bradstreet India's Top PSU Award 2016, PSE Excellence Awards 2015, India Skill Award 2016, Karnataka Export Excellence Award 2014-15 etc.

7.31 **Future challenges:** Competition has intensified, with the opening of Defence Electronics market to private participation. To combat competition, BEL has adopted various strategies like changes in organizational structure, enhanced thrust on New Product Development, Diversification, Improvement of Process, Infrastructure etc.

7.32 **Indigenisation:** BEL has achieved around 80% of its turnover from indigenously developed products. Some of the major ones in recent past include 3D, L-band 2D Air & Coastal Surveillance Radars, Man-pack Satcom Terminal, Software Defined Radio, Advanced Composite Communication System, Citizen Verification Device, Integrated Sonar Suite for S3/S4 Platform, Integrated EW System for

Mountainous Terrain, Laser Warning System and Gunner Sight for T90, Driver Sight for MBT Arjun/ Arjun Catapult.

7.33 Modernization: BEL has been consistently investing in modernisation of facilities which is essential for successful indigenization efforts. The recent major investments include facilities for Image Intensifier Tube Manufacturing, Near Field Test Range, EMI/ EMC Test Chambers, Super components Assembly/ Testing, Indoor/ Outdoor Test Platforms for Radars & Missile Systems etc. BEL will be investing around ₹500 crore towards CAPEX for 2016-17 through internal accruals.



Akash

Bharat Dynamics Ltd. (BDL)

7.34 Bharat Dynamics Limited incorporated in the year 1970 under the MoD is a pioneer in manufacture of Anti-Tank Guided Missiles in the country. BDL is involved in manufacturing ATGMs of new generation, Surface-to-Air Weapon Systems (SAMs), strategic weapons, launchers, underwater weapons, decoys and test equipment. BDL is fully geared up to meet demands of Armed Forces by capacity augmentation of all major projects.

- Milan, Konkurs-M, Invar and Akash divisions have been accredited to Aero Space Standards, AS 9100C.
- BDL implemented Enterprises Resource Planning/SAP in all Units.
- BDL is lead integrator for Akash (Army). Akash Weapon System is one of the major products indigenously produced and being supplied to Indian Army/Air Force. BDL is also lead integrator for MRSAM.

7.35 Indigenization: BDL is putting determined efforts towards indigenisation of ATGMs with objective of increasing self-reliance, reduction of foreign exchange out flow and cost reduction. Indigenisation of products like Konkurs-M, Invar and Milan-2T achieved upto 90%, 76.4% and 71%, respectively.

7.36 CAPEX & Modernisation: ₹ 250 crore has been earmarked for year 2016-17 on CAPEX towards modernisation of Plant and Machinery and other infrastructure developments.

7.37 Financial Performance: BDL achieved record Sales turnover (net) of ₹ 3785 crore in 2015-16. The sales target is set to exceed ₹ 4400 crore in 2016-17.

BEML Limited

7.38 Manufacturing complexes located at Kolar Gold Fields (KGF), Bengaluru, Mysuru and Palakkad and subsidiary steel Foundry-Vignyan Industries Ltd., in Tarikere, Chikmagalur District. It is engaged in design, development, manufacturing, sales and after sales activities of a wide range of areas of Mining & Construction, Defence and Rail & Metro products. International Business covers 66 countries.

7.39 R&D initiatives and Development of New Products: The Company is spending

around 2.5% of its turnover towards R&D. R&D developed products accounts for more than 50% of turnover in last 3 years. In 2016-17, patents received for Design & Development of Double Compartment Winch with Rope System for Launch & Retrieval of Telescopic Structural Frames.



T-72 Hull Under Manufacturing



Aircraft Towing Tractor 4X4



BD80 Bulldozer

7.40 Indigenization: Indigenization levels are: Mining & Construction products and Rail products - 90%, Metro cars - 50%. Defence products, viz. PMS Bridge, ATT, Aircraft weapon loader, 50T trailer - 100%. Axle & PTO (Type –B Assembly) for Heavy Duty Trucks have been indigenised in 2016-17.

7.41 Awards received:

- SCOPE Award for Excellence and Outstanding Contribution to the Public Sector Management – Special Institutional Category (Turnaround) for the year 2013-14.
- Twin Awards for Skill development and CSR Initiatives.

Mishra Dhatu Nigam Limited (MIDHANI)

7.42 MIDHANI is a prime specialized metal and metal alloys manufacturing “Mini Ratna Category-I” company set up on the 20th day of November 1973 to manufacture critical materials required in the strategic sectors of India's defence industry and for sectors like nuclear power, satellite launch vehicles, aircraft etc. MIDHANI started commercial production in 1983 and has since then successfully supplied special metals and alloys to customers.

7.43 Financial Performance: MIDHANI has achieved an impressive CAGR of about 14.75% in sales over the past 10 years and has also continuously earned “Excellent” performance rating.

7.44 Timely Deliveries to Customers: MIDHANI places great emphasis on minimizing delayed supplies by efficiently managing outsourcing activities, through effective interaction and further business tie-ups. This has resulted in reducing the delayed orders and with the commissioning of 6000T Forge Press, the delayed order is expected to be brought

down drastically thereby ensuring timely deliveries to all its customers.

7.45 Proactive action to improve Research & Development: R&D activities at MIDHANI involve development of new alloys and products. R&D activities also involve identifying new areas/ customers/ product development. MIDHANI has signed MoU with SAIL/ RDCIS, BHEL/ Corporate R&D & NTPC/NETRA and discussions with Indian Railways are also in progress for developing new products. MIDHANI has also signed MoU with IIT Roorkee, IIT Gawahati and IIT Kanpur to work in areas of expertise of their respective institutes. Technology Advisory Board (TAB) of knowledgeable and experienced scientists/ engineers/ persons of repute has met and discussed the future course of R&D.

7.46 Level of Indigenization: Most of the alloys/ products manufactured in MIDHANI are import substitutes and by employing in-house experience, MIDHANI has also reverse engineered many critical alloys/ products. A number of alloys/products have been successfully developed in-house. Some of the recently developed products are MDN465 precipitation hardening stainless steel bars, Superni 740 H for Advanced ultra super critical programme hot rolled bars and wires, Superni 750 MW for semi-cryo engine and Titanium alloy Yi26 forging for Adour engine.

Mazagon Dock Shipbuilders Limited (MDL)

7.47 Mazagon Dock Shipbuilders Limited (MDL) is a leading Shipyard amongst Defence PSU Shipyards, engaged in construction of Warships and Submarines. MDL is presently constructing Missile Destroyers, Stealth Frigates and Submarines in order to achieve self-reliance in warship production for the Indian Navy.

7.48 Commissioning and Launchings: Third ship of P15A, INS Chennai, commissioned on November 21, 2016. Second ship of P15B, Mormugao, launched on September 17, 2016. Second submarine of P75, Khanderi, launched on January 12, 2017. The first submarine of P75, Kalvari, is undergoing sea trials and is being readied for delivery to Navy.



INS Chennai commissioned on November 21, 2016



Khanderi launched on January 12, 2017

7.49 R&D Initiatives:

- ₹ 35.60 crore has been spent on R&D activities as on December 31, 2016.
- Established Shore Integration Facility to provide an environment ensuring the integrity of the equipments;
- HVAC layouts in 3D environment to ensure consistency in order to avoid

interference in the design;

- ergonomics in ship detailed design;
- 3D CAD modeling of Block to envisage the efforts involved in modeling mega blocks for modular construction.

7.50 **Modernisation:** Submarine Assembly Workshop inaugurated on May 28, 2016, has been developed as a second assembly line for submarines. Track of Goliath Crane has been extended. Deepening of Ritchie Dry Dock and channel has been planned to overcome the draught constraint.



Submarine Section Assembly Workshop inaugurated by RM on May 28, 2016

7.51 **Indigenisation:** MDL has already set up dedicated Indigenization department and has “Make-In-India” webpage linked to MoD’s website. Seven major items have been indigenised. Procurement Manual revised to include Indigenisation Clause. Participated in and organised various seminars and exhibitions for spreading awareness and encouraging Indian vendors. Over the years, percentage of indigenisation in shipbuilding in MDL has increased from 42% (Delhi Class) in 1997 to 78% (Kolkata Class) in 2016.

7.52 **Awards:** MDL received the award from President for the Hindi magazine, Jal Tarang.

Garden Reach Shipbuilders And Engineers Ltd. (GRSE)

7.53 Garden Reach Shipbuilders and Engineers Ltd. (GRSE), a Mini Ratna Category-I Company, is a profit making and dividend paying DPSU for the last 23 years. It has kept pace with India’s expanding maritime interests and is established as a leading Shipbuilding yard.

7.54 Presently, 19 warships are under construction in GRSE which include three stealth frigates, two Anti-Submarine Warfare Corvettes, seven Landing Craft Utility (LCU) ships, two Water Jet Fast Attack Crafts (WJFAC) and five Fast Patrol Vessels. Four warships were delivered to Indian Navy (three WJFACs and one LCU) and three warships were launched till December 31, 2016 (one WJFAC and two LCUs).

7.55 **Modernization:** The Shipyard has been modernised to implement modular shipbuilding in construction. The modernized ‘Diesel Engine Assembly Shop’ of Diesel Engine Plant, at Ranchi was inaugurated in April, 2016.

7.56 **R&D/ Indigenisation:** GRSE achieved almost 93% indigenisation content in production during the period upto December 31, 2016. Further, a ‘Display Room’ has been set up for exhibiting/ showcasing indigenized / to be indigenized items. GRSE has also created a ‘Make in India’ cell to boost indigenization and detailed information is available on GRSE’s website.

7.57 Awards & Recognitions:

- (a) Rajbhasha Kirti Puraskar – 1st Prize for Excellence in implementation of official language and Rajbhasha Kirti Puraskar - 2nd prize for Company's Hindi Magazine ‘Rajbhasha Jagriti ’ for the year 2015-16.

- (b) The Quality Leadership Award-2016
- (c) International Convention Quality Control Circle GOLD Award.

Goa Shipyard Ltd. (GSL)

7.58 Goa Shipyard Limited (GSL) is a Mini-Ratna, Category-I company, capable of in-house design and building sophisticated high technology warships for Indian Defence Forces and other varied clients, including Export markets. GSL is the largest exporter of ships from Indian subcontinent and has achieved excellent results on all fronts.

7.59 **Deliveries/ Launchings During the Year:** GSL has delivered two 105M Offshore Patrol Vessel (OPV) to Indian Coast Guard, one Fast Patrol Vessel & 11 Fast Interceptor Boats for Government of Mauritius and one Damage Control Simulator for Myanmar Navy ahead of contractual schedule. Three OPVs (two for Indian Coast Guard & one for Sri Lankan Navy) were launched in the year.



105M Offshore Patrol Vessel

7.60 **Make in India Initiative:** GSL has been selected as Production Agency for indigenous construction of 12 Mine Counter Measure Vessels (MCMVs) under 'Make in India' initiative. Towards this end, yard is creating specialized infrastructure to build these state-

of-the-art ships, first time in the country. Accordingly, Yard 'Infrastructure Augmentation Plan for MCMV' is being executed in four phases, of which Phase 1 & 2 have since been completed in March 2011. The work on Phase 3A, commenced in January 2013, has been completed in August 2016 and was inaugurated by Prime Minister on November 13, 2016 during the function held at Goa.



Inauguration of Facilities by Prime Minister on November 13, 2016 at Goa

7.61 **R&D Activities:** As part of development of product for future requirements of Navy, GSL has developed design of Advanced ASW Shallow Water Crafts. Further an improved design for 50M Fast Attack Platform with new propulsion configuration to achieve better fuel efficiency and enhanced endurance is under development. GSL also carried out the



Fast Patrol Vessel Delivered to Mauritius

development of a Training Ship and delivered it to Indian Coast Guard, in August 2016. The First of the class in-house design of the latest Naval Offshore Patrol Vessel for the Sri Lankan Navy was launched in June 2016 and is due to be delivered in mid-2017. The First of the Class of newly designed export Water Jet Fast Patrol Vessel was delivered to the National Coast Guard of Mauritius in September 2016.

Hindustan Shipyard Ltd. (HSL)

7.62 Hindustan Shipyard Ltd. is the largest and strategically located shipyard under MoD (DDP). Since its inception, the yard has built 178 vessels and repaired 1949 vessels for Defence and Maritime Sector.

7.63 **Major Achievements:** HSL is celebrating Platinum Jubilee on completion of 75 years of its existence in 2016. Coincidentally, in the FY 2015-16, significant achievement has been made by posting a net profit of ₹ 19 crore without any financial grant from the Government. Also, the income and VoP earned are the second and third best respectively since inception of the company.

7.64 **Shipbuilding:** The nation's prestigious project (VC 11184) was floated out on April 25, 2016 at an impressive ceremony. During the year, HSL has delivered 3 Nos. 25T Tugs to Indian Navy and one IPV, 'ICGS Rani Gaidinliu'



ICGS Rani Gaidinliu



IN Tug Balwan

to Indian Coast Guard. It is worth mentioning, that the IN tugs 'Balwan' and 'Sahayak' were built in a record time of 10 months from the date of keel laying for meeting the requirements of International Fleet Review 2016.

7.65 **Ship Repairs:** Seven vessels of various kinds have been repaired during the period from April to December 2016.

7.66 **Submarine Refits/ Construction:** Taking into consideration the expertise gained by the yard in refit of submarines of Russian origin, HSL has been nominated to undertake Normal Refit of INS Sindhuvir (refit scheduled to start in April 2017). Letter of Offer for the construction of two midget submarines (SOV project) was received by the yard on August 18, 2016.

7.67 **R & D:** HSL has a well-equipped Design department which has been recognized as an in-house R&D unit by Department of Scientific & Industrial Research (DSIR), Ministry of Science & Technology (Letter of recognition and certification of registration have been issued by DSIR on March 30, 2016).

7.68 **Higher level of indigenisation:** To promote import substitution, purchase preference clause has been introduced for Indian vendors. Certain items were earmarked for procurement only from MSEs and Start-ups.

7.69 **Modernisation:** Modernisation of the existing infrastructure and facilities is being carried out expeditiously with the fund sanctioned by Government of India under LPD project. Besides, HSL is expected to be nominated for taking up shipbuilding projects of strategic nature under Government of India's agreement with Republic of Korea.

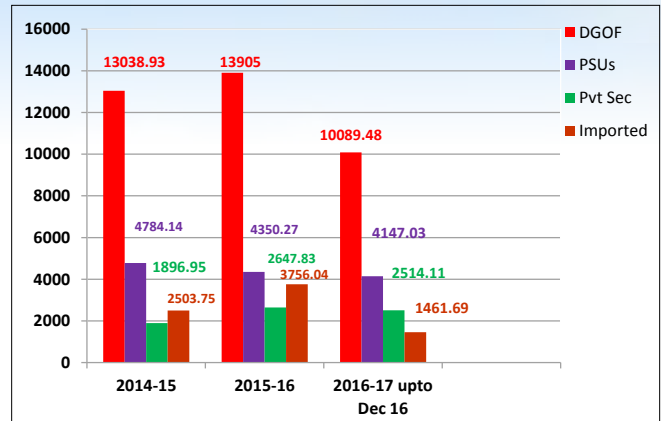
Directorate General of Quality Assurance (DGQA)

7.70 Directorate General of Quality Assurance (DGQA) is an Inter-Service Organisation functioning under the Department of Defence Production in the Ministry of Defence. DGQA is responsible for Quality Assurance of all defence stores and equipment, both imported as well as indigenous for the Army, Navy (excluding Naval Armaments) and common user items for the Air Force procured from Private Sector, Public Sector Undertakings and Ordnance Factories.

7.71 **Organisational Structure and Functions:** DGQA Organisation is structured into eleven Technical Directorates, each responsible for a distinct range of equipment. The Technical Directorates are structured in two tiers for functional purposes, comprising Controllerates and Field Quality Assurance Establishments. In addition, there are Proof Establishments in Armament Discipline for carrying out proof of weapons and ammunition.

7.72 Achievements:

- (i) **Quality Assurance of Stores:** DGQA organisation has carried out inspection of defence stores for the total value of ₹ 18212.31 crore during 2016-17 (Upto December 2016).
- (ii) Manufacturer wise value of stores (₹ in crore) inspected during last three years is as under:



Value of Stores Quality Audited (In ₹ crore)

- (iii) **DGQA Technical Evaluation:** During the year 2016-17 (upto December 2016), DGQA has carried out a total of 80 Technical evaluations and attended 63 User Trials of various stores, ammunition and equipment, comprising of a number of complex sub systems. 20 PDIs and 85 JRIs of various equipment/stores were conducted during the year 2016-17 (Upto December 2016).
- (iv) **155mm Cal FH Gun 'Dhanush':** DGQA carries out Integrated Functional Checks, Structural Proof Firing & Association during User Exploitation at PFFR, BFFR & NFFR (Different firing ranges).



155mm Cal FH Gun "Dhanush"

7.73 **Future Challenges:** The responsibility of Vendor Registration has been reassigned to DGQA. With the "Make in India" programme,

there will be a boost to Indigenisation in the Defence Industry and a resultant growth in the number of new vendors. In order to maintain a uniform standard of Quality and adhere to the strict evaluation norms being followed by DGQA, the concept of Configuration Management (CM) is being adopted to ensure technical integrity control of material throughout its life.

7.74 Implementation of Pilot Project in 06 selected Ordnance Factories: As per recommendations of the Raman Puri committee report, MoD has decided to implement pilot project in six select Ordnance Factories viz. Ordnance Factory Khamaria (OFK), Ordnance Factory Badmal (OFBL), Ordnance Factory Ambajhari (OFAJ), Ordnance Factory Medak (OFMK), Ordnance Equipment Kanpur (OFC) and Gun Carriage Factory (GCF).

7.75 Modernisation: DGQA has upgraded its existing test facilities in line with NABL stipulations. 36 labs have been awarded NABL accreditation. DGQA is also providing the Lab Test facilities & Proof facilities to Private Vendors for Indigenization purposes.

7.76 Training Initiatives: Defence Institute of Quality Assurance (DIQA) carries out training of DGQA officers and officers of other organizations in the field of Quality Management.

Directorate General of Aeronautical Quality Assurance (DGAQA)

7.77 Directorate General of Aeronautical Quality Assurance is the Regulatory authority under Department of Defence Production, MoD, Government of India for Quality Assurance and final acceptance of military aircraft, associated accessories/ stores including Air Armament & Unmanned Aerial Vehicle (UAV) during design/ development/ production/ overhaul/ repair modification & up-gradation. DGAQA also plays important role in providing technical consultation to Ministry of Defence, Service Headquarters, Defence PSUs & Main contractor during various stages of procurement and in-house manufacturing of Defence Aero stores. DGAQA HQ at New Delhi, functions through a network of 34 Field Establishments/ Detachments spread across the country.

7.78 DGAQA is also the nodal agency for Missile Systems Quality Assurance Agency (MSQAA) and Strategic Systems Quality Assurance Group (SSQAG). These are Tri-service (DGAQA, DGQA & DGNAI) organisations for ensuring quality and reliability during design, development & production of Indigenous Tactical & Strategic Missiles, respectively.

7.79 Value Of Stores Cleared: Value of stores provided with QA coverage by DGAQA during the current year and the previous three years is given below:

Financial Year	2013-14	2014-15	2015-16	2016-17	
				01-04-16 to 30-11-16	Anticipated (1-12-16 to 31-3-17)
Value in ₹ (crore)	21,803	19,829	23,067	11,261	12,339 (Approximately)

7.80 Major projects under QA coverage of DGAQA

- (a) **Development /Manufacture Projects:**
 (i) SU-30 (MKI) & Advanced Jet Trainer

- (ii) Advanced Light Helicopter (ALH): Manufacture (Hawk MK-132): Manufacture under licence from Original Equipment Manufacturer (OEM).
 Manufacture

- (iii) Light Combat Helicopter (LCH): Development & Manufacturing
- (iv) Light Utility Helicopter (LUH): Development
- (v) Light Combat Aircraft (LCA): Manufacture
- (vi) Dornier (DO-228) aircraft : Manufacture
- (vii) Intermediate Jet Trainer (IJT) & Light Combat Helicopter (LCH): Development/ Manufacture
- (viii) Saras Transport Aircraft (Military Version): Development
- (ix) Pilotless Target Aircraft (PTA-Lakshya): Manufacture
- (b) **Repair & Overhaul (ROH) Projects:** SU-30 MKI/MG-21 BISON/Mig-27 aircrafts, Jaguar/ Kiran Jet Trainer/ Mirage-2000 aircrafts, Dornier (DO-228)/ Avro (HS-748) aircrafts, Depot level maintenance of UAV Engines under ToT from IAI Malat, Israel.
- (c) Besides regular Manufacture/ Repair/ Overhaul of aircrafts, various Up-gradation and Modifications as and when required are also undertaken by DGAQA for QA coverage.

7.81 **Important Policy Decisions Taken:**

- (i) One time mandatory overhaul check recommended for all engines (Dart MK533.2) which have already undergone 4th overhaul because of failure of compressor casing attributed to aging issue.
- (ii) DGAQA has prepared a model based upon International Aeronautical Quality Group (IAQG) for Quality Rating of production agency. This model will assess the organisation quality maturity and effectiveness by determining the quality rating of the organisation/firm.

Two of the HAL Divisions have been identified for implementation of this model as pilot project namely HAL (AMD) Nasik & HAL (MRO) Bangalore.

- (iii) Standard Operating Procedure (SOP) on transfer of inspection responsibilities from DGAQA to Ordnance Factory Board (OFB) has been finalized and signed by both stake holders.
- (iv) Standard Operating Procedure (SOP) on Registration and capacity assessment of Firms/ Vendors has been finalised and uploaded on DGAQA website.

7.82 **Major Achievements:**

- (a) LCA TEJAS participated in Bahrain International Air Show. DGAQA representative provided QA coverage & issued certificate of safety for flight after verifying as per the specified procedure.
- (b) The first prototype (PT-1) of Light Utility Helicopter (LUH) was cleared for first maiden flight on October 28, 2016.
- (c) The first prototype of Hindustan Turbo Trainer (HTT-40) underwent its first flight on May 31, 2016.
- (d) Unmanned Aerial Vehicle (UAV) RUSTOM-II has undergone its maiden flight successfully at Aeronautical Test Range Chitradurga. DGAQA provided QA coverage for the UAV.
- (e) LCA TEJAS participated in IRON FIST 2016 held at Pokhran on March 18, 2016. LCA aircraft demonstrated its capabilities for Laser Guided Bomb & live R-73 Missile with actual firing. DGAQA rep provided QA coverage as well as issue of flight safety certificate.

Directorate of Standardisation (DOS)

7.83 The Directorate of Standardisation came into existence in 1962 to contain proliferation of Defence Inventory of the three services and to reduce it to optimum level by establishing commonality in equipment/components which is progressively achieved through formulation of varied Standardisation Documents, Codification of items and entry control.

7.84 **Targets & Achievements:** As per roll-on-plan 2016-17, 37 new and 470 revised documents have been completed and approximately 6755 Standardisation documents were circulated upto December 31, 2016.

7.85 As TIER-1 member of Allied Committee – 135, the Apex Codification body under NATO, Directorate of Standardisation has brought new concept of global codification system which will enable Indian Industries to be part of International Logistic system and participate in International Defence Procurement System. Further, the implementation of web-based Codification Software will enable Indian Industries to access International Logistic database and enhance visibility globally.

7.86 Bilateral Agreement to share Codification information with DLIS-USA is signed as an FMS case in June 2016.

Directorate of Planning & Coordination

7.87 The Directorate of Planning and Coordination, an attached office of Department of Defence Production, was established in 1964. The Directorate is primarily mandated to promote Indigenization in defence sector through various enabling policies viz. 'Make in India' initiative, liberalization of FDI Policy/

Industrial licensing policy, providing level playing field to private sector and giving preference to procurement from indigenous route. The Directorate is responsible to maintain and update the 'Make-in-India' portal on Defence Ministry's website. The Directorate strives to foster international cooperation in defence sector and boost export of defence equipment to other countries.

7.88 In addition, the Directorate renders advice from DDP's perspective on capital acquisition proposals of Service Headquarters and also plays significant role in streamlining of Defence Procurement Procedure (DPP). The Directorate is also playing key role in the ongoing modernisation of Shipyards.

Defence Exhibition Organisation (DEO)

7.89 The main charter of DEO is to organize and co-ordinate Defence exhibitions in India and abroad, primarily with a view to promote export potential of defence oriented products and services, developed and manufactured by the Indian Defence Industry.

7.90 **International Exhibitions in India:** To provide a platform for the Indian Defence Industry to showcase its capabilities, DEO organizes two biennial International exhibitions in India, namely Aero India and Defexpo India. While Aero India is dedicated to aerospace and aviation industry, focus of Defexpo India is on land and naval systems.

(i) Aero India which began in 1996, has already carved a niche for itself as a preeminent international exhibition on aerospace, defence, civil aviation, airport infrastructure and defence engineering. The 11th edition of Aero India-2017 was

organized from February 14-18, 2017 at Air Force Station Yelahanka, Bengaluru.

(ii) DEFEXPO INDIA conceived as a complementary exposition to Aero India was launched in 1999. The 9th edition of Defexpo India was held from March 28-31, 2016 in Naqueri Qitol in Quepem Taluka of South Goa, Goa State. Defexpo India is clearly steering the path of steady growth and has been receiving overwhelming and unprecedented international response with each edition. The exhibition has showcased India's emergence as an attractive destination for investment in the defence sector and acted as a platform for alliances and joint ventures in the defence industry. An interactive seminar on the defence procurement procedures and offset policy along with B2B meetings, exhibitors' press conferences, product launches are regularly arranged to bring the participants abreast with the latest developments. This show also attracts a wide network of international government and military agencies. For the first time live demonstration was held by DRDO, Bharat Forge and TATA during Defexpo India – 2016.

(iii) Apart from these exhibitions, DEO has participated/organised the following exhibitions:

(a) International Fleet Review (IFR) - 2016: The International Fleet Review (IFR) – 2016 of Indian Navy held during February 3-6, 2016 in Visakhapatnam, Andhra Pradesh was organised by DEO.

(b) Make In India, MUMBAI: Make in India Week-2016, was organized by CII

from February 13-18, 2016 at MMRDA Grounds, Bandra-Kurla Complex, Mumbai. OFB, DRDO and all DPSUs had participated in the show. The participation of OFB, DRDO and DPSUs was coordinated by Defence Exhibition Organisation (DEO).

(c) Vibrant GUJARAT – 2017: The 8th Vibrant Gujarat Global Trade Show/ Summit – 2017 was organised from January 9-13, 2017 at Gandhinagar, Gujarat. OFB, DRDO and all DPSUs participated in the show coordinated by DEO.

7.91 **International Exhibitions Abroad:**

(a) With a view to provide an impetus to export potential of Indian Defence Industry, DEO organizes "India Pavilion" in major defence international exhibitions abroad to develop market for defence products being manufactured by them.

(b) During the current financial year 2016-2017, India Pavilion was set up at the following overseas international exhibitions:

(i) ILA Berlin Air Show from June 1-4, 2016 at Berlin Expo Centre Airport, Berlin, Germany.

(ii) Eurosatory 2016 Exhibition from June 13 to 17, 2016 at Paris, France.

(iii) Farnborough Air Show 2016, from July 11 to 17, 2016 in United Kingdom.

(iv) Africa Aerospace and Defence (AAD) - 2016 from September 14-18, 2016 at South Africa.

- (v) Japan International Aerospace Exhibition 2016, from October 12 to 15, 2016 at Tokyo, Japan.

National Institute for Research and Development in Defence Shipbuilding (NIRDESH)

7.92 NIRDESH has been set up at Chaliyam, Kozhikode, Kerala with the objective of achieving self-reliance in Ship building. The Institute has been envisaged as a Centre of Excellence for India's futuristic Shipbuilding programmes. The

thrust of the institute is focussed on R&D, design, technology development and training, along with industry interfacing, to boost shipbuilding. Raksha Mantri heads the Board of Governors of NIRDESH, with representations from the MoD, Indian Navy, Coast Guard, DRDO and Public Sector Shipyards, as members. This nerve centre will be responsible to collate and consolidate existing capabilities, develop new capabilities and remove existing gaps. NIRDESH has since commenced its activities as per the defined mandate.





DEFENCE RESEARCH AND DEVELOPMENT



Defence Research and Development

Background

8.1 Defence Research and Development Organisation (DRDO) is the country's leading organisation involved in design and development of indigenous Defence systems. The organisation has set its sights on making India self-sufficient in Defence equipments ranging from missiles, radars, sonars, electronic warfare, engineering systems, surveillance and recce systems, among others. DRDO is also looking at providing state-of-the-art communication systems, electro-optics, night vision devices, information security products, naval & airborne weapons etc. Each of these has been developed using indigenous manufacturing and testing facilities to maximum extent.

8.2 DRDO has typically worked together with Ordnance Factory Boards (OFBs) and Defence Public Sector Undertakings (DPSUs) to build products/systems for the nation. However, DRDO has also drawn the Indian private sector into its fold both because of requirement and with the view to broadening India's defence industrial base. This is in sync with the Government's vision of 'Make in India' to transform India into a global manufacturing and innovation hub whose products become synonymous with superior quality and inspire confidence among global consumers.

Organisational Structure

8.3 DRDO is headed by Secretary, Department of Defence Research and

Development who was also the administrative head as Director General DRDO (DG DRDO). In September 2016, the Government re-designated the post of DG DRDO as Chairman DRDO.

8.4 DRDO labs are grouped into seven technology clusters namely, Aeronautical Systems (AERO), Armament and Combat Engineering Systems (ACE), Electronics and Communication Systems (ECS), Life Sciences (LS), Micro Electronic Devices and Computational Systems (MED & CoS), Missiles and Strategic Systems (MSS) and Naval Systems and Materials (NS&M). Each of these clusters function under cluster DGs. The seven DG offices are located at Bangalore (Aero and ECS), Pune (ACE), Delhi (MED & CoS and LS), Hyderabad (MSS) and Vishakhapatnam (NS&M). The labs under each cluster DG is given in Table No. 8.1.

8.5 DRDO also has three human resource institutions i.e. Centre for Personnel Talent Management (CEPTAM), Institute of Technology Management (ITM) and Recruitment and Assessment Centre (RAC). There are also three certification agencies under DRDO's fold i.e. Centre for Military Airworthiness and Certification (CEMILAC) for airworthiness products, Centre for Fire Explosive and Environment Safety (CFEES) for fire and explosives and Scientific Analysis Group (SAG) for grading of information security products. These certification agencies provide services

Table 8.1
Heads of Technology Domain Based Clusters with Constituent Laboratories

Cluster DG's	Labs
DG (Aero)	ADE, ADRDE, CABS, GTRE
DG(ACE)	<i>Armaments:</i> ARDE, CFEES, HEMRL, PXE <i>Combat Vehicles:</i> CVRDE, DTRL, R&DE(E), SASE, VRDE
DG (ECS)	CHESS, DARE, DEAL, DLRL, IRDE, LASTEC, LRDE
DG (LS)	DEBEL, DFRL, DIBER, DIHAR, DIPAS, DIPR, DRDE, DRL(T), INMAS
DG (MED & CoS)	<i>Micro Electronic Devices:</i> ANURAG, MTRDC, SSPL <i>Computational Systems:</i> CAIR, JCB, SAG
DG (MSS)	ASL, DRDL, ITR, RCI, TBRL
DG (NS&M)	<i>Naval Systems:</i> NMRL, NPOL, NSTL <i>Materials:</i> DLJ, DMRL, DMSRDE

not just for DRDO but other organisations of Government of India as well. Additionally, Regional Centers for Military Airworthiness (RCMAs) under the aegis of CEMILAC are located at different stations all over the country. Four research boards (Aeronautics, Naval, Armaments and Life Sciences) function under DRDO funding to provide thrust to basic research in academia in the areas of strategic importance.

8.6 In addition, Department of Defence R&D has one autonomous body viz. Aeronautical Development Agency at Bengaluru, one joint venture viz. BrahMos Aerospace at Delhi and

one Deemed university viz. Defence Institute of Advance Technology (DIAT) at Pune.

DRDO Headquarters

8.7 DRDO headquarters (HQ) at Delhi, which coordinates the overall functioning of the organisation, is an interface between the Government and the cluster HQs and laboratories. There are five Chief Controllers R&D (CC R&D) to oversee the activities of the corporate HQ. The organisation chart of corporate HQ is given in Table 8.2. In addition, there is a CC R&D who functions as CEO & MD BrahMos - the Indo Russian joint venture in which DRDO is a partner.

Table 8.2
Corporate Structure of DRDO

Chief Controllers (R&D)	Corporate HQ
CC R&D (HR)	Centre for Personnel Talent Management (CEPTAM), Defence Institute of Advanced Technology (DIAT), Defence Scientific Information and Documentation Center (DESIDOC), Human Resource Development (HRD), Institute of Technology and Management (ITM), Personnel, Public Interface, Recruitment and Assessment Centre (RAC), Right to Information (RTI) Cell
CC R&D (R&M)	Budget Finance and Accounts (BF&A), Civil Works and Estates (CW&E), Cyber Security (CS), Defence Technology Commission (DTC) Sectt., Management Services, Material Management, Parliamentary Affairs, Planning and Coordination (P&C), Programme Office (PO-I & PO-II), Rajbhasha and O&M, Vigilance and Security (V&S)

Chief Controllers (R&D)	Corporate HQ
CC R&D (PC & SI)	Industry Interface and Technology Management (IITM), Interaction with Services for Business (ISB), International Cooperation (IC) and JVs, Low Intensity Conflicts (LIC), Quality, Reliability and Safety (QR&S), SA to Chiefs, Technical Advisors Abroad
CC R&D (TM)	Extramural Research and Intellectual Property Rights (ER&IPR), Futuristic Technology Management (FTM), Research Boards, Research Innovation Center (RIC), Centers of Excellence
CC R&D (SAM)	Institute for Systems Studies and Analyses (ISSA), Simulation and Modeling Centre (SAM-C)
<i>*Dte. of Cyber Security functions as CISO under the administrative control of DG (MED & CoS)</i>	

Manpower

8.8 DRDO has a total strength of 24,578 employees, out of which 7,410 are in Defence Research and Development Services (DRDS), 9,297 in Defence Research and Technical Cadre (DRTC) and 7,871 are in Administration and Allied Cadre.

Budget

8.9 During the current financial year 2016-17, DDR&D has been allocated ₹ 13,593.78 crore (BE) which is about 5.5% of the total Defence Budget. A total of ₹ 6,865.73 crore has been allocated under Capital head and ₹ 6,728.05 crore under Revenue head.

Programmes and Projects

8.10 During the calendar year, 78 new projects have been sanctioned at a total cost of ₹ 3,723 crore and 42 projects at a total cost of ₹ 1,353 crore have been completed.

8.11 DRDO currently has 291 ongoing projects (excluding strategic projects) amounting to approximately ₹49,030 crore (including User share). Out of 291 ongoing projects, 42 large projects (cost ≥ ₹ 100 crore) have a cost of ₹42,643 crore (DRDO's share~ 70% of the total share).

8.12 The year 2016 witnessed a number

of significant milestones/ achievements in DRDO projects, some of which are detailed in succeeding paragraphs:

Light Combat Aircraft (LCA) 'Tejas':

Indigenously developed LCA is an advanced technology, supersonic, light weight, all-weather, multi-role fighter aircraft designed for multiple combat roles. Currently there are 13 Tejas aircraft undergoing flight trials (including Naval version). As on December 31, 2016, a total of 3310 flight tests on 16 Tejas aircrafts have been completed. 'Tejas' made its international debut in January 2016 with participation in the Bahrain International Air Show. In the company of F22 of USA and Euro fighters, it demonstrated impressive maneuvers which were well appreciated. It also participated in IAF exercise Iron Fist in March 2016. Air-to-air missiles and laser guided bombs (air to ground weapon) were fired to showcase multirole capability during the exercise. The milestone event was the formal induction of LCA when HAL handed over the first two Tejas aircraft to IAF at a ceremony held at ASTE Bengaluru on July 1, 2016 which will make up the 'Flying Daggers' 45, the name of the first squadron of LCA. Air to ground weapon trials were concluded at IAF base Jaisalmer in October 2016. Establishment of production facilities

at Hindustan Aeronautics Limited (HAL) for production rate of 8 aircrafts per annum is in progress.

LCA Navy: LCA Navy is designed to operate from the deck of aircraft carriers and incorporates stronger landing gear to absorb forces exerted during the ski jump ramp during take-off. A total of 115 flights (as on December 31, 2016) have been completed on the two LCA Navy prototypes, a two seat trainer (NP1) aircraft and a single seat fighter (NP2) aircraft. NP2 aircraft participated in Defexpo 2016. Other trials included ski-jump launch from SBTF, ski-jump/ night ski-jump from RGS, fuel dumping trials, LEVCON -30° sorties, approach trials, hot refueling, short take-off from landing area with deck pressure and high sink rate landing.

Airborne Early Warning and Control (AEW&C) System: The AEW&C System consists of sensors mounted on an aircraft, for locating and providing early warning to air and ground stations of airborne & sea surface targets, and hostile emissions. All the mission systems have been integrated on the first two aircrafts and the developmental trials are in advanced stage of progression. The system integration on the third aircraft is also under progress. Ground Exploitation System (GES) is being integrated with Integrated Air Command and Control Station (IACCS). The ground systems shifted to the IAF operational base at Bhatinda have been established. The training of one set of Air Force personnel for operation and maintenance crew, in addition to documentation etc. has been completed. AEW&C participated in Akraman exercise in Gwalior during November 9 to 12, 2016. AEW&C is likely to be inducted into the IAF shortly.

Airborne Warning and Control System (India): The programme envisages the development of six systems in two phases. The procurement of



aircraft being a major task is under progress. The development of critical systems namely the dome based antenna is under progress through a lead in project, USHAS.

Medium Altitude Long Endurance UAV 'Rustom-II': Rustom-II, a multi-mission unmanned aerial vehicle (UAV) is being developed with an endurance of 24 hours to carry out the intelligence, surveillance and reconnaissance (ISR) roles for the three Armed Forces. It is capable of carrying different payloads viz. EO/IR, SAR, ELINT/ COMINT to perform missions during day and night. As on date, seven airframes (AFs) have been realized. During the year, taxi trials commenced w.e.f. August 8, 2016 and a total of 75 taxi runs have been conducted. DRDO also successfully carried out the first design validation flight (DVF) of Rustom-II from Aeronautical Test Range (ATR), Chitradurga in the month of



November 2016. The flight accomplished the main objectives of proving the flying platform, such as take-off, bank, level flight and landing etc. Development of indigenous payloads is under progress at different DRDO labs.

Heavy Drop System (HDS): Heavy Drop System (HDS) with capability to drop loads like 3 Ton from AN-32 aircraft and 7 Ton & 16 Ton from IL-76 aircraft have already been developed. Army has already placed an indent on OFB for 159 sets of 3 T HDS. P-7 HDS has been accepted by the Army for induction. A total of six UATTs have been completed for the P-16 HDS and the system has met all the requirements of guidance. User trials for the system are being carried out.

Controlled Aerial Delivery System: Airdrop technology is a vital capability for rapid deployment of payloads to specific rendezvous points. CADS for 500 kg All Up Weight (AUW) has been successfully developed by DRDO. During the year, two CADS demonstration trials in Yumthang Sikkim region were successfully conducted.

Medium Size Aerostat Surveillance System 'Nakshatra': 'Nakshatra' is an integrated medium size aerostat surveillance system for surveillance, communications broadcasting, airborne early warning and detection of low flying aircrafts & missiles. During the year, deployment trial up to 1000 m AMSL was successfully conducted at User site at Gurdaspur. The project has completed its scope/ objectives and is under closure.

Long Range Surface-to-Surface Ballistic Missile 'Agni-5': Agni-5 was successfully flight tested on December 26, 2016. This was the fourth test of Agni-5 missile and the second one from a canister on a road mobile launcher. All the four missions have been successful.

User trials of Inducted Missiles: The following trials were carried out during the year: Agni-1 missile – March 14 & November 22, 2016, Prithvi-II missile – February 16, May 18 & November 21, 2016 and Dhanush missile – March 15 & November 26, 2016.

Surface-to-Air Missile 'Akash': The medium range (25 km) surface-to-air missile 'Akash' has been developed and inducted into Indian Air Force (IAF) and Indian Army (IA). During the year, Akash Army version User exercise was carried out. DRDO has also undertaken two new projects of Akash this year, Akash New Generation (Akash-NG) has been conceptualized with solid propulsion, wing-body-tail configuration, electro-mechanical control system, active RF seeker and laser proximity fuze. The system will be capable of search, track and fire while engaging 10 targets at ranges up to 50 km with configuration of CCU, multi function radar (MFR) and launcher for air defence of VA/VPs. Akash Mk-1S have been undertaken in TD mode to prove the upgradability of Akash Mk-1 missile with RF seeker through necessary modification/retrofitment on the existing missiles.



Long Range Surface-to-Air Missile (LRSAM):

LRSAM having a range of 70 km is a joint development programme of DRDO, Indian Navy and Israel Aerospace Industries (IAI), Israel. The missiles are intended to equip the three guided missile destroyers of the Indian Navy. LRSAM Home-on-Tests were conducted at ITR during September 2016 to prove three intercept scenarios with Banshee Jet 80 as target.

Medium Range Surface-to-Air Missile (MRSAM):

MRSAM Weapon System is being developed for the Indian Air Force (IAF) for protecting our own territories and ground forces from air attacks. The system is jointly developed by DRDO, IAF and IAI, Israel. During the year, three flight trials were successfully carried out during June/ July 2016 to evaluate target detection and tracking by Long Range Detection and Tracking Radar (LBMFSTAR), missile launch and homing on target and radar tracking & ASP generation.

Supersonic Cruise Missile 'BrahMos':

BrahMos is a two stage supersonic cruise missile with a solid propellant booster as its first stage and liquid ramjet as the second stage. The missile has a flight range of up to 290 km with supersonic speed all through the flight, leading to shorter flight time. It operates on 'fire and forget principle' adopting variety of flights on its way to the target. The missile carries a conventional warhead weighing up to 300 kg. The missile was inducted into Indian Navy in 2005. The induction of land attack version in Indian Army commenced in 2008, after series of successful launches during 2004 to 2007

The Air Version BrahMos supersonic cruise missile has been successfully developed for integration with Su-30MKI. The first captive flight trial of modified Su-30MKI with launcher and missile was carried out in June 2016 successfully. A major milestone of missile separation trial from aircraft was achieved



in August 2016. On completion of ongoing technical work, drop trials and operational launch, the air version of BrahMos supersonic cruise missile will be inducted into the Indian Air Force.

Beyond Visual Range Air-to-Air Missile

'Astra': Beyond visual range air-to-air missile 'Astra' (60 km) possessing high single shot kill probability making it highly reliable is being developed by DRDO to engage and destroy highly maneuvering supersonic aerial targets. The missile incorporates many unique features like active radar terminal guidance, excellent electronic counter-counter measure (ECCM) features, smokeless propulsion and process improved effectiveness. During the year, Astra missile launch as part of Iron Fist-2016 operation was carried out at the Pokhran range. User trials with Banshee targets covering different scenarios have been carried out successfully in December 2016. Air Force clearance for LSP of 50 missiles has been obtained.

Third Generation Helicopter Launch Anti-Tank Guided Missile 'Helina'

'Helina': Helina is a 3rd generation helicopter launch anti-tank guided missile with 7 km lock-on-before-launch (LOBL) range capability with imaging infra-red (IIR) for integration on Advanced Light Helicopter (ALH-WSI). Helina weapon system comprises of four launchers, eight missiles and one fire control system. During the year, captive flight trials (CFT) were conducted from HAL, Bangalore and Desert Ranges of Rajasthan.

Anti-Tank Missile 'PROSPINA': 'Nag' is a 3rd generation anti-tank missile (ATM) with 'Fire & Forget' and 'Top Attack' capabilities, which can be used in day and night. It is deployed on a specially modified Infantry Command Vehicle (ICV) BMP-2 vehicle called 'NAMICA'. During the year, guided flight tests of 'Nag' were carried out with the objective of demonstrating

the range capabilities of IIR Seeker during the worst time of the day in summer environment.

Quick Reaction Surface-to-Air Missile

(QRSAM): QRSAM weapon system is capable of search on move, track on move and fire on short halts while engaging multiple targets at ranges of about 30 km with two vehicle configuration for area Air Defence. System design has been completed and most of the sub-systems including X-Band Quad Transmit Receive Modules (QTRMs), Two Way Data Link (TWDL) onboard segment etc. are under realization. Missile configuration has been finalized and system will be flight tested in early 2017.

New Generation Anti-Radiation Missile

(NGARM): DRDO is involved in the design and development of NGARM having a range of 100 km. AKU-58 launcher after suitable modification will be used for missile integration on Su-30 MKI aircraft. During the year, captive flight trials (CFT-1) sorties were carried out at AF Station, Pune with Su-30 MKI aircraft. During May 2016, lab test trials with radome were completed at selected frequencies.

Smart Anti Air Field Weapon (SAAW):

SAAW is long-range, stand-off, precision air-to-surface weapon (125 kg class) capable of engaging ground targets for launch from Jaguar and Su-30 MKI aircrafts. During the year, mechanical, electrical and avionics integration of SAAW to Jaguar CLP was successfully completed and communication between SAAW OBC and Jaguar MC was established. Captive flight trials which included 9 sorties were also completed at Bengaluru. Drop Trials of SAAW from Jaguar are under progress.

Ku-band Active Radar Seeker (Ku-band

ARS): DRDO has undertaken a project for the indigenous development of Ku-band seeker to replace modules of imported seeker. Captive

flight trials of first indigenous Ku-band active radar seeker were successfully carried out from Su-30 aircraft in February 2016 at AF station, Pune. The seeker was integrated with the Astra missile in weapon system configuration on the Su-30 aircraft and could successfully track the target Su-30 aircraft.

Glide Bomb: DRDO has indigenously developed 1000 kg glide bombs both in non-winged and winged version. During 2016, carriage and drop trials of both the bombs were conducted successfully.

Open Range RCS & Antenna Measurement Facility (ORANGE): ORANGE has capabilities for full scale Radar cross section (RCS) measurement, RCS reduction and antenna measurement facility from UHF to W band of frequencies. During 2016, the facility has been used for RCS data base generation for PG AD Target Missile, Glint and RCS fluctuation study of target missile for interceptor approach distances from 500 m to up to 20m at various orientation, RCS data base generation and imaging studies on Garuda and Garuthma, RCS mitigation Studies to lower the RCS signature of the Garuthma configuration, Performance evaluation of RF seekers (X/W) at various range length distances against calibrated targets.



Rail Track Rocket Sled (RTRS) National Test Facility: The augmented Penta Rail Track RTRS dynamic test facility is 4 km in length and can provide 10 different combinations of rail gauge from 0.7 m to 4.86 m to accommodate wide variety of test stores. It can propel a mass up to 1.5 ton to the velocity of 2.0 Mach. The track has 50 ton dynamic load bearing capacity at any point and test object can be stopped on the track after trial using different braking mechanism for post trial analysis of test object. Recently trials for Flap opening of HSTDV, Impact trials of PCB penetrating projectile of SAAW and clean launching of 1000 kg class bomb for its impact on compacted soil target at one (01) Mach velocity were conducted.

Advanced Towed Artillery Gun System (ATAGS): DRDO has taken up the task of design and development of 155 mm X 52 calibre ATAGS having higher range, accuracy and consistency for requirement of Artillery of Indian Army. ATAGS sub-systems including barrel, muzzle brake, breech mechanism, dial sights, recoil system, gun structures, automotive system, automation and control system, battery command post, surveillance system and optronic sight are under advanced stages of realisation with different ordnance factories and private industries. The first dynamic firing of integrated ATAGS ordnance and recoil system on fixed firing stand was conducted in February 2016. Two sets of ordnance (barrel,



breech mechanism, muzzle brake) and recoil system have been realised and proof fired at PXE Balasore at two different occasions to the maximum achievable pressure of 568 MPa (for service pressure of 465 MPa), which is achieved for the first time in the world. For proof firing of ordnance and recoil system, a very robust facility of fixed firing stand (FFS) has been designed and developed by ARDE along with its development partner and is installed and commissioned at PXE Balasore. The complete gun structural and automotive system along with automation and control system has been realised for two gun systems and factory acceptance test (FAT) commenced for strength of design trials in December 2016 at PXE Balasore.

New Family of Munitions (NFM): Six types of munitions are being designed and developed by DRDO viz. Soft Target Blast Munition 'NIPUN', Anti-Tank Point Attack Munition 'VIBHAV', Anti-Tank Bar Munition 'VISHAL', Directional Fragmentation Munition 'PARTH', Anti-Tank Munition 'PRACHAND' and Jumping Fragmentation Munition 'ULKA' to improve the existing munitions and enhance its performance. During the year, Phase-I & Phase-II User trials of 'NIPUN', 'VIBHAV' and 'VISHAL' were completed. Development phase and UATT trials have been completed successfully for 'PARTH' munition and is ready to be offered for Users trials. Trials of 'PRACHAND' were conducted in May 2016 at Jhansi to check the performance of software. Field testing of 'PRACHAND' was also carried out. Comparative fragmentation trials for 'ULKA' and M-16 (existing) were completed in Aug 2016 and 50 sets of ULKA munitions were evaluated for Design Parameters.

Penetration-cum-Blast (PCB) and Thermo-baric (TB) Ammunition for 120 mm Arjun Tank: PCB ammunition has been designed to defeat bunkers, light concrete structures,

administrative buildings, field fortifications and machine gun posts. The TB ammunition is being designed to defeat light vehicles, infantry formations, etc. Test firing of 120mm PCB & TB tank ammunition specifically designed for 'Arjun' tank was carried out during January 2016 in association with active involvement of Army. The trials were carried out during January 2016 in association with active involvement of Army. The trials carried out for the first time were aimed to demonstrate the effectiveness of the above ammunition on Derelict Tank fitted with instrumentation to measure the shocks, blast pressure and advanced imaging systems. The new ammunition will add a quantum jump in the fire power of Main Battle Tank (MBT) 'Arjun'.



Arjun Main Battle Tank (MBT) Mk-II: Arjun MBT Mk-II has been designed and developed incorporating 84 improvements (73 tank fittable) over and above Arjun MBT Mk-I. The system is in advanced phase of User trials. About 67 out of 73 tank fittable improvements have been declared successful. DGQA evaluation and Maintenance Evaluation Trials (MET) have been ordered for the successful improvements. Only missile firing demonstration is the major pending improvement, though demonstrated earlier to USER. Towards this, DRDO has taken up development of optimised Add-on Laser Target Designator in project mode.

During the year, User had intimated on the requirement for conduct of 'Integrated User Confirmatory Trials (IUCT)' on Arjun MBT Mk-II Prototype 1. As a prelude, DRDO conducted extensive 'Integrated DRDO confirmatory trials' at Mahajan Field Firing Range (MFFR) during May & June 2016. All systems of the tanks were individually and as integrated system were evaluated during the trials. IUCT will be conducted along with missile firing capability.

Bi-modular Charge System (BMCS) of 155 mm Artillery Gun: DRDO has taken a pro-active step in developing BMCS for 155 mm artillery gun for operations at high altitude region. During the year, triple base propellant was developed, charge mass assessment and confirmatory trials were carried out, temperature co-efficient trials were conducted and ballistic parameters established. BMCS modules were also evaluated in 155 mm 45 cal gun to establish ballistic parameters.

Self-Propelled Mine Burier (SPMB): SPMB is developed to lay/bury anti-tank land mines. The equipment has undergone first phase of User trials. The equipment has performed successfully during the trials.

46m Military Load Class (MLC-70) Modular Bridge: DRDO has developed a mechanically launched single span 46m MLC-70 modular bridge with bridge length variable from 14m to 46m in step of 6.5m. The complete system has been realized and the bridge superstructure, launching nose and bank seat beams (BSBs) have been tested successfully under simulated loads. Second prototype of the system has been successfully realised. Technical trials have been completed and the project has been successfully closed this year.

Composite Sonar Dome: Composite Sonar Dome for P15 Class of Ships has been successfully developed and realised. The acoustic testing of

first dome has been completed successfully. The dome is awaiting integration with the ship. The realisation of second dome is in progress.

Wheeled Armour Platform (WhAP): WhAP is a multi-utility armoured platform with modular design, configurable for variety of combat and combat support roles up to 26 ton GVW. During the year, Armoured Prototype-I duly integrated with BMP-II turret has been realized and following trials have been successfully conducted: flotation trials at Mula dam, firing trials at KK ranges and mobility trials at MFFR, Rajasthan.



Handing over of Naval Systems to Indian Navy: The following Naval/ Sonar systems were handed over to Chief of Naval Staff by Raksha Mantri during 2016:

- 'Abhay', an advanced active-cum-passive integrated sonar designed and developed for smaller platforms, capable of detecting, localising, classifying and tracking sub-surface and surface targets.
- 'HUMSA UG' system designed for upgrading the HUMSA sonar system on the Indian Naval platforms.
- 'AIDSS', an advanced indigenous distress sonar system which is used to indicate that a submarine is in distress and enable quick rescue and salvage.
- Near-field Acoustic Characterization System (NACS) determines the in-

situ performance of the sonar systems which are used to find the frequency-dependant 3D transmission and reception characteristics of the sonar.

With the induction of these four systems, the underwater surveillance capability of the Indian Navy will get a boost, besides providing a fillip to the 'Make in India' initiative of the Government of India.

'Varunastra' - Heavy Weight Ship Launched Torpedo: 'Varunastra' is a ship launched anti-submarine torpedo which features autonomous guidance algorithms, insensitive munitions warhead and GPS based recovery aid for practice torpedo. After exhaustive User trials, 'Varunastra' system was handed over to the Indian Navy by Raksha Mantri in June 2016.



Advanced Light Towed Array Sonar (ALTAS): ALTAS is an efficient sensing system for detection, localization and classification of submarines operating especially in the below surface layer ocean conditions. It is useful in anti-submarine warfare operations and is the apt sensor to locate silent submarines capable of launching high speed torpedoes. During the year, technical trials were conducted wherein detection and localization of dived submarine in active and passive modes was established. High speed towing at 16 knots was also demonstrated successfully.

HUMSA – NG: This is the 3rd generation, ship borne, hull mounted active cum passive sonar system. Two different configurations of the system namely keel mounted configuration and bow mounted configuration with different sets of capabilities and features have been developed. This system is presently installed on over ten ships of the Indian Navy of four different classes. Phase II Sea Acceptance Trials were carried out in December 2016 and cleared onboard INS Kamorta successfully.

USHUS–2: It is a submarine sonar which will be installed in four EKM submarines. This will replace the existing Russian sonars onboard these submarines. Design and development of engineered model of USHUS-2 is carried out in NPOL and productionised at BEL Bangalore.

Integrated Coastal Surveillance System (ICSS): ICSS provides a coastal monitoring solution for early detection, location and monitoring of small unregistered/ suspicious surface vessels in a controlled area as well as small submerged objects at harbour mouths. The stations were established at Kochi for Proof of Concept (PoC) demonstrations. Three stations have been set up on the coast of Balasore and sensors for ICSS were installed and made operational in July 2016. During October 2016, PoC tests in integrated ICSS configuration at Balasore were completed successfully.

Portable Diver Detection Sonar (PDDS): DRDO has taken up a new Technology Demonstration project in 2016 to design and develop a PDDS system that is capable of detecting small targets such as divers and diver delivery vehicles in and around harbours. During the year, lab prototype was fabricated and trials conducted at UARF, Kulamavu in January 2016. Installation and testing of deployment system on board INS Sagardhwani was also completed in March 2016. In-house acceptance tests of the first

system are expected to be completed by early 2017 followed by finalization of the design of subsequent systems and trials during 2017.

Advanced Light Weight Torpedo (ALWT): ALWT is an anti-submarine torpedo launched from ship, helicopter or fixed wing aircraft. ALWT has dual speed capability and endurance of 25 km at low speed (25 knots) and 12 km at high speed (50 knots). Technical Trials were conducted with practice configuration torpedo through introduction of extra Thermal battery for activation of actuation system during water entry phase for diving and the stability of the torpedo and same is established consistently.

Land Based Prototype (LBP) for Air Independent Propulsion (AIP) System for Indian Submarines: The main objective of the project is to develop a 270kW phosphoric acid fuel cell based LBP for AIP and to demonstrate a LBP of the AIP as an integrated power unit of peak raw power 270kW housed in a simulated hull section having nearly similar equipments as required for the submarine version. Sub-system realization is under progress. During the year, limited endurance testing of Pre Fabrication Floor Module (PPFM) of LBP was successfully completed.

Internal Radar Warning Jammer (RWJ) System for Jaguar Darin III upgrade Aircraft (D-JAG System): D-JAG is an integrated EW system for radar warning and jamming. The system encompasses radar warning receiver (RWR) and electronic counter measures (ECM)

functions. The system intercepts and identifies airborne, ship-borne and ground based radars used for target acquisition, tracking and missile guidance. During the year, the Engineering Unit of Core EW LPRF has been realized and ATP completed. Two Core EW HPRF Units have been realized; Flight test of cooling system on D&D aircraft was completed and pulse transmitter and high power RF switch integrated and demonstrated to IAF.

Internal EW System for MiG-29 Upgrade Aircraft (D-29 System): D-29 is an integrated EW system for warning and jamming that encompasses RWR, ECM, and ESM functions and utilizes state-of-the-art active phased arrays for selectively jamming the multiple threat radars. During the year, 29 sorties have been completed for multi emitter trials. Limited emitter trials were conducted at Nasik and multi emitter trials at Gwalior. User's observations are presently being addressed.

Software Defined Radio (SDR): DRDO, in a consortium approach with CDAC and WESEE as development partners and BEL as the production partner, is working towards the development of a family of network-enabled, interoperable and modular SDRs to provide wireless secure communication capability to both mobile and fixed forces as required by the Indian Navy. Five form factors viz. SDR-Naval Combat, SDR-Tactical, SDR-Manpack, SDR-Airborne and SDR-Handheld, along with related 13 waveforms (including 4 legacy waveforms) are being realised. The achievements during the



SDR-Naval Comm



SDR-Tactical



SDR-Airborne



SDR-Man Pack



SDR-HandHeld

year include: Independent ATP of Engg SDR-NC; Testing of SDR-Tactical & SDR-MP with all waveforms including UHF and L-band MANET, radio management and security features; Performance testing of SDR-Airborne LRUs with V/UHF legacy and HF waveforms followed by system testing for Phase-I trials.

S-Band Hub and Ground SATCOM Terminals:

DRDO has realized four types of satellite terminal hardware namely, Manpack Satcom Terminal (MST), Satcom Messaging Terminal (SMT), Handheld Satcom Terminal (HST) and Satcom On The Move Terminal (SOTM) with BEL as the production partner. Achievements in the year include: Handing over of 15 nos. each of MST and SMT to Army HQ; User Assisted Trials of MST and HST held at Mumbai, Leh and Dehradun; Testing of HST over GSAT-6 and Testing of SOTM with respect to stabilization system carried out with GSAT-6.



EW Systems ‘Samudrika’ for Capital Ships, Aircrafts and Helicopters for Indian Navy:

DRDO has taken up the development of a family of seven EW systems. The ship-borne systems include EW Suite ‘Shakti’, COMINT ‘Nayan’ and ESM ‘Tushar’. The air-borne systems include COMINT ‘Sarvadhari’, ESM ‘Sarang’ & ‘Sarakshi’ and ESM & COMINT ‘Nikash’. Design of each of the above mentioned products has been completed and hardware is under realization. M/s. BEL will be the prime production agency for the production

of EW systems. During the year, lab demo of Sarvadhari, Nikash (COMINT) and Shakti systems were conducted. Engineered Model of NAYAN System has been installed on platform and Harbor Acceptance Tests (HATs) are in progress.

‘VARUNA’ ESM System for Indian Navy:

‘Varuna’ is a modern ESM System capable of interception, detection, classification and identification of pulsed, continuous wave (CW), pulse repetition frequency (PRF) agile, frequency agile radars including low probability of intercept (LPI) radars over wide frequency bands. During the year, ‘Varuna’ 1st Production System was delivered to users and was installed on the platform. The installed system is currently undergoing HATs.

Border Surveillance System (BOSS):

DRDO is involved in design and development of border surveillance system comprising of EO payload consisting of thermal & day camera, LRF, GPS & DMC and BFSR for day/ night monitoring of border area to ease man-patrolling by automatically detecting the intrusion. During the year, two units of BOSS have been realized and deployed in Leh & Ladakh region. Performance has been demonstrated to GOC and Corps Commander HQ.

Commander’s Thermal Imaging Sights:

During the year, winter User trials of Commander’s TI cum LRF sights for T-90 tanks were carried out at PFFR in January 2016 to evaluate the efficacy of sight to operate at low temperature, check its endurance, ruggedness & detection, recognition & identification performance at night. EMI/EMC, DGQA and MET trials of Commander’s Thermal Imager for T-90 tanks have been completed. Supplementary User trials, EMI/ EMC, DGQA and MET of non panoramic Commander’s TI sights for 3 variants of BMP tanks were also

conducted to evaluate the performance of new LCD monitor and display over six hours of continuous operation.

Low Cost Surveillance Equipments (LCSE): Two Low Cost Surveillance Equipment (LCSE) have been realized and deployed in border areas under Northern Command. LCSE is being exploited by the Army and RFP for 06 Nos. of LCSE has been issued to Production Agency (PA).

Low Level Transportable Radar (LLTR) 'Ashwini': 'Ashwini' is a fully active medium range surveillance radar. It is ground based S band rotating active phased array radar system for air space surveillance to detect and track air targets (at altitudes from 30 m to 15 km), under hostile EW operational environments. Qualification of all the sub-systems has been completed. During the year, technical trials have been initiated.



Medium Power Radar (MPR) 'Arudhra': 'Arudhra' is a fully active aperture rotating multi-beam multifunction phased array radar with staring mode. The radar has a detection range of 300 km for 2m² targets. It is also provided with a mode for detection and tracking of low RCS, high speed and highly maneuvering targets. During the year, Phase I &

Phase II User trials were completed wherein the performance parameters of the radar (coverage, resolution, max. detection range, manoeuvre target tracking and low RCS target tracking) were validated through dedicated sorties.

Synthetic Aperture Radar (SAR): SAR with ground moving target indicator (GMTI) capability is an important air-borne sensor in UAV for imaging, surveillance and reconnaissance. It is capable of detecting slow moving target such as armoured tanks, convoys, trucks etc. During the year, flight testing on flying test bed (FTB) was completed, all algorithm were developed and proved. The system was extensively tested with 40 functional sorties, comprising of 60 flying hours.

Active Electronically Scanned Array Radar (AESAR) 'Uttam': Project 'Uttam' aims at development of fully engineered, qualified and deployable state-of-the-art active electronically scanned array radar (AESAR), indigenously, with scalable architecture that can be adapted for various types of fighter class of airborne platforms. During the year, AAAU prototype was tested on rooftop. Integration and testing of engineered version is in progress.

Experimental Technology Modules for Directed Energy Laser System: DRDO is involved in the development of 10kW proof-of-concept directed energy system against UAVs like target and establishment of critical technologies of precision tracking/ pointing and laser beam combination. During the year, 2 kW Brass Board unit integrated on to a prototype tracking gimbal mount was successfully tested/ demonstrated for beam pointing/beam combination at a range of 1km on ground moving and wire-rope moving target. The 2kW Laser Beam Delivery System (LBDS) was also tested/ demonstrated for coarse & fine tracking of aerial target (Netra) and for physical destruction of flying low cost quad copter at range of 1 km.

ANURAG Communication System on Chip for Data and Voice Application (ANUSANDESH):

The aim of the project is to develop a communication on chip with advanced features which will provide good communication capability to Defence forces. To achieve the same System on Chip with ARM, processors will be developed as per Users requirement. During the year, ARM11767 CEVA DSP based System on Chip was taped out. Package design and load board design is being carried out in parallel with the help of partner labs.

S-band Digital Multimedia Broadcast (DMB) Terminal for Satellite Communication (AMBAR):

The objective of the project is to develop technologies for enhanced ground segment for multimedia broadcast services compatible with the Indian satellite GSAT-6. During May 2016, AMBAR multimedia broadcast terminal has been tested with GSAT-6 North Satellite in Dehradun.

C-X-Ku-band Microwave Power Module (MPM) for EW POD:

The project involves design and development of phase and gain matched C-Ku band 100 W (CW) compact MPM for EW-POD and high-efficiency C-Ku band 100 W (min) CW micro-TWT. During the year, three nos. of micro-TWTs have been developed. Integration and testing of MPM Proto-1 have been completed and MPM Proto-2 in CW is in progress.

Indian Maritime Situational Awareness System (IMSAS):

The project IMSAS aims at providing a comprehensive situational picture to commanders at shore, fleet as well as platform levels. The project execution has begun in Mission Mode for the development of the system that will be deployed Pan NAVY. The first build of the system would be fielded in September 2017. The complete system would be fielded in phases over the next three years.

NBC Individual Protective Equipments:

The improved NBC IPE comprising of NBC Suit Mk-V, NBC Mask Mk-II, Integrated Hood Mask Mk-II, NBC Over boot Mk-II, NBC Gloves Mk-II, Haversack Mk-II, Personnel Decontamination Kit Mk-II & Decontamination Suit Mk-II were developed by DRDO in association with private industries. Army has already placed a supply order for 50,000 nos. of NBC Suit Mk-V. Respirator Mask Mk-II has successfully cleared User trials and RFP for 45,000 masks is under finalisation.



Telemedicine System: Telemedicine system has been successfully developed by DRDO for far-flung/ land locked areas. The system has been accepted by Indian Navy for installation across Naval Platforms and DAC has granted clearance for implementation. Army is in the process of trials under the aegis of HQ IDS (Med) and induction id likely to begin after successful trials.

Drug Development: Fourteen NBC protective drugs have been developed by DRDO under the NBC Programme Phase I. These drugs are cleared by DGCI for CBRN emergency. Subsequently DGAFMS clearance has been obtained for their induction. Monoisoamyl dimercaptosuccinic acid (MiADMSA) is developed by DRDO and is under trial as a potential treatment for chronic arsenic poisoning. The drug has been approved by the DCGI as an 'Investigational New Drug'.

Chemical Agent Detectors: Chemical Agent Detectors in the form of ACADA (Automatic Chemical Agent Detector & Alarm) and CAM (Chemical Agent Monitor) were developed by DRDO in partnership with M/s. L&T Bangalore.

These devices are based on ion mobility spectrometry and are capable of detecting chemical agents such as nerve, blister, blood and choking agents. AoN of procurement of ACADA & CAM has been initiated by Army.

Flame Retardant Anti G Suit: The Anti G Suit developed by DRDO is flame retardant in nature and the bladder is made up of thermoplastic Poly Urethane coated Nylon fabric which is Radio Frequency (RF) weldable and hence easy and quick to fabricate. Production orders for quantity 153 numbers have been placed by IAF.

50 men Solar Heated Oxygen Enriched Shelter: Solar heated oxygen enriched shelter has been developed by DRDO combining the technologies of both solar shelter and oxygenated shelters. The shelter will be heated by solar energy and also store the excess energy in the phase change material, for use during evening hours. It is meant for 50 persons and has been installed at Giagong (North Sikkim) at an altitude of around 16,000 ft.

Space Heating Device (Bukhari) (sheds): A new SHED has been developed by DRDO which gives both radiative as well as convective type heating. Most of the heat is extracted because of its energy efficient design. It is efficient in



terms of kerosene consumption and heat generation. The CO build up in the room is almost zero as all the gases are exhausted to outside. It is totally safe as there are no chances of blast by the back draft of air. The burner

simply extinguishes and does not reignite itself. The burner alone can also be used for cooking or warming of food. Apart from Army, BSF has also shown interest in the Bukhari and has given tendering for procurement of 2000 pieces.

Bio-diesel as emergency fuel: During International Fleet Review (IFR) 2016 from February 4 to 8, organized by Indian Navy at Visakhapatnam, the Fast Interceptor Crafts (FIC) T-307 and T-311, which were the part of the Presidential Column were run on B20 blend of Jatropha derived bio-diesel developed by DIBER.

Indigenization of Microwave Chaff for Defence Application: Chaff is one of the most widely used and effective expendable electronic countermeasure devices. During the year, limited qualification tests (LQT) for indigenously developed chaff cartridges were carried out in the presence of representative from RCMA (AA), Pune. Flight safety clearance has been given by RCMA (AA), Pune.

Bullet Proof Jacket: DRDO is involved in the development of prototype of bullet proof jacket (BPJ) in all three sizes as per GSQR 1438 using different state of art ballistic materials providing protection against 9mm SMC ammunitions, AK47 (MSC and HSC) and 7.62 SLR. During the year, Phase I and Phase-II trials as per GSQR (soft armour conditioning protocol and hard armour thermal and mechanical durability test) of BPJs were successfully carried out at TBRL Chandigarh under UATT. Ballistic trials of large and small size soft and hard armour panels against 9 mm SMC, AK-47 (MSC, Varagoan Hard Core Steel - VHSC) and 7.62 SLR were also successfully carried out. The successful trial has finalized the optimum configuration for BPJs as per Army GSQR.

Materials and Technologies for Stealth Application: The project for development

of materials and technologies for signature management of Ground based and Airborne Platforms was concluded this year. During the year, camouflage efficacy analysis of multi-spectral camouflage paints (MSCP) and mobile camouflage systems (MCS) fielded on T 90, T 72 and MBT Tanks were conducted in 16 Army Units of Jodhpur, Bikaner and Suratgarh. Thermal Target Systems emulating T-72 Tanks signatures were successfully fielded for firing trials of NAG missile in January & September 2016.

Technologies for Nuclear Defence: Nuclear Defence technologies developed in NBC Phase-I programme were field evaluated at Submarine Safety System (SSS) facility, Indian Navy and found to be useful. NSQRs have been received and project has been launched for Portal, Floor, Hand Foot and Laundry monitors for measuring radio-active contamination during nuclear war/ disaster scenario. Modernized NBC protection system of personnel carrier BMP 2/2k accepted by Armed Force has been trial evaluated for fitment at OF, Medak. Technology for networking of area monitors for round the clock monitoring of gamma radiations has been developed and installed at boarder areas of Rajasthan (BSF post) and coastal areas of Vizag, Goa, Port Blair etc.

Naval Materials: To cater to the needs of the Indian Navy, DRDO successfully developed the technology for indigenous production of naval steels using the infrastructure existing in the country. During the year, certification (for underwater use) of 20 mm DMR 249A plates produced at SAIL plants has been completed. Trial production of AB3 steel plates and forgings has also commenced and achieved reasonable success in the initial trials.

Non-Sparking Tools: DMRL has developed a

Cu-4.5Ti alloy for manufacture of non-sparking tools as a substitute to toxic and expensive Cu-Be alloys. The technology has been transferred to Pahwa Metal Tech Pvt Ltd., and the plant set-up by them has now become operational.

8.13 **Corporate Initiatives**

Services Interaction: Major systems developed by DRDO and approved by DAC for induction during the year include: Light combat aircraft (LCA) Mk 1A; Varunastra torpedo; Commanders' TI sight for T-90; EW system Shakti with Nayan COMINT; low level light weight radar (LLLR) Mk-II, HUMSA NG etc. at a total cost of ₹ 69,445.89 crore. The production value of DRDO developed systems (inducted and approved for induction) today is approx. ₹ 2.56 lakh crore. Provisions for development of indigenous systems/products have also been included in the DPP-2016, which will enable smooth induction of systems to be taken up for development by DRDO. DRDO has established mechanisms for regular interaction with the Services through means of joint reviews with Indian Air Force, quarterly interaction meetings (QIMs) with Indian Army and synergy meetings with Indian Navy.

Industry Interface: DRDO technologies are transferred to Indian industries/ DPSUs/ OFBs as per the 'Guidelines for Transfer of Technology'. In the year under report 50 ToT to industries have been executed by DRDO. The export potential of DRDO systems is evident from NOCs granted by MoD to the industries. 142 NOCs for export have been granted by MoD for 310 products for about ₹ 17352 crore, out of which, 88 products of worth ₹ 10609 crore are based on technology developed by DRDO.

Participation in International Exhibitions: DRDO participated in the 9th Africa Aerospace and Defence Exhibition (AAD-2016) during

September 2016 in South Africa where 30 countries participated with 400 exhibitors. This included indigenous AEW&C System, LCA Tejas, Akash Missile System, various Ground/Naval based Radar systems, sonars and torpedoes etc. Indian Defence technologies were also on display at Bahrain International Air show held at Sakhir Airbase, Bahrain in January 2016. India showcased its state-of-the-art airborne platforms and associated sensors and communication systems designed and developed by DRDO. 'Rise of Futurism' was the theme of DRDO at Defexpo 2016. DRDO's participation in Defexpo 2016 was marked with first time live demo of products which included Light Combat Aircraft (LCA) 'Tejas', Main Battle Tank 'Arjun' Mk-I & Mk-II, Wheeled Armoured Platform (WhAP), 'Akash' Air Defence System, Radars etc., besides, static display of models and exhibits. The event emphasised DRDO's commitment towards 'Make in India' to provide state-of-the-art technologies and products to the Armed Forces.

International Cooperation: In the year 2016, DRDO conducted regular annual bilateral Defence R&D meetings with USA, UK, Russia and Israel. A number of Project Agreements with USA (under JTG), Russia (under IRIGC) and Israel (under IIMC) were signed by DRDO. MoU between DRDO and Canadian Commercial Corporation (CCC) for Cooperation in "Development of Military and Defence Related Technology, Infrastructure, Training and Service" was signed in October 2016. DRDO participated as part of the Technical Expert Meeting at the MTCR plenary session at Busan, South Korea. DRDO also participated in the Certain Conventional Weapons Session in Geneva.

Initiatives in Project Management: With the aim of tightening project management in

DRDO, Procedures for Project Formulation & Management (PPFM) of DRDO were revised and released this year. Some of the major changes brought out in the revised document are: selection of projects based on attribute scale, enhanced pre-project ground work, project costing guidelines and detailed guidelines on project sanction, execution, closure and way forward. Procurement Manual 2016 which incorporates, at one place, the rules and guidelines and the processes involved for procurement of goods and services was released by Raksha Mantri for use by all DRDO laboratories/ establishments.

Academia Interaction: The Jagadish Chandra Bose Centre of Advanced Technology (JCBCAT), a DRDO-Jadavpur University initiative was sanctioned in June 2016. Jadavpur University, IIT Kharagpur, NIT Durgapur, IIST Shibpur, ISI Kolkata, CGCRI Kolkata and IIIT Hyderabad will pursue multi-institutional collaborative research leading to development. Centre of Propulsion Technology (CoPT) at IIT Bombay was sanctioned in June 2016 to pursue research in the area of propulsion technology. This is a bi-nodal center with IIT Bombay and IIT Madras as the two major nodes. Joint Advanced Technology Centre (JATC) at IIT Delhi was sanctioned in October 2016. The center will undertake research in areas of advanced ballistics, special structures & protection technologies, advanced electromagnetic devices and THz technologies, brain computer interface & brain machine intelligence etc. During the current year, a Centre for "Structure and Chemistry of Materials at Atomic Scale" was also created at IISc. As a part of extramural research (ER) activity, 39 new projects were sanctioned including 8 projects to be carried out at RIC, Chennai.

Intellectual Property Rights (IPR): About 145 IPR applications (including 3 in foreign countries) were processed for filing on products/process covering various fields of armaments, electronics, instrumentation, materials, biomedical sciences, food technology etc. for providing legal protection to innovations of DRDO scientists. 44 patents (including 5 in foreign countries) were granted during the period. In addition, 4 copyrights and 7 designs were registered in India. In order to promote IPR awareness among DRDO scientists, five IPR awareness programmes were held during the period.

Research Boards: Four research boards (Aeronautics, Naval, Armaments and Life Sciences) function under DRDO funding to provide thrust to basic research in academia. During the year, 54 projects were sanctioned to various institutes.

8.14 Implementation of Government Initiatives: Annual and five year action plans for 'Swachh Bharat' have been prepared and the activities are being pursued as per the plans. International Yoga Day was celebrated across all labs. For giving an impetus to the mission of 'Make in India' initiated by the government, workshops on the theme were organised by DRDO labs. Steps have been taken for realising the goals under 'Minimum Government, Maximum Governance', 'Digital India' and 'e-Governance' initiatives in an integrated manner.

8.15 With commendable achievements across most of its technology domain, DRDO stands committed to delivering cutting edge technologies/ systems to the Indian Armed Forces as part of its mission towards a self-reliant Nation.



INTER SERVICE ORGANISATIONS



Inter Service Organisations

9.1 The following inter-Service organizations function directly under Ministry of Defence:

- (i) Military Engineer Services
- (ii) Armed Forces Medical Services
- (iii) Directorate General Defence Estates
- (iv) Office of the Chief Administrative Officer
- (v) Directorate of Public Relations
- (vi) Services Sports Control Board
- (vii) Armed Forces Films and Photo Division
- (viii) National Defence College
- (ix) School of Foreign Languages
- (x) History Division
- (xi) College of Defence Management
- (xii) Defence Services Staff College
- (xiii) Ministry of Defence Library

MILITARY ENGINEER SERVICES (MES)

9.2 Military Engineer Services (MES) provides support to the three services at Strategic and Operational level. The organization is manned by professional and technically competent officers and subordinate staff.

9.3 The MES functions under the overall control of Engineer-in-Chief at the Army Headquarters, who is advisor to the Ministry of Defence and the three Service Chiefs on all

facets of works related issues. MES has an annual budgetary work load exceeding ₹ 12000 crore. As a part of modernization plan of Defence Forces, a large number of infrastructure projects have been planned to be executed. MES has also been supporting military diplomatic initiatives by creating infrastructure abroad for friendly foreign Governments/countries. The MES organization, comprising of proficient personnel who are deployed across the length and breadth of the country at remote locations in all types of terrain and inhospitable climatic conditions, has been playing an important role in empowering the combat effectiveness of the Armed Forces. The organization is not only geared up to provide works services support during peace time but is also equipped to provide dedicated support during war.

9.4 Prestigious Projects under Progress

(a) Modernisation of Central Ordnance Depot (COD) Agra and Jabalpur:

- (i) As part of overall "Modernization Drive", Army Ordnance Depots are also being upgraded with Modern Infrastructure and Automation. CCS approved Modernization Project of COD Agra and Jabalpur on April 11, 2007 for an amount of ₹ 751.89 crore. The work was originally to be executed by DRDO, but later transferred to MES on March 4, 2008.

(ii) The modernization plan encompasses the conversion of old store house shelters into large span modern Pre Engineered Building (PEB) structures (largest size 198m x 54m) for warehousing. These structures have modern stacking and retrieval system of stores with Mechanized Handling Equipment and Very Narrow Aisle (VNA) tracks. Various modern facilities such as High Rise Inventory Storage System, Warehouse Management Software, Fire Fighting Arrangements and Access Control are incorporated in the scheme of things. In addition, administrative buildings and OTM accommodation/ escort lines are also being constructed.

(iii) Phase I of the project has been completed and two works of phase II costing ₹ 73.33 crore and ₹ 66.52 crore for COD, Agra and COD, Jabalpur respectively, are in progress. Revised CCS Note for an amount of ₹1518.18 crore with PDC as December 2018 is in the process for final approval.

(b) Improvement of Habitat and Living Conditions of Troops in High Altitude Areas (HAA Pilot Projects):

(i) Pilot Projects of Phase I and Phase II for improvement of habitat and living conditions of troops in high altitude areas to shortlist design and construction technique were successfully completed with an overall outlay of ₹ 194.86 crore.

(ii) Phase III works as approved for a total cost of ₹ 63.65 crore are under progress.

(iii) The trial evaluation of the assets being created is under progress and decision to launch the main project would be taken post trials.

(c) **Infrastructure Development in Eastern Command:** Cabinet Committee on Security (CCS) accorded approval for infrastructure development in Eastern Sector. The total works under planning/ execution are 97 for which land has been made available.

(d) **National War Memorial and National War Museum:** The proposal for construction of National War Memorial at 'C' Hexagon at India Gate and National War Museum at Princess Park, New Delhi, with underground connectivity between them, for an approximate cost of ₹ 500 crore was approved by the Cabinet on December 18, 2015.

(e) Renewable Energy:

(i) **Solar Photo Voltaic (SPV) Project by MES:** Action Plan for implementation of Solar Photo Voltaic (SPV) power project by Defence for the period 2015-19, has been finalised and the same is being implemented in the following phases:

Sl. No.	Service	Number of Projects	Capacity (MW)
(a)	Phase I (2015-16)	27	41.50
(b)	Phase II (2016-17)	62	108.50
(c)	Phase III (2017-18)	To be announced (Emphasis on Roof Top)	

(ii) **Mode of Execution:** MES SPV works are to be executed in Engineering, Procurement and Construction (EPC) mode by adopting T&Q bid format of tendering. The power plants will be owned by MES and maintained under MES supervision.

Major Initiatives/ Decisions/Policies

9.5 The following major initiatives/decisions/policies have been undertaken/ issued which will have great impact on the functionality and performance of the organisation.

(a) Seventeen new units have been raised to meet the existing work load and to meet new challenges.

(b) Certain monumental policies have been issued to emulate best, tested and prevalent practices, to streamline the functioning by clearing ambiguities and thus enhancing the overall performance parameters of the organisation. These include:

(i) Use of Renewable energy (both as standalone and roof top projects) and LED Lights for energy conservation. 71.5 MW of Solar Photo Voltaic projects at 38 Army stations, 20 Air Force stations and 4 Naval stations have been planned for the year 2016-17.

(ii) e-Procurement and e-Tendering as per Government guidelines.

(iii) Streamline preparation of Rough Estimates and Approximate Estimates.

(iv) Adoption of 'Green Norms' in new projects.

(c) A policy has been issued making Employee Provident Fund number or application of EPF number by contractor as mandatory provision for eligibility in e-Tendering.

(d) Certain important cases are being pursued with the MoD which include:

(i) Revision of DWP 2007.

(ii) Adoption of New Construction Technology (Design Build) to meet work load and quality in the MES.

(iii) Hiring of JEs for Supervision of work against the Deficiency.

(iv) Revision of Scales of Accommodation 2009.

(v) Revision of Norms of Maintenance.

9.6 Important Projects Completed

(a) Completed Works of Army

(i) **Sewage Treatment Plant at Old Cantonment Allahabad:** The work was sanctioned for an amount of ₹ 2.80 crore and completed in July 2015.

(ii) **Infrastructure for CTW Phase II at Mhow:** The work was sanctioned for an amount of ₹ 10.93 crore and completed in July 2015.

(iii) **OTM Accommodation at Bathinda:** The work was sanctioned for an amount of ₹ 26.64 crore and completed in August 2015.

(iv) **Ammunition Shed in Western Sector:** The work was sanctioned for an amount of ₹ 7.43 crore and completed in August 2015.

(v) **Officers' Mess and Single Accommodation in Rajasthan:** The work was sanctioned for an amount of ₹ 2.21 crore and completed in August 2015.

(vi) **OTM Accommodation at Ambala:** The work was sanctioned for an amount of ₹ 11.5 crore. Work completed in August 2015.

(vii) **Sainik Institute at Agra:** The work was sanctioned for an Amount of ₹ 2.53 crore and completed in September 2015.

(viii) **Children School at Mathura:** The work was sanctioned for an amount of ₹ 12.68 crore and completed in December 2015.

- (ix) **OTM Accommodation at Meerut:** The work was sanctioned for an amount of ₹ 16.13 crore and completed in January 2016.
- (x) **OTM Accommodation at Faizabad:** The work was sanctioned for an amount of ₹ 10.26 crore and completed in March 2016.
- (xi) **OTM Accommodation at Gopalpur:** The work was sanctioned for an amount of ₹ 1.43 crore and completed in March 2016.
- (xii) **OTM Accommodation at Ambala:** The work was sanctioned for ₹ 32.94 crore. Work completed in February 2016.
- (b) **Completed Works of MAP:**
- (i) **Phase II at Air Force Station, in Western Theatre:** The work was sanctioned for an amount of ₹ 32.96 crore and completed in February 2016.
- (ii) **109 DUs at Air Force Station:** The work was sanctioned for an amount of ₹18.30 crore and completed in March 2016.
- (c) **Completed Works of Navy/Coast Guard:**
- (i) **OTM Accommodation at Mandapam:** The work was sanctioned for an amount of ₹ 6.66 crore and completed in April 2015.
- (ii) **Addition/ Alterations of Multi Storied Buildings at Visakhapatnam:** The work was sanctioned for an amount of ₹15.87 crore and Phase I was completed in August 2015.
- (iii) **Provision of Hangar and Connected Services at Vizag:** The work was sanctioned for an amount of ₹ 67.88 crore and completed in April 2016.
- (iv) **Infrastructure at Arakkonam:** The work was sanctioned for an amount of ₹ 45.88 crore and the work is in progress.
- (v) **Provision of Officers' Mess and Accommodation at Daman:** The work was sanctioned for an amount of ₹ 5.80 crore and the work is in progress.
- (d) **Completed Works of Air Force:**
- (i) **Integrated Logistic Section at an Air Force Station:** The work was sanctioned for an amount of ₹ 7.34 crore and completed in July 2015.
- (ii) **Accommodation with Mess for Trainee sat an Air Force Station:** The work was sanctioned for an amount of ₹ 4.66 crore and completed in July 2015.
- (iii) **Married Accommodation at an Air Force Station:** The work sanctioned for ₹ 5.50 crore and completed in August 2015.
- (iv) **Work Services for Hospital in Western Sector:** The work was sanctioned for an amount of ₹ 34.09 crore and completed in August 2015.
- (v) **Extension of Existing Dispersal at Airfield in Gujarat:** The work was sanctioned for an amount of ₹ 10.97 crore and completed in August 2015.
- (vi) **ATC/MET Complex at Air Force Station in Rajasthan:** The work was sanctioned for an amount of ₹ 7.85 crore and completed in September 2015.
- (vii) **Hangar with Annexe at AF Station:** The work was sanctioned for an amount of ₹ 21.48 crore. Work completed in September 2015.
- (viii) **OTM Accommodation at Air Force Station:** The work was sanctioned for an

amount of ₹ 6.64 crore and completed in October 2015.

- (ix) **Married Accommodation at Air Force Station:** The work was sanctioned for an amount of ₹ 39.87 crore and completed in November 2015.
- (x) **Married Accommodation at Air Force Station:** The work was sanctioned for an amount of ₹ 13.66 crore and completed in December 2015.
- (xi) **Auditorium cum Cinema Hall at Air Force Station:** The work was sanctioned for an amount of ₹ 6.72 crore and completed in December 2015.
- (xii) **Modification of Blast Pens for Air Force Station:** The work was sanctioned for an amount of ₹ 24.85 crore and completed in December 2015.
- (xiii) **OTM Accommodation at Air Force Station:** The work was sanctioned for an amount of ₹ 5.02 crore and completed in January 2016.

ARMED FORCES MEDICAL SERVICE (AFMS)

9.7 The AFMS has a distinguished record of providing dedicated and dependable health care to the defence personnel and their families. Medical services are also provided to personnel of para-military organizations, while posted in the field, and other Central Police/ Intelligence organisations and General Reserve Engineering Force Units, operating in the disturbed and forward areas of the country. AFMS also provides medical care to the ex-servicemen and their dependents within the country. During natural calamities, disasters and operational areas, it also serves civilian population.

9.8 The Armed Forces Medical Services (AFMS) consists of the Medical Services of the Army, Navy and Air Force and the Directorate General, Armed Forces Medical Services. Each Medical Service is under a Director General Medical Service (DGMS) in the rank of Lt. General or equivalent. The Director General, Armed Forces Medical Services (DG, AFMS), who heads the Service, is also medical advisor to the Ministry of Defence and the Chairman of the Medical Services Advisory Committee. The AFMS include officers of the Army Medical Corps (AMC), AMC (Non-Tech), the Army Dental Corps (ADC) and the Military Nursing Services (MNS). There are 132 Armed Forces Hospitals. The authorized strength of AMC, ADC, MNS and AMC(NT) is 7073, 705, 4943 and 369, respectively.

9.9 Important decisions/ activities undertaken during the year:

(I) **Augmentation of manpower in AFMS:** In May 2009, the Government had approved augmentation of the manpower of AFMS by 10,590 personnel in three equal phases of 3530 personnel each. The augmentation of manpower under Phase I & Phase II has been completed. Phase-III of additional authorisation of manpower to AFMS which comprised of 433 Medical Officers, 683 MNS officers, 2348 Personnel Below Officers Rank and 66 Civilians, has been sanctioned in February, 2016 and the recruitment of additional manpower is in progress.

(II) Commission in AFMS

(a) **Short Service Commission (SSC) from civil sources:** 627 doctors from civil sources including 196 women were granted SSC in 2016.

(b) **Commission of Armed Forces Medical College (AFMC) cadets:** 108 cadets (89 Male candidates and 19 Female candidates) from AFMC have been granted commission during the year 2016 as under:

- (i) Permanent Commission (PC) - 49
- (ii) SSC - 59

(c) **Grant of Departmental Permanent Commission (DPC) to SSC officers:** 14 Short Service Commission officers have been granted DPC in 2016 (Male 11 and Female 3).

(d) **Grant of DPC to AMC (NT):** 5 SSC officers of AMC (NT) are to be granted DPC against the vacancy for the year 2016.

(e) **SSC in AMC (NT) to Personnel Below Officer Ranks (PBOR):** 5 SSC were granted to PBORs in AMC (NT) against the vacancies for the year 2016.

(III) **Armed Forces Medical College, Pune:**

The college provides training to under graduate and post graduate Medical and Nursing students with assured career prospects in the Defence Services. Admission for MBBS was conducted centrally through the NEET-UG and a total of 32996 candidates applied online for admission to AFMC, Pune for the year 2016. Based on their merit, 1978 candidates were called for interview. A computer based Test for English language, Logic and Reasoning (TOELR) was also conducted at AFMC for the shortlisted candidates and finally 130 (105 boys and 25 girls) students were admitted into the MBBS course for the year 2016. In addition, 05 sponsored candidates were also admitted from friendly foreign countries.

(IV) **Modernization of AFMS**

(a) **Modernization of medical equipment profile of AFMS hospitals and medical**

units: A major impetus has been given to the modernization of Armed Forces hospitals through the prioritized procurement in Annual Acquisition Plans (AAPs). Specialised medical equipment, worth ₹ 114.18 crore were procured in the financial year 2015-16 and supply orders for more than ₹ 152 crore have been placed in the current financial year i.e. 2016-17 under capital budget head. This has translated into a quantum improvement of the diagnostic, therapeutic and specialized services being provided to the combatants, their dependents and the ex-servicemen fraternity.

(b) **Cardio Thoracic Vascular Surgery (CTVS) Centre Army Hospital R&R Delhi:** A 200 bedded CTVS Centre is functional as a super-speciality wing of the Army Hospital (R&R) Delhi. In the year 2016, a total of 3000 invasive Cardiac procedures and 800 CTVS surgeries have been done.

(c) **Upgradation of School of Nursing to College of Nursing at Command Hospital Air Force Bangaluru (CHAFFB):** The School of Nursing at CHAFFB has been upgraded into the College of Nursing and was inaugurated by AOC-in-C, HQ TC IAF on November 17, 2016. 28 students have been inducted for BSc (Nursing) course which commenced in October 2016. The college is fully functional and operational and it is affiliated to Rajiv Gandhi University of Health Sciences, Bengaluru and is following the BSc (Nursing) course as per syllabus laid down by the Indian Nursing Council.

(d) **Automation of Armed Forces Medical Stores Depot (AFMSD) and Supply Chain Management:**

(i) **Promotion of Government of India's 'Make in India' Campaign:** Concerted efforts have been made to procure medical equipment from Indian manufacturers to promote the

Government's 'Make in India' Campaign. Supply orders worth ₹40.08 crore have been placed on various Indian manufacturing companies. Hospitals and units were advised to promote 'Make in India' products without compromising quality.

(ii) **e-Procurement:** With e-Procurement being made compulsory as per Delegation of Financial Powers to Defence Services (DFPDS) 2016, Office of DGAFMS has been registered on Central Public Procurement (CPP) Portal through Army Headquarter Computer Centre (AHCC), Integrated Head Quarter (IHQ) of MoD. All procurements are being done through CPP Portal and so far, more than 300 bids have been published by O/o. DGAFMS.

(iii) **i-Aushadhi:** i-Aushadhi, a software application for automation of Armed Forces Medical Stores Depots has been successfully developed under the aegis of HQ IDS (Med). Phase-I of training which was scheduled from January 1-31, 2017 with AFMSD Delhi Cantonment and its all dependent medical units, has been completed.

(iv) **Telemedicine**

(a) **Telemedicine Phase I:** Trial of Radio based telemedicine from Post to Regimental Aid Post (RAP) was carried out successfully in Northern and Eastern Sector.

(b) **Telemedicine Phase II:** Telemedicine to connect RAP to Hospital has been planned with Defence Bioengineering & Electromedical Laboratory (DEBEL), DRDO. Presently penetration testing of the software is being carried out at Annual Contingency Grant (ACG) for security clearance and thereafter the trial will be carried out in 25 Division Area.

(c) **ISRO Telemedicine Nodes:** ISRO had provided 18 Telemedicine Nodes to the Armed Forces in 2001. All non-functional nodes have

been operationized by January 31, 2017.

(v) **Composite Smart Card:** HQ IDS (Med) has been mandated to procure Composite Smart Card incorporating service personnel, ECHS and their dependants for health and canteen facilities, which was to replace dependent card of serving and ECHS personnel. Due to certain constraints, integration of ECHS and CSD components will be deferred and Health Smart Card for Armed Forces Personnel will be launched soon.

(vi) **E-vetting of Medical Boards:** Medical Boards determine the employability of a diseased/ injured Air warrior and have a direct impact on the organizational and individual HR issues. As a part of improved governance through Information Technology, a system of E-vetting of medical boards for officers is being implemented in a phased manner. The system envisages electronic processing of medical boards instead of the existing paper-based system in a phased manner.

(vii) **Medical care to Specially-abled children:** A multi-disciplinary Centre is functional under the Department of Paediatrics, Command Hospital (Air Force), Bangalore from October 2015, which is the only one of its kind in the Armed Forces Hospitals. The centre has multi-disciplinary professionals and the overall supervision is under Paediatrician. So far, 156 Specially-abled children have availed this facility since its inception.

(viii) The DGAFMS has provided high quality, comprehensive health care to its dependent clientele, including the defence veterans fraternity and their dependents. High end sophisticated 'state-of-the-art' medical equipments have been procured through the Annual Acquisition Plans (AAPs).

(ix) The massive drive to address the essential, life saving and regular use of

medical equipment across the various Armed Forces hospitals has enhanced the clientele satisfactions. Medical and humanitarian aid has been provided to a number of foreign countries thereby enhancing the global importance and goodwill of India.

(x) **Common Drug List-2016:** Prior to 2016, two separate lists of drugs, CDL (Common Drug List) for serving personnel and EDL (Essential Drug List) for ECHS beneficiaries were maintained. It was perceived that the CDL for serving & EDL for ECHS have not achieved the desired clientele satisfaction. Hence a Board of Officers (BOO) was convened by the competent authority after taking into consideration inputs from AFMS procuring agencies, World Health Organization (WHO), Essential Medical Lists (EML), National Lists of Essential Medicines (NLEM) and CDL/EDL of the other Government Organisations. One Common Drug List (CDL) has now been formulated by the BOO, duly approved by the DGAFMS.

(xi) The noteworthy all round improvement in the provisioning, procurement and supply chain management of medical equipment for the entire Armed Forces has been possible through extensive planning and streamlined execution by following the principles of financial propriety, probity and prudence.

(V) **Foreign Aid provided to friendly countries:** Medical stores amounting ₹5.31 crore have been made available to friendly foreign nations (Tajikistan and Seychelles) and for Haj pilgrims.

(VI) **Modernisation/ upgradation of hospitals:**

(a) **Upgradation of INHS Kalyani to a 604 Bed Command Hospital:** The Government has accorded 'Go Ahead Sanction' for engaging a Consultant to oversee execution of the

upgradation of INHS Kalyani. Accordingly, Chief Engineer (Vizag) has signed a contract with M/s. Archimedes on 14 March 2016 to provide consultancy and preparation of Detailed Project Report (DPR).

(b) **Upgradation of INHS Sanjivani to a 439 Bed Super Speciality Hospital:** The Government has accorded Approval-in-Principle on July 22, 2016 for upgradation of INHS Sanjivani to a 439-bedded Super-Speciality Hospital with additional manpower, equipment and transport, along with 'Go Ahead Sanction' for Consultancy and preparation of DPR.

(c) **Upgradation of Naval Hospital Karanja to a 30 Bed Multi-Speciality Hospital:** The Government has accorded Approval-in-Principle for upgradation of Naval Hospital Karanja to a 30-Bedded Multi-Speciality Hospital on January 25, 2016. This was followed by Government Approval on September 6, 2016 of 41 new posts (9 Officers, 4 MNS and 28 Sailors) as manpower accretion.

(d) **Ejection Procedure Simulator:** An Ejection Procedure Simulator (EPS) is required for imparting training in the correct procedure of ejection to fighter aircrew. To cater to this requirement, Ejection Procedure Simulator (EPS) from M/s. ETC, USA have been installed. EPS will provide practical demonstration of the correct technique and timing of initiating ejection in a controlled environment. The training on the ejection Procedure Simulator (EPS) will have a lasting effect on fighter trainee aircrew and will be useful at critical moments during ejection from a crippled aircraft.

(e) **Construction of Oncology Centre at AH (R&R):** Administrative approval for an Oncology Centre at Army Hospital (R&R) Delhi Cantonment at a cost of ₹ 154 crore has been accorded by the Competent Financial Authority (CFA) in MoD. This Centre will provide high end

super speciality care to the growing number of cancer patients.

(VII) Research Activities:

(i) Continuing Medical Education Programme (CME)/ Conferences:

(a) The 72nd Annual Conference of the Bombay Medical Congress was held on February 6 and 7, 2016 at INHS Asvini Auditorium, Colaba, Mumbai. The Conference was inaugurated by Surgeon (Navy) who was the Chief Guest for the Inaugural function.

(b) The prestigious Western Naval Command Oration was delivered by Lt Gen (Air Force). The General Officer delivered a talk on "Drug Resistant Tuberculosis- Approach, Diagnosis and Treatment". A total of 290 delegates registered & attended the Conference which included 75 civilian delegates.

(c) The Cameron Pinto Oration was delivered by Maj. Gen. on "Surgical Training: Innovations and Strategies".

(ii) Conduct of CME: A National CME was conducted on 'Modern Medical Practices and Advances in Day Care Management in Peripheral Hospitals' as part of the Golden Jubilee Celebrations of INHS Jeevanti from April 15-16, 2016 at Rajhans Auditorium, Goa.

(iii) 32nd Annual Conference of Marine Medicine: The XXXII Annual Conference of Marine Medicine & Allied Sciences was held at INHS Asvini, Mumbai on November 11-12, 2016. The conference is a unique annual event that provides a platform for medical professionals engaged in promotion of maritime health to exchange ideas and discuss advances in medical science to optimize, protect and maintain safety of life in the hazardous and perilous environment at sea.

(VIII) Treatment of Foreign Nationals in AFMS Hospitals: As a measure of goodwill being extended by the Government of India, the Armed Forces personnel from countries like Afghanistan, Bhutan, Nepal, Bangladesh and Maldives are accorded treatment facilities in AFMS hospitals.

(IX) International Cooperation

(i) Defence Cooperation with Maldives: Indian AFMS team comprising of 2 Medical Officers and 4 paramedics joined the Maldives National Defence Forces (MNDF) Medical Services on September 9, 2012 to assist in establishment and operationalisation of 25 bedded Senahiya MNDF Hospital at Male. The tenure of existing Medical team, deputed to Maldives has been renewed upto March 31, 2017.

(ii) Defence Cooperation with Oman: Government has approved deputation of 3 Medical Officers to Oman.

(iii) Deputation to Saudi Arabia: A team comprising of 14 Medical Officers were deputed to Saudi Arabia to provide medical assistance to pilgrims from India and South Asia for Haj pilgrimage.

(iv) Deployment of Medical Team in Tajikistan: Based on the recommendation of NSA and direction from Chief of Army Staff, a 50 bedded permanent hospital has been established at Qurghontepa, Tajikistan, Medical team deployed at the India-Tajikistan Friendship Hospital consists of 9 X Officers (4 X Medical Officer, 1 X Surgeon, 1 X Anaesthetist, 1 X Medical Specialist, 1 X Gynaecologist & 1 X Dental Officer), 4 X Nursing Officers (Member of Nursing Service), 3 X Junior Commissioned Officers and 57 X Other Ranks. The 2nd rotation medical team has been inducted on August 12, 2016.

(v) ASEAN Defence Ministers' Meeting Plus on Military Medicine (Thailand):

(a) An ASEAN Defence Ministers' Meeting Plus Field Training Exercise on Military Medicine was held at Chonburi, Thailand from September 1 to 11, 2016. Medical Team of 60 Para Field Hospital comprising of 3 X Officers and 9 X Other Ranks participated in the said exercise.

(b) The 3rd cycle of the Expert Working Group (EWG) on Military Medicine (2017-20) is to be chaired by Myanmar & India. The objective of this cycle is to continue to establish better cooperation in medical operation amongst Association of South East Asian Nations (ASEAN) Defence Ministers' Meeting Plus (ADMM-Plus) countries for Civil Special Operation/Military Operations other than war (MOOTW) especially in Humanitarian Assistance and Disaster Relief (HADR) missions as the region continues to face non-traditional security challenges.

(X) Training to Foreign Nationals in Medical/ Dental Courses: Training was provided to Foreign Nationals in Medical/ Dental/ Para Medical Courses in 20 MD/ MS courses, 2 Dental Courses (MDS) and 84 Para Medical Courses to the candidates sponsored by friendly neighbour foreign countries by AFMS in its training Institutions/ Hospitals based upon the requests received from these countries.

(XI) Disaster Relief & UN Mission: The Medical Stores costing ₹ 29.86 crore were provided for various disasters and UN Missions and other foreign missions in the year 2016-17.

DIRECTORATE GENERAL DEFENCE ESTATES

9.10 The Directorate General Defence Estates, New Delhi, has advisory and executive functions in matters relating to management

of Defence lands and Civic Administration in 62 Cantonments. The Directorate General presently functions through six Principal Directorates at Jammu, Chandigarh, Kolkata, Lucknow, Pune and Jaipur. The Principal Directorates in turn supervise a number of field offices, such as offices of the Defence Estates Officers, Assistant Defence Estates Officers and Cantonment Boards. These field offices are entrusted with the day-to-day management of defence lands and Cantonment Boards across the length and breadth of the country.

9.11 The Ministry of Defence owns approximately 17.57 lakh acres of land throughout the country which is managed by the three Services and other Organizations like Ordnance Factory Board, DRDO, DGQA, CGDA etc. The Army has the maximum of the land holdings under its control and management i.e. 14.147 lakh acres followed by Air Force 1.40 lakh acres and Navy 0.44 lakh acres. The defence land inside the notified Cantonments is approximately 1.57 lakh acres and the remaining around 16.00 lakh acres lie outside the Cantonments.

9.12 The Directorate General has undertaken computerization of land records, survey and demarcation of all defence lands and digitization of records in order to strengthen control and management over defence land.

9.13 The Defence Estates Department also undertakes hiring of residential accommodation and hiring/ requisitioning of land for the Armed Forces. In Jammu & Kashmir, requisition of immovable property is done under J&K RAIP Act, 1968.

9.14 Directorate General Defence Estates is also responsible on behalf of the Ministry of Defence to control, monitor and supervise the Civic Administration in Cantonments. There are 62 Cantonments in India. These are

located in 19 States, including National Capital Territory of Delhi. The Cantonment Boards are 'bodies corporate', functioning under the overall control of the Central Government and under the provisions of the Cantonments Act, 2006. Half of the members of the Cantonment Boards are elected. The Station Commander is the President of the Cantonment Board. Supervision and control over the working of these bodies is exercised through the General Officers Commanding in Chief and Principal Directors, Defence Estates at the intermediate level and by the Central Government through Directorate General Defence Estates at the apex level.

9.15 The resources of the Cantonment Boards are limited, as the bulk of the property in the Cantonment is owned by the Government, on which no tax can be levied. Boards, however, receive payment of service charges in respect of Central Government properties. Due to lack of industry, trade and business, etc., in cantonments, grant-in-aid to some extent is provided by the Central Government to Cantonment Boards.

9.16 To provide education, Cantonment Boards run Higher Secondary Schools and intermediate/ Junior Colleges. The total number of schools and colleges maintained by Cantonment Boards is 202, besides 36 centres for differently abled children, 46 vocational training centres. Cantonment Boards also maintain 88 Hospitals for providing various services to the general public of Cantonments and nearby areas.

9.17 Cantonment Boards have taken measures like tree plantation, enforcing ban on polythene bags & municipal solid waste management etc. for protection of environment. A public grievances redressal system called "Samadhan" and an employee's information system, called

"Suvidha" have also been implemented in all Cantonments.

9.18 Defence Estate Service maintains two types of important lands register. One register is for lands within Cantonment and the other register is for lands outside Cantonments. The former register is called General Lands Register (GLR) and the latter register is called Military lands Register (MLR). Both the records contain survey number-wise details, the ownership of land, its area, the name of the occupier, any transfer/sale transaction and other summary details. Both the registers are maintained in every DEO Circle. GLR is maintained in every Cantonment Board office also for land placed under the Management of Cantonment Boards. Raksha Bhoomi software was envisaged to store electronically the information in both these registers in respect of all the Defence Estates Officers and Cantonment Boards. The main feature of Raksha Bhoomi is that land data from various offices can be consolidated at one place.

9.19 Ministry of Defence vide its order dated April 18, 2011 decided to resume the conduct of defence land audit keeping in view the importance of land as a national resource. DGDE has been entrusted with the task of conducting land audit. The Land audit reports for the three-years period (2011-12 to 2013-14) and for first year of second cycle (2014-15) have been published and circulated for necessary follow-up action. Defence land audit is a continuing process. Land Audit for the year 2015-16 is nearing completion.

9.20 The management of Defence lands necessarily warrant proper maintenance of land records. The maintenance of land records, its preservation and safety standards were suffering due to high volume, lack of

adequate storage space, lack of fire safety measures and the problems related to ageing of documents, etc. in all 99 field offices i.e. 37 Defence Estates offices and 62 Cantonment Boards in the country. Some activities like Improvement of record rooms (renovations) in all DEO offices, Infrastructure improvement in all DEO Offices' and Establishment of AU&RC have been completed and Indexing, scanning and Microfilming of Records were divided in two phases. Phase-I of the work has been completed in DEOs and Cantonment Boards. Phase-II of the work is in progress. Microfilming of digitized documents has been done by DEO Secunderabad in a pilot project. It has been decided to do microfilming of digitized records of other DEOs in a centralized manner for which a Technical Evaluation Committee (TEC) has been constituted at DGDE level.

OFFICE OF THE CHIEF ADMINISTRATIVE OFFICER

9.21 The Office of the Chief Administrative Officer (CAO) provides civilian manpower and infrastructural support to the Services Headquarters and the Headquarter Offices of Inter-Service Organisations (ISOs) under the Ministry of Defence. The Chief Administrative Officer (CAO) also discharges the functions of Joint Secretary (Estt) and Director (Security).

9.22 **The functions of the CAO's Office are carried out by the following ten Divisions under Dir (E & A) and Dir (HR):**

(a) **Manpower Planning and Recruitment Division:** This Division is responsible for recruitment to various categories of the AFHQ Cadre/ Ex-Cadre posts, compassionate appointment, framing/amendment of recruitment rules for various grades, re-verification of character and antecedents of employees working in sensitive organisations,

Cadre Review/Restructuring of AFHQ Civilian cadres and work related to Pay Commissions etc.

(b) **Personnel & Legal Division:** The Personnel & Legal Division is responsible for the Cadre Management including posting/promotion/ deputation of the civilian personnel in about 200 grades, posted in the three Service Headquarters and 27 Inter-Service Organisations. This Division also handles the Court cases of the CAO's Office.

(c) **Departmental Discipline, Coordination and Welfare Division:** This Division deals with disciplinary cases of AFHQ Civilian employees. Besides, coordination within CAO's Office and Security Office, matters relating to implementation of Official Language policy, welfare activities like Office Council (JCM), Women Cell, Sports & Cultural activities, Departmental Canteens, appointment of AMAs, Defence Civilian Medical Aid Fund (DCMAF) etc., are also dealt with in this Division. This Division also deals with Administration of MoD (Library) including grants from NDF for purchase of reading materials.

(d) **Defence Headquarters Training Institute (DHTI):** Defence Headquarters Training Institute is functioning under the aegis of the Office of JS (E/CAO). The mandate of DHTI is to provide training to civilian personnel posted in the Service Headquarters and in the Inter Service Organisations. DHTI also caters to training of MoD Section Officers.

(e) Specialized courses on Procurement, RTI, Cabinet Notes, Parliament procedure are also being conducted for the Officers from the three Service Headquarters and ISOs. During the year 2016-17, Additional Secretary has approved 137 courses to be conducted at the premises of DHTI. 22 courses on Civilian Personnel Management are proposed to be

conducted at various field establishments this year.

(f) **Administration Division:** This Division deals with all matters pertaining to pay and allowances, leave, service book etc. (except medical, pension and budget cases) of civilian employees working in IHQ of MoD (Army)/ ISOs except those under the Administrative control of CAO/ A-2.

(g) **Medical Pension & Budget Division:** This Division deals with all matters pertaining to medical, pension and budget of all civilian employees employed in IHQ of MoD (Army) and ISOs including pay and allowances and administrative work of the Civilian Gazetted/ Non-Gazetted employees under the administrative control of CAO/A-2. This Division also looks after the matters relating to implementation of e-governance, electronic data processing and maintenance of LAN & website of CAO's Office.

(h) **Finance and Material Division:** This Division provides material support to the ISOs which includes procuring and provisioning of office equipments, stores, furniture, stationery and IT equipments.

(i) **Works Division:** This Division looks after "works" matters pertaining to allotment and maintenance of office accommodation, including hiring of accommodation due to deficiency in respect of all constituents of Ministry of Defence. An 11 KVA Electricity sub-station housed in 'E' Block is likely to be operational to augment the power supply in DHQ Zone.

(j) **Quartering Division:** This Division deals with all matters pertaining to management and allotment of MoD Pool Married Accommodation, reimbursement of bill for

Hired Accommodation and grant of NAC-HRA to the service officers posted in AFHQ/ ISOs.

(k) **Special Project Division:** This Division deals with all matters pertaining to Special Project assigned to O/o. JS(E/CAO) which includes the conceptualization, execution and handing over to the user. The Special Projects include, Surveillance & Access Control Management System (SACMS) at South Block and Sena Bhawan, construction of National War Memorial and National War Museum in Delhi and Nau Sena Bhawan. Dy. CAO (Spl. Project) also functions as Estate Officer.

9.23 Security Office

(a) The Security Office is responsible for physical security, surveillance & access control, prevention of breach of security & fire within the Defence Headquarters Security Zone comprising of 22 buildings and issue of SLIC, DAC, TP, CHT & vehicle stickers etc. It has the following primary responsibilities, namely:

(i) DHQ Security troops from Defence Security Corps for guarding the buildings and regulating entry into DHQ Security Zone.

(ii) The policy and administrative aspects including issue of access documents by the Pass Section, security clearance of foreign visitors, fire-fighting arrangements and issue of various security related instructions/ advisories, as and when required.

(iii) A reception network which regulates the entry and exit of visitors - both Indian and Foreigners, visiting various offices located in DHQ Security Zone, by way of issuing them visitor passes and providing civilian escorts to the visitors, as and when necessary. As on date, 21 Reception Offices are functional in 19

buildings/blocks (out of 22) under DHQ Security Zone. All the Reception Offices function under the overall supervision of Joint Director (Reception).

(b) The Security Office is in the process of implementing Surveillance and Access Control Management System (SACMS) in South Block and Sena Bhawan to regulate the entry/ exit of personnel and vehicles by biometric and Radio Frequency Identification (RFID) system, respectively.

DIRECTORATE OF PUBLIC RELATIONS

9.24 The Directorate of Public Relations (DPR) is the nodal agency for the dissemination of information to the media and public, about important events, programmes, achievements and major policy decisions of the Ministry, Armed Forces, Inter-Services Organisations and Public Sector Undertakings under the Ministry of Defence. The Directorate with its headquarters in New Delhi and 25 regional and branch offices spread across the country, is responsible for providing media support to ensure wide publicity in the print and the electronic media. It also facilitates media interaction with the leadership and senior officials of the Ministry of Defence and Armed Forces by conducting regular interviews, press conferences and press tours.

9.25 The Directorate brings out a fortnightly journal, Sainik Samachar, for the Armed Forces in 13 languages. The Broadcasting Section of the Directorate produces a 40-minute programme 'Sainikon Ke Liye' that is broadcast daily on All India Radio for Armed Forces personnel. The Photo Section of the Directorate provides photo coverage to important events related to Defence. The Photo Archives of the Photo Section of the DPR is now undergoing the digitisation process.

9.26 As in previous years, the Directorate conducted the Defence Correspondents' Course for media persons from August 18, 2016 to September 17, 2016 to enhance their knowledge about defence matters. Thirty-six journalists including eleven women drawn from all over the country attended the month-long course which was conducted in different establishments of Army, Navy and the Air Force.

9.27 During the year, DPR provided coverage on different incidents of ceasefire violations in the Line of Control in J&K, which saw a significant rise because of massive infiltration of militants from across the border. Following some fierce terrorist attacks in places like Uri, Pathankot and Nagrota from across the border, Indian Army launched surgical strikes on various launch pads of terrorists groups along the Line of Control on September 29, 2016 resulting in heavy terrorist casualties. Chief of the Army Staff General Dalbir Singh formally unveiled establishment of the Army Design Bureau (ADB) on August 31, 2016 during an Army Seminar on 'Make Projects', where the General also launched the 'Make in India' Portal on the Army website.

9.28 DPR also covered various joint military exercises by the three Services with Armed Forces of other friendly countries both in India and abroad. Among other important themes, those which were covered include the Government's implementation of the much-awaited One Rank One Pension (OROP) scheme for the Armed Forces pensioners. Necessary publicity was accorded to the promulgation of the new Defence Procurement Procedure (DPP) 2016 for capital procurements which came into effect from April 1, 2016. DPP-2016 has a focus on achieving the 'Make in India' vision by according priority to 'Buy Indian – IDDM (Indian Designed, Developed and Manufactured) and 'Buy (Indian)' categories. It also focuses on

enhancement and rationalization of indigenous content. Befitting coverage was also provided for the dedication of Defence Communication Network (DCN) to the nation on June 30, 2016 by the Defence Minister Shri Manohar Parrikar.

9.29 DPR provided publicity to the commissioning of INS Chennai, a P 15A Guided Missile Destroyer by the Raksha Mantri at the Naval Dockyard, Mumbai on November 21, 2016. It gave publicity to the commissioning of INS Kadmat – second ship of Project 28 (P-28) class Anti-Submarine Warfare Corvettes and highly manoeuvrable Fast Attack Craft INS Tarmugli. The de-induction of Sea Harriers of Indian Naval Air Squadron (INAS 300) and induction of MiG-29K fighter aircraft into INS Vikramaditya were also highlighted. In response to the request for assistance made by the Government of Sri Lanka, the Prime Minister announced that India would provide aid on emergency basis to help those affected by the floods and landslides in various parts of Sri Lanka caused by the cyclone 'Roanu'. Two Indian Navy warships, INS Sutlej and INS Sunayna, with nearly 40 tonnes of relief material were deployed on May 20, 2016 to provide assistance to the affected people. A Chetak helicopter was also deployed for aerial assistance.

9.30 Signing an Inter-Governmental Agreement (IGA) with France for acquisition of 36 Rafale fighters on September 23, 2016 and induction of LCA Tejas into the No. 45 Squadron of the Indian Air Force on July 1, 2016 were the main landmark events which were given extensive publicity. As part of operational preparedness of the Indian Air Force, the successful 'touch and go' operations on a portion of the Lucknow-Agra Expressway on November 21, 2016 by Mirage-2000s and Su-30s aircraft was given due publicity. The historic commissioning of first three women

fighter pilots of the IAF into the combat stream of the Force on June 18, 2016 put India into the select group of nations having women fighter pilots. Their successful commissioning followed by felicitation of Marshal of the Indian Air Force Arjan Singh on August 12, 2016 was reported extensively by the media.

9.31 Indian Air Force planes successfully evacuated stranded Indian nationals from Juba, the capital of war-torn South Sudan on July 14, 2016, where two C-17 Globemaster aircraft were deployed in the 'Operation Sankat Mochan'. This HADR operation was publicised by DPR in different media platforms.

9.32 The Directorate arranges all media facilities related to the Republic Day Celebrations and brings out a commentary book for the 'parade on Rajpath'. Other important calendar events such as Independence Day celebrations at Red Fort, Defence Minister's annual customary message to the Armed Forces on the eve of Independence Day, Combined Commanders' Conference, Prime Minister's NCC Rally and Defence Investiture Ceremonies at Rashtrapati Bhawan are also accorded due publicity.

SERVICES SPORTS CONTROL BOARD

9.33 Services Sports Control Board (SSCB) conducts and co-ordinates various sports activities in the three Defence Services. Inter-Service championships comprising of four teams (Army Red, Army Green, India Navy and Air Force) are conducted under the aegis of SSCB in 19 Sports disciplines and trials are conducted in 14 disciplines to select the Services team for participation in the National Championships/Games.

9.34 During the year 2016, SSCB fielded Senior Men's teams who represented India at

various International Championships including International Council of Military Sports (CISM), South Asian Championships, Commonwealth wrestling championship and Wushu World Cup where Services won 11 Gold, 15 Silver and 4 Bronze medals, and 3 Team Gold medals.

9.35 As many as 15 Services sportspersons participated at the Rio Olympics 2016.

ARMED FORCES FILM & PHOTO DIVISION

9.36 Armed Forces Film & Photo Division (AFFPD) is an Inter Services Organization of the Ministry of Defence entrusted with the responsibility of producing films for training, documentary and promotional purposes for the three services; as also Photo and Video Coverage of ceremonial functions and other important events of the MoD for record purposes. AFFPD also stocks and preserves a rich collection of rare films and photographs of World War-II vintage and current and past Defence Training Films, at its Central Defence Film Library.

9.37 In the current year, AFFPD has completed and released ten training films for the Army in association with ARTRAC (Army Training Command). 11 training films are under various stages of production, 2 at shooting stage, 3 films at rough cut stage of production and 6 are in final stages of completion. In addition to these, a promotional film on Adventure activities of the army is at the shooting stage. Also 5 short films for the Army for the purpose of publicity on web based platforms have been completed. The films produced by AFFPD are of the 30 to 60 minutes duration and are in Hindi and English.

9.38 Video and still photographic coverage of Republic Day Parade, Beating Retreat, Independence Day Flag Hoisting Ceremony, various other ceremonial functions like

investiture ceremony, Army Day Parade, etc., coverage of Raksha Mantri Excellence Award, Commanders Conference, Hindi Pakhwara organized by various branches of Army HQ, coverages for PCDA, Inter Service Organizations like DGQA, OF Cell, DGAQA, Dte. of Standardization, Planning & Coordination, CAO's office, DGQA Day, and AFHQ Day were done by the Division.

9.39 Photography has now shifted from negative to Digital format and presently all the photographs are being exposed digitally and issued in CD/ DVD format and also as hard copies (photo prints) as per requirement. 9873 photographs have been exposed and 124 Photo CDs, 26 Photo DVDs and 1716 photographic prints have been prepared and issued during this period.

9.40 The Central Defence Film Library (CDFL) of this Division is responsible for distribution of training films to various units/ formations/ training establishments/commands, to meet their specific training requirements. The Library holds 587 titles (Positive) 543 (Master Negative) in 35 mm sizes, 1165 titles in 16 mm sizes, 225 titles in VHS format, 272 titles in U-matic format, 166 Betacam format, 34 titles in VCD format and 89 titles in DVD & HD format, 253 AFVC, 26901 Photographs of World War-II and 26901 Negative of World War-II. During the year, 1993 DVDs have been dispatched/ issued on loan to various units/ formations of Army/ Navy/ Air Force.

9.41 AFFPD has a rich collection of rare films and photographs of the Second World War and this material inherited from the British is of great historical value and is maintained and preserved at the Central Defence Film Library of this Division. These photographs and films depict the Indian Forces in action in various theatres of Second World War, its parades, festivals, personalities and training activities

etc. Some important films like Battle of Britain, Battle of Russia, Battle of China, Desert Victory, Japanese Surrender, Nazis Strikes, Burma Campaign, Churchill the Man, London Victory Parade are some of the films preserved along with many other historical films. Copies of many of these World War-II films have been preserved at National Film Archive of India (NFAI) Pune.

9.42 The Mobile Cinema Unit (MCU) of this Division also procured/ distributed Documentary films to the troops. During the year, MCU has issued films on 82 topics to various Defence Establishments on loan basis.

NATIONAL DEFENCE COLLEGE

9.43 The National Defence College is a premier training institution of the Ministry of Defence which has established a name for itself as a centre of excellence on matters pertaining to National Security and Strategic Studies. Selected Armed forces officers of the rank of Brigadier/ equivalent from Indian and Foreign Armed Forces and Civil Services officers of equivalent status of director and above are nominated for training at the college. The officers undergo an eleven months programme with focus on national security, covering all dimensions of domestic, regional and international issues to equip future policy makers with background necessary to get a broad understanding of the multifarious economic, political, military scientific and organizational aspects that are essential for planning of National strategy. The course curriculum comprises Study Capsules, Lectures/ Panel Discussions, Strategic Game Exercise, Field Tours, Research Activities/ Writing of Theses and Seminars. Towards this end, six study capsules are conducted for the course.

9.44 The 56th NDC Course consisted of 100 officers comprising Army (40), Navy (6), Air

Force (12), Civil Services (16) and Friendly Foreign Countries (26). The Course concluded on November 25, 2016.

SCHOOL OF FOREIGN LANGUAGES

9.45 The School of Foreign Languages (SFL) is an Inter-Services organization under the aegis of the Ministry of Defence. It is a unique institution of the country as nowhere else so many foreign languages are taught under the same roof. It has been the pioneer in foreign language teaching in India, since 1948. At present the School is engaged in imparting training in 18 Foreign languages to personnel of the three Services of the Indian Armed Forces. It also caters to the needs of the other ministries and departments of the Government of India, such as the Ministry of External Affairs, the Cabinet Secretariat, Central Police Organisations viz. BSF, CRPF, ITBP, etc. Besides, civilian students are also admitted for Certificate of Proficiency, Advanced Diploma and Interpretership Courses as per the laid down rules.

9.46 The Foreign Languages taught on regular basis at the SFL are:- Arabic, Bahasa Indonesia, Burmese, Chinese, French, German, Persian, Russian, Spanish, Tibetan, Sinhala and the short term courses in Japanese, Thai, etc.

9.47 The courses offered by the SFL are Certificate of Proficiency Course, Advanced Diploma Course, Interpreter Course and Short-term Course.

9.48 The Interpreter Course is a fulltime Course. The students are sponsored by the Armed Forces, Ministry of Defence, the Cabinet Secretariat, Para-Military and other Government Departments. This course trains the students to become experts in the highly skilled work of interpretation and translation. Furthermore, they are trained in writing and speaking the

target language with utmost fluency. It is a highly specialized course, which has no parallel anywhere else in India. Languages of strategic importance from politico-military point of view such as Sinhala, Bhasa Indonesia, Burmese, Pushto Pak Urdu, Thai and Tibetan are taught at SFL.

9.49 Short term courses are conducted as and when necessary, especially for Military Attache Designates and officers being sent on UN Missions or as per specific need of user organization.

9.50 The SFL is the controlling organization for other Defence institutions where foreign languages are taught, viz. National Defence Academy, Pune and Army Education Corps Training Centre and College, Pachmarhi. It conducts examinations and issues diploma to the successful candidates. For the IFS probationers, it is obligatory to qualify the Advanced Diploma (IFS) examination conducted by the Institute. The SFL conducts examination in Regimental Languages, viz. Nepali at various Service units all over the country. Special Proficiency Examinations in various foreign languages are conducted for the three services exclusively to assess the assimilation and retention of the languages learnt.

9.51 During 2016-17, SFL has trained the DA/ MA (Designate) to various countries in respective foreign languages viz. Arabic, Chinese and Russian.

HISTORY DIVISION

9.52 The History Division, earlier known as Historical Section, was established on 26 October, 1953 to compile the histories of the military operations conducted by the Indian Armed Forces since independence. Till now, it has compiled and published 18 volumes including the History of Operations in Jammu &

Kashmir 1947-48, Operation Polo, Operation Vijay (Goa), Military Costumes of India, Stories of Heroism, The India-Pakistan War of 1965: A History, The India-Pakistan war of 1971: A History and Saga of Valour (Param Vir Chakra & Ashoka Chakra Winners). The Division has also reprinted twelve volumes of Official History of the Indian Armed Forces in the Second World War 1939-45. The histories of operations conducted by the Indian Armed Forces on UN Peace Keeping Missions have also been published. These include the History of Indian Armed Forces in UN Operations in Congo, History of the custodian force (India) in Korea 1953-54, Operation Shanti (Indian Troops in Egypt) and Terrific Responsibility (The Battle for Peace in Indo-China). Some of these books have been published both in Hindi and English.

9.53 Presently, the Division is working on two projects viz. 'The role of Indian Armed Forces in World War-I' and 'The History of Kargil War.' The Division is also engaged in 'Digitization of Records' pertaining to World War-II.

9.54 The History Division functions as the research, record and reference office of the Ministry of Defence and the Indian Armed Forces. It receives records pertaining to military matters from the Ministry of Defence and three Services HQs on a regular basis for preservations and use. The Division also runs a Fellowship scheme under which two Fellowships are granted every three years to encourage research in military history. So far, twenty two Research Fellows have benefitted under the scheme.

9.55 The Heraldic Cell of the Division assists the three Services Headquarters including Coast Guard Headquarters and the Ministry of Defence in all ceremonial matters such as

naming of new establishments and acquisitions, designing of crests and badges and coining of mottoes. The Cell also vets the histories of the IAF Units which are presented with colours and standards by the President.

9.56 The Departmental Library houses more than five thousand titles, including books, periodicals and foreign publications of military importance. About 200 books have been added to the library during past one year. Efforts are also being made to digitize the catalogue of the Library.

COLLEGE OF DEFENCE MANAGEMENT (CDM)

9.57 CDM is a Tri-Service training establishment which imparts the skills of contemporary management thought, concepts and practices that lead to effective decision making, enlightened leadership and efficient resource management in a knowledge centric environment to the senior leadership of the three Services, Para Military Forces, officers of the Ministry of Defence and international participants at the conceptual, directional and functional levels. The Higher Defence Management Course (HDMC) is the flagship course, which is conducted over a period of 44 weeks. Besides the HDMC, CDM conducts a number of Management Development Programmes (MDPs), Defence Management Course for SAARC Nations and Senior Defence Management Course (SDMC) for participants from Tri-Services as also participants from friendly foreign countries. The College imparts training through a networked environment supported by state-of-the-art information and communication technology. CDM trains more than 500 officers annually. Besides, CDM

conducts external capsules at various training establishments viz. War Colleges, MILIT, NDA, DSSC and Lal Bahadur Shastri National Academy of Administration (LBSNAA) at Mussoorie. CDM is a repository of vast knowledge and undertakes management research and provides consultancy service to the Armed Forces.

DEFENCE SERVICES STAFF COLLEGE

9.58 Defence Services Staff college (DSSC), nestled in the sylvan environs of Nilgris in Tamil Nadu, is a premier Tri-Services joint training institution in the world, training selected officers of the Indian Armed Forces, Civil Services/ Paramilitary Forces and friendly foreign countries. The Staff College affords an invigorating environment serving as a Cradle for Middle Level Military leadership, creating excellent staff officers and stellar leaders at the cutting edge of the armed forces with accentuated levels of professionalism and steadfastly upholding the virtues of 'Duty, Honour and Valour'.

9.59 DSSC was awarded the President's colours in September, 2016 by the President of India, in recognition of the commendable service rendered as a flagship joint training institution, providing excellent world class staff and command training.

9.60 The Staff College is presently undergoing a renaissance of unparalleled magnitude, with infrastructural development aligned to the multi-faceted resplendence of this magnificent institute. The College is progressively bracing itself for training 500 student officers. The strength of the current Staff Course has been enhanced to 466 including three officers from the Civil Services/ Paramilitary Forces, two from

Coast Guard and 40 international officers from 31 different nations.

MINISTRY OF DEFENCE LIBRARY

9.61 The Ministry of Defence library provides literature on subjects relevant to planning and

policy formulation in Ministry of Defence, three Services Headquarters, Inter-Service Organisations and other allied Defence Establishments located in Delhi. It specializes in Defence and related subjects, besides catering to the needs of general readers. During the year, the library added 1019 books, subscribed to 154 Journals/ Periodicals and 32 Newspapers.





RECRUITMENT AND TRAINING



Recruitment and Training

10.1 The Armed Forces epitomize the ideals of service, sacrifice, patriotism and composite culture of the country. Recruitment to the Armed Forces is voluntary and open to all citizens of India irrespective of caste, class, religion and community provided the laid down physical, medical and educational criteria are met.

10.2 Recruitment of Commissioned Officers in the Armed Forces through UPSC:

Commissioned Officers in the Armed Forces are recruited mainly through UPSC which conducts the following two All India Competitive Examinations:

- (a) **National Defence Academy (NDA) and Naval Academy (NA):** The UPSC holds entrance examination twice a year for entry into the NDA and NA. Candidates on completion of 10+2 examination or while in the 12th standard are eligible to compete. Having cleared UPSC written examination, eligible candidates undergo Service Selection Board (SSB) interview, which lasts for five days. On being medically fit and coming in NDA merit list, successful candidates join the NDA or NA as per their option of service exercised at the time of applying. On completion of the course, they are sent to the respective Service Academies for their pre-commissioning training.
- (b) **Combined Defence Service Examination (CDSE):** CDSE is conducted by the

UPSC twice a year. University graduates or those in final year of graduation are eligible to appear in the examination. Candidates qualifying in written examination have to undergo SSB interview and medical tests. Candidates whose names appear in the merit list undergo basic military training of 18 months at Indian Military Academy/Air Force Academy/ Naval Academy for Permanent Commission and 11 months at Officers Training Academy (OTA) to become Short Service Commissioned Officers (SSCOs). SSCOs can serve for a duration of 10 years which is extendable upto 14 years. However, they can opt for permanent commission after completion of 10 years or seek release after completion of five years of service, which is considered on a case-to-case basis by Integrated Headquarters of Ministry of Defence (Army).

INDIAN ARMY

10.3 Apart from the UPSC entries, Commissioned officers are also recruited in the Army through the following entries:

- (a) **10+2 Technical Entry Scheme (TES):** Candidates who have qualified 10+2 CBSE/ ICSE/ State Board Examination with minimum aggregate of 70% marks in Physics, Chemistry and Mathematics are eligible to apply for commission under the 10+2 (TES). On being

successful in the SSB and being declared fit by the medical board, they undergo one year basic military training at the Officers Training Academy, Gaya and thereafter undergo three years engineering degree course in respective streams before getting Permanent Commission. On being commissioned, they are further put through one year of post-commissioning training for the Arm/Service into which they are commissioned.

(b) **University Entry Scheme (UES):** Pre-Final year students in the notified engineering disciplines are eligible to apply for Permanent Commission in the Technical Arms of the Army as Commissioned Officers under the UES. Eligible candidates are selected through a campus interview by the Screening Teams deputed by the Army Headquarters. These candidates are required to appear before SSB and Medical Board. Successful candidates undergo one year pre-commission training at the Indian Military Academy (IMA), Dehradun. Cadets through this entry are also entitled to one year ante-date seniority on commissioning.

(c) **Technical Graduates Course (TGC):** Engineering graduates from notified disciplines of engineering, post graduates with minimum second division aggregate marks in notified disciplines for Army Education Corps and M.Sc. in Agriculture/ Dairy for Military Farm are eligible to apply for Permanent Commission through this entry. After the SSB and the Medical Board, the selected candidates are required to undergo one year pre-commissioned training at the IMA, Dehradun. Engineering Graduates through this entry are also entitled to one year ante-date seniority on commissioning.

(d) **Short Service Commission (Technical) Entry:** The Short Service Commission (Technical) Entry Scheme provides avenue for recruitment to eligible technical graduates/ post

graduates into Technical Arms. After SSB and Medical Board, the selected candidates are required to undergo approximately 49 weeks pre-commission training at OTA, Chennai. On completion of training, they are inducted as Short Service Commissioned Officers. Cadets through this entry are also entitled to one year's ante-date seniority on commissioning.

(e) **NCC (Special Entry Scheme):** University graduates possessing NCC 'C' Certificate with minimum 'B' grade and 50% aggregate marks in graduation examination are eligible to apply for Short Service Commission through this entry. Those studying in third year are allowed to apply provided they have secured minimum 50% aggregate marks in the first two years. Such candidates will need to secure overall aggregate of minimum 50% marks if selected in interview failing which his candidature will be cancelled. Candidates must possess graduation degree at the time of joining OTA or those candidates studying in third year should be able to produce the degree within 12 weeks from date of commencement of training at OTA. Such cadets have to undergo SSB interview followed by a medical board. Candidates meeting the qualitative requirements have to apply through NCC Group Headquarters at the State level. After Screening by respective Group Headquarters, Directorate General of NCC forwards the applications of eligible cadets to the Recruiting Directorate of Integrated Headquarters of Ministry of Defence (Army).

(f) **Judge Advocate General Entry:** Law graduate with minimum 55% aggregate marks in LLB and age between 21 to 27 years can apply for Judge Advocate General Branch. Eligible candidates are called for direct SSB interview and medical test, thereafter. It is a Short Service Commission Entry wherein suitable candidates can opt for Permanent Commission.

(g) **Short Service Commission (Women) (SSCW):** Eligible women candidates are recruited in the Army as Short Service Commission Officers. Commission is granted in Corps of Electronics and Mechanical Engineers, Corps of Engineers, Corps of Signals, Army Educational Corps, Military Intelligence Corps, Judge Advocate General's Branch, Army Supply Corps, Army Ordnance Corps and Army Air Defence. Women are offered Short Service Commission in three streams viz. Non-Technical Graduate, Technical and Post Graduate/ Specialist for a period of ten years, extendable by additional four years purely on voluntary basis. Recently, Government of India had granted option for permanent commission for officers in Army Education Corps and Judge Advocate General Branch after completion of 10 years of service. The duration of training is 49 weeks at Officers Training Academy, Chennai. For Short Service Commission Women (Technical) Entry, passed or final year/ semester students of B.E/ B.Tech in notified streams are eligible to apply. Eligible candidates appear for direct SSB interview and Medical Test, thereafter. The applicants for Non-Technical Graduate, however, is required to apply through UPSC and after written examination, come up for SSB interview as is being done for Short Service Commissioned male officers. A total of 20% allotted seats from Non-Technical stream have been reserved for NCC 'C' certificate holder women candidates with minimum 'B' grade and 50% aggregate marks in graduation examination. The applications will be routed through NCC Directorate, Integrated Headquarters of Ministry of Defence (Army), as applicable for male officers. For Judge Advocate General Branch, applications are invited from Law Graduates with minimum 55%, for direct SSB interviews. Widows of Defence Personnel

who meet the laid down eligibility criteria are granted four years age relaxation and 5% seats of each course (2.5% each in Technical and Non-Technical) are reserved for them. Short Service Commission Women (Technical), NCC entry and Judge Advocate General Branch are exempted from written examinations and need to apply directly to Addl. Directorate General of Recruiting, Integrated Headquarters of Ministry of Defence (Army). The notification is published along with SSCW (Tech) twice a year.

(h) **Service Entries:** Recruitment of Junior Commissioned Officers and Other Ranks (JCOs & ORs) into officers cadre is done through Service Selection Board in the following:

(i) **Army Cadet College (ACC) Entry:** The eligible Other Ranks (OR) in age group of 20-27 years and minimum two years of service, having 10+2 pass qualifications can apply for Regular Commission. After qualifying in written examination conducted by the Military Training Directorate, the aspirants are screened by SSB and the Medical Board. Successful candidates are trained at Army Cadet College Wing, Dehradun, for three years at the end of which they get a graduation degree. This is followed by one year pre-commission training at IMA, Dehradun.

(ii) **Special Commissioned Officers (SCO) Scheme:** Under this entry, JCOs/NCOs/ OR in the age group of 28-35 years, with a Senior School Certificate Pass (Class 10+2 pattern) qualification, are eligible for Permanent Commission after screening by SSB and Medical Board. They have to undergo pre-commission training of one year at

OTA, Gaya. The rules for substantive promotion and acting promotion are the same as for regular officers. These officers are employed in units as sub-unit commander/ Quarter Master and on various Extra Regimental Employment appointments up to the rank of Major. They retire at the age of 57 years after serving for period of about 20-25 years. The scheme not only improves the career prospects of the existing JCOs and OR but also helps in making up the deficiency of the support cadre officers in the Army to some extent.

- (iii) **Permanent Commission (Special List) (PC SL):** Under this entry, JCOs/ NCOs/ OR up to 42 years of age and minimum 10 years of service, with a Senior Schools Certificate Pass (Class 10+2 pattern) qualification are eligible for commission after screening by SSB and Medical Board. They are granted PC (SL) after successful completion of four weeks orientation training at the IMA.

10.4 Automation of processing application for Officers entries: On June 14, 2015 the Recruiting Directorate's new interactive website www.joinindianarmy.nic.in has been launched. The website facilitates online application and processing of information and data in real time between the candidates, Recruiting Directorate and Selection Centres. All entries except for UPSC entries and Service entries are now online, wherein candidates apply online to Recruiting Directorate. Candidates are automatically informed through the website the status of their application and candidates have the option to select their SSB dates.

10.5 Intake: Intake of candidates for pre-commission training as officers during the year

2016 is given in Table below:

S. No.	Academy	Entry	Induction
1.	NDA	Army	388
		Navy	92
		Air Force	62
		Total	542
2.	IMA	IMA (DE)	237
		ACC	114
		SCO	63
		PC(SL)	22
		AEC	14
		Total	450
3.	OTA	SSC(NT)	123
		SSCW (NT)	26
		SSCW (T)	17
		NCC	73
		NCC(W)	09
		JAG	19
		JAG(W)	11
		Total	278
4.	Tech Entries	UES	43
		SSC (T)	272
		10+2 TES	179
		TGC	94
		Total	588
		Grand Total	1858

10.6 Raising of Selection Centre North (SCN): SCN has been raised at Kapurthala which is an interim location w.e.f. July 1, 2015. SCN would shift to Roopnagar by the year 2019 once the permanent key location plan is established there. The SCN has been raised with two new SSBs and this will enable approximately 3800-4000 additional candidates who would be put through Stage-2 testing. This will contribute to enhancing the present selection rate and satisfaction level in the environment.

10.7 Recruitment of Junior Commissioned Officers & Other Ranks (JCOs & ORs):

Recruitment in the Army is done through Zonal Recruiting Offices, two Gorkha Recruiting Depots, one Independent Recruiting Office and 59 Army Recruiting Offices in addition to 48 Regimental Centers which carry out recruitment through rallies in their respective areas of jurisdiction. Recruitment of JCOs & OR is carried out through Online Application System for Soldier General Duty, Soldier Tradesman, Soldier Technical, Soldier Clerk/Store Keeper Trade and Soldier Nursing Assistant categories. However, for categories like Religious Teacher JCO (RT JCO), Havildar Education, Havildar Auto Cartographer and JCO Catering, application system is being followed. The current recruitment for JCOs & OR comprises screening of aspiring candidates at rally site in the 1.6 km run followed by document checking, physical fitness tests, physical measurements and medical examination. This is followed by a written examination for the candidates who are found eligible in all respects. Finally, selected candidates are despatched to respective Training Centres for training. Efforts are made to ensure that each district of the country is covered at least once by recruitment rallies in a recruitment year.

10.8 Revised Recruitment Rallies System:

Indian Army is one of the biggest employers in the country which recruits almost 60,000 youths into the Army every year. Previously, recruitment was carried out through an 'Open Rally System' wherein candidates could walk in for recruitment without applying for a rally. The 'Revised Recruitment System' has been introduced wherein a candidate is required to register online through Recruiting Directorate website www.joinindianarmy.nic.in with the overall aim of reducing masses which turn up for recruitment by a regulated call up system. The connected administrative and discipline

issues that arise due to large crowd have been negated. Till date, 147 rallies have been conducted with the 'Revised Recruitment System' and approximately 42.5 lakh aspirants have applied online through the Recruiting Directorate website: www.joinindianarmy.nic.in. The revised Recruitment Rally System is being implemented in the following phases:

(a) **Phase-I: Replacement of open rally system with call up system:** Implementation of On-Line Registration for Recruitment of Junior Commissioned Officers/ Other Ranks into the Indian Army was carried out w.e.f. July 18, 2015 and has been a major success, which has revolutionised the complete recruitment process. This initiative has streamlined the recruitment system and is also giving a boost to Government's 'Digital India' programme where candidates from remote areas/ rural areas are using internet to apply for this popular career option.

(b) **Phase-II: Pilot project for online examination prior to physical and medical tests:** Pilot project for online examination has been approved recently by the Ministry of Defence and Recruiting Directorate is in the process of implementation of the project. This will be a major achievement once implemented. Initially the pilot project is being implemented in three zones as under:

- (i) HQ Recruiting Zone, Ambala
- (ii) HQ Recruiting Zone, Chennai
- (iii) HQ Recruiting Zone, Jaipur

10.9 **Recruitment Rallies:** In the recruiting year 2016-17, 100 rallies were planned. A total of 71804 candidates have been recruited.

INDIAN NAVY (IN)

10.10 Indian Navy carries out recruitment of personnel to effectively man ships, submarines,

aircrafts and shore establishments to the optimum levels. Recruitment in the Navy is carried out on all India basis. The number of uniformed personnel recruited/ inducted depends on the number of eligible applicants (men and women) who are able to qualify in the written test, Services Selection Board (SSB) interview, medical examination and their relative position in the merit list. No distinction is made on the basis of gender, religion, caste, creed, either during recruitment or at any point of time thereafter.

10.11 Method of Recruitment: The recruitment system of the IN is a streamlined, transparent, expeditious and candidate friendly procedure. There are two modes of induction in the IN, viz. UPSC Entry and Non-UPSC Entry:

(a) **UPSC Entry:** The UPSC holds an examination, twice a year, for entry into the National Defence Academy (NDA) and Indian Naval Academy (INA) as Permanent Commission (PC) entries. Candidates are eligible to compete on completion of the 10+2 (PCM) Examination or while in the 12th standard. UPSC short-lists candidates after written examinations. Thereafter, candidates are sent to the Service Selection Boards located at Bengaluru, Bhopal, Coimbatore and Visakhapatnam. Results of qualified candidates are forwarded to UPSC for making the final merit list. Medically fit candidates who are in the merit list, are selected for training at NDA/INA. On completion of the NDA/INA training, the Naval Cadets are sent to training ships at Kochi for Naval sea training. For the Graduate Special Entry Scheme (GSES), the UPSC holds the Combined Defence Services Examination (CDSE), twice a year. Graduates with B.Tech. degree or candidates in their final year of B.Tech. are eligible to appear in the examination. Successful candidates join the INA for the Naval Orientation Course (NOC).

(b) **Non-UPSC Entry:** The non-UPSC entries cater to both Permanent Commission (PC) and Short Service Commission (SSC). In this case, applications are invited and short-listed at IHQ of MoD (Navy) based on percentage in the qualifying exam. The short listed candidates are then sent for SSB interviews. Thereafter, a merit list, comprising qualified candidates, is prepared as per the availability of vacancies. Recruitment for the non-UPSC entries is made through Service Selection Board interview.

(c) **10+2 (Cadet Entry Scheme):** This scheme is a permanent commission entry in the Executive, Engineering and Electrical branches of the Indian Navy. Under this scheme, candidates with 10+2 (PCM) qualifications, after selection through the Services Selection Board, are sent to the Indian Naval Academy for the B.Tech. course. On successful completion of the course, they are granted Permanent Commission in the Executive, Electrical and Engineering branches of the Navy.

(d) **University Entry Scheme (UES):** The UES was re-launched in August, 2005 as a Short Service Commission Scheme. Seventh and Eighth semester Engineering college students are eligible for induction into the Executive and Technical Branches of the Navy. The scheme also caters for the induction of Permanent Commission Executive Officers w.e.f. 2014. Naval selection teams from the IHQ of MoD (Navy) and Command Headquarters visit AICTE approved engineering colleges, across the country, to short-list the candidates. The short-listed candidates, based on All India Merit, undergo interview at the Services Selection Board. The successful candidates are, thereafter, put through medical tests. Final selection is based on all India merit on the basis of marks obtained in the SSB interviews and availability of vacancies.

10.12 Women Officers: Women are being inducted into the Navy, as Short Service Commission (SSC) officers in the Executive Branch (Observer, ATC, Law & Logistic), Education Branch and the Naval Architecture of the Engineering Branch. In March, 2016, approval of MoD was accorded for induction of women Short Service Commission (SSC) officers as Pilots in Maritime Reconnaissance (MR) stream and in the Naval Armament Inspectorate (NAI) cadre. The inductions are planned commencing mid-2017.

10.13 Permanent Commission to SSC Officers: The Government has introduced grant of Permanent Commission prospectively to the Short Service Commission officers, for both men and women, of the Executive Branch (Law Cadre), Education Branch and Engineering Branch (Naval Architecture) w.e.f. 2008. The following additional avenues have been introduced to re-vitalise the SSC entry:

(a) **Revision of Initial Engagement Period of SSC Officers:** In order to have better management and to ensure enhanced availability of SSC officers for the Navy, the initial engagement period of SSC officers has been amended from 10 years to 10/ 12/ 14 years depending on the Branch/ specialisation, from SSC batches commencing December, 2015. The policy also provides for officers already commissioned in the Navy to volunteer to be governed by the revised engagement guidelines.

(b) **Grant of PC to SSC Officers:** In implementation of the Government of India policy of September 26, 2008 for prospective grant of PC to SSC officers in Education branch, Law and Naval Constructor cadres, the first batch of SSC officers inducted between September, 2008 and December, 2009 were considered for PC in 2015 and a total of 14 officers (including

seven women officers) have been granted PC in April, 2016.

(c) **Re-employment of Indian Navy SSC Officers to Indian Coast Guard (ICG):** With an aim to provide alternate career options for SSC officers, a policy was issued in December, 2015 in consultation with Indian Coast Guard Headquarters for re-employment of INS SSC officers in the ICG on completion of 12 years of service. As a result, eight IN SSC officers were re-employed in the ICG in May, 2016.

10.14 Recruitment through NCC University graduates possessing Naval NCC 'C' certificate with minimum 'B' grading and 50% marks in the Engineering degree examination are inducted in the Navy as regular Commissioned Officers. These graduates are exempted from appearing in the Combined Defence Services Examination (CDSE) conducted by the UPSC and are selected through the SSB interview only. They join the Indian Naval Academy for Naval Orientation Course (NOC) along with the CDSE cadets.

10.15 Special Naval Architecture Entry Scheme: The Government has approved the induction of Naval Architect officers into the Engineering Branch of the IN, as Short Service Commissioned Officers, under a special scheme of 'Special Naval Architects Entry Scheme' (SNAES). An empowered Naval team visits IIT Kharagpur, IIT Chennai, Cochin University of Science and Technology (CUSAT) and Andhra University, where B.Tech. (Naval Architecture) courses are conducted, to select candidates through campus interviews. The selected candidates undergo medical examination at the nearest Military Hospital and if found fit, are selected for training.

Recruitment of Sailors

10.16 Method of Recruitment: Recruitment into the Navy is carried out on all India basis on

state-wise merit of the eligible recruitable male population, as per the number of vacancies available. The number of personnel recruited from a particular state depends on the number of eligible applicants who are able to qualify in the written examination, physical fitness test, and medical examination and their relative position in the merit. There is no quota of vacancies based on caste, creed or religion. Advertisements in all leading National and Regional newspapers and Employment News are published inviting applications from eligible volunteers. Publicity material is also dispatched to a large number of schools, colleges and all Zilla Sainik Boards. The local administration carries out the publicity drive in rural/ backward areas through local media. Recruitment of sailors in the Navy is carried after the process of a written examination, physical fitness test and medical examination.

10.17 Types of Entries: The various entries, for recruitment of sailors along with the educational qualifications, are as follows:

- (a) Artificer Apprentices (AAs) – 10+2 (PCM).
- (b) Senior Secondary Recruits (SSR) – 10+2 (Sc.).
- (c) Matric Entry Recruits (MER), for recruitment of Cooks, Stewards and Musicians – Matriculation.
- (d) Non Matric Recruits (NMR), for recruitment of Hygienist Sailors – Class VI.
- (e) Direct Entry (Outstanding Sportsmen).

10.18 NCC Certificate Holders: The Navy has earmarked 25 vacancies per Batch for candidates holding NCC (Naval Wing) 'C' certificate in the SSR entry. Other NCC certificate holders who

qualify in the written exam of various sailors entries are awarded additional marks as follows:

Type of NCC Certificate	Additional Marks Awarded
A	2
B	4
C	6

Publicity for Recruitment

10.19 Measures have been taken to make the youth of the nation more aware of opportunities in the IN, as officers (including women officers) and sailors. The means of publicity adopted to attract better talent are as follows:

- (a) **Press Advertisements** are released through the Directorate of Advertising and Visual Publicity (DAVP) in the Employment News/ Rozgar Samachar and in newspapers in different languages for various entries.
- (b) **Advertisements in Journals/ Magazines** normally brought out in those of educational institutions.
- (c) **Hoardings** are planned to be erected at DAVP approved sites to attract youth of the country towards joining the Navy.
- (d) **Printed Publicity:** Information folders, leaflets, brochures, data cards, posters and blow-ups, prepared through DAVP and private professional agencies are widely distributed.
- (e) **Exhibition and Fairs:** Each year, a stall is set up at the Defence Pavilion, at the India International Trade Fair (IITF), New Delhi, where information regarding recruitment in the Armed Forces is provided to visitors. This is also done in other organised fairs, which are career oriented or meant for students.

(f) **Distribution of Publicity Material:** Every year, printed publicity material giving information about Navy and various entries for recruitment into the Navy is distributed to about 8000 schools all over the country.

Indian Naval Academy (INA), Ezhimala

10.20 The Indian Naval Academy (INA) located at Ezhimala, Kerala is spread over 2452 acres of coastal upland and has world class facilities in terms of infrastructure - for both academic pursuits and outdoor activities; including state-of-the-art laboratories, workshops, swimming pool and play fields. The Academy has modern residential facilities, an excellent Mess and five well laid-out squadrons, each with its own comprehensive facilities. Built at a cost of over ₹ 721.88 crore, the Academy accommodates and trains approximately 750 cadets per year. The capacity of INA is being enhanced to 1200 cadets in Phase II, which is likely to be completed by 2020.

10.21 The first B.Tech. Course commenced at INA on June 22, 2009. This was a significant step in the evolution of the Navy to meet the technical challenges of the 21st Century. In addition to the technical training, the Academy provides its cadets with a healthy mix of humanities and Naval History. B.Tech. training is conducted in Applied Electronics and Communication Engineering (ECE) for 'L' officers and Mechanical Engineering (ME) for 'E' and 'NA' officers. Accordingly, B.Tech. (AEC), B.Tech. (ECE) and B.Tech. (ME) degrees are awarded by Jawaharlal Nehru University (JNU) on completion of the B.Tech. course. On completion of a common curriculum in the first three semesters, cadets are separated into different streams for the remaining time. In order to enhance the technical knowledge of ex-NDA naval cadets and to facilitate their integration

with INA Cadets, B.Tech. course for Naval cadets has been started at NDA from July, 2016. The naval cadets from NDA would be joining INA after completing six semesters of B.Tech. (AEC) at NDA. The last two B.Tech. semesters for ex-NDA cadets would be conducted at INA.

10.22 In addition to the flagship INAC course, the INA conducts Naval orientation Course (NOC), Naval Orientation Course (Extended) and Short Naval Orientation Course (SNOC) for trainees of IN and ICG, including women officers. Commencing December, 2015, officer cadets from friendly foreign countries are being trained at INA.

Training of Sailors at INS Chilka

10.23 INS Chilka is the premier Sailors Training establishment of the Indian Navy which was set up for ab-initio training of approximately 1700 trainees per year. On an average, Chilka also trains 800 personnel of other services such as CISF/BSF and ICG annually. The Establishment presently trains more than 5000 trainees annually which requires huge logistic support and manpower resources. It also provides complete military support for the State of Odisha during Humanitarian Assistance and Disaster Relief (HADR) operations as well as any civil unrest in which the State Government seeks assistance from the establishment. Administrative and logistics support to the NCC units and ECHS polyclinics located within the state of Odisha and training of the NCC cadets utilising own manpower and material resources is also provided by INS Chilka.

Foreign Training

10.24 **Training of Foreign Naval Personnel:** The Indian Navy has been providing training to foreign naval personnel for more than four decades, during which it has trained more than 12000 foreign naval personnel from over 41 Friendly Foreign Countries. IN endeavours

to constantly evaluate and evolve the training pattern for providing high quality training in order to build capacity and everlasting relationships with friendly foreign countries.

10.25 Indian Technical and Economic Cooperation (ITEC) Scheme: The Ministry of External Affairs, Government of India 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 fee, boarding and lodging expenses are fully funded by the Government of India (except in the case of ITEC II Scheme, wherein the parent country bears the cost of airfare). Further, financial aid in the form of subsistence allowance is also provided to trainees to meet the living expenses for the entire duration of the course. In cases where ITEC funding is unavailable, training is availed under the Self Financing Scheme (SFS), wherein the entire cost of training is borne by the trainees' own Government.

10.26 Training is planned on a yearly basis from July 1 to June 30 of the next year and promulgated in the form of an Annual Training Programme in order to synchronise the organisational process. In most cases, international students are accommodated with IN trainees. The courses are structured for effective and efficient utilisation of training infrastructure and resources. The last few years have witnessed a steady increase in our commitment to build capacity of friendly navies through training cooperation. 'Training Diplomacy', thus, has become the corner stone of India's foreign cooperation initiatives. In pursuit of this aim, 960 vacancies have been allocated in Academic Year 2016-17 to various friendly foreign countries.

10.27 Deputation of Indian Navy Mobile

Training Teams (IN MTT): To address the growing international training load, customised training courses are being undertaken by specially constituted Mobile Training Teams (MTT). IN has deputed MTTs to Oman, Myanmar, Kenya, Vietnam, Mauritius and Bangladesh and request from some other countries are under consideration. This endeavour will not only reduce the burden on our own training infrastructure but also effectively increase our training footprint across IOR.

Training of CAPF and NCC

10.28 Indian Navy have been actively involved in the marine orientation training of Central Industrial Security Force (CISF) personnel. Approximately 240 CISF personnel in batches of 60, are trained every year at INS Chilka for protection of Ports and Installations near the coast. In addition, a Marine Orientation capsule for the Border Security Force (BSF) personnel and comprehensive 35 weeks training capsule for 60 personnel of Marine Task Force (MTF), Gujarat is also conducted by the Indian Navy.

10.29 Training for the Naval NCC has been a priority and regular sea attachment and training camps are conducted every year, thereby giving valuable exposure to the NCC cadets on life at sea. The training camps are for a duration of twelve days each, with one day of sailing on board warships. Approximately 240 to 360 NCC cadets participate in these camps. Further, as a culmination of the professional training of Naval NCC cadets, a 'Nau Sainik' camp is scheduled each year, wherein a total of approximately 590 cadets participate.

INDIAN AIR FORCE (IAF)

Recruitment of Officers

10.30 Air Force Common Admission Test (AFCAT): This test is conducted twice every year by IAF to select officers for all branches.

1,91,976 candidates applied while 95,271 appeared for the test conducted on August 28, 2016. Both these numbers are the highest ever in the history of the AFCAT.

10.31 Eligibility Criteria for AFCAT: Certain changes in the eligibility criteria in educational qualification for Engineering and Educational branches for selection in the IAF have been introduced from August, 2016 onwards.

10.32 Introduction of Computerised Pilot Selection System (CPSS): To ascertain the aptitude of candidates for flying in the Armed Forces, Pilot Aptitude and Battery Test (PABT) was being conducted for the past few decades. From October 2016, PABT has been replaced by CPSS, which is a fully computer based evaluation system. CPSS has been jointly developed by Defence Institute of Psychological Research (DIPR) and Aeronautical Development Establishment (ADE) and has been introduced after extensive testing and evaluation.

Recruitment of Airmen

10.33 Presently, 14 Airmen Selection Centres are geographically spread out and provide reasonable access to candidates desirous of joining IAF as airmen. Recruitment in IAF in airmen cadre is on All India Merit Basis through Scheduled Selection Tests which is generally conducted once in a year. It is open to all eligible citizens of the country without any discrimination to caste, creed, religion, region or community. In addition to scheduled tests, recruitment rallies are conducted in remote/ low response/ border/ insurgency affected/ naxal affected/ tribal areas or hilly districts and island territories of the country to provide opportunities to youth from these regions to join National mainstream. All India Select List (AISL) of the successful candidates is published twice a year i.e April 30 and October 31 each year. Introduction of Adaptability Test (AT)

has been introduced recently to weed out cases with maladaptive behaviour. A website 'airmenselection.gov.in' has been launched and dedicated to the Nation on July 29, 2015. Aspiring candidates for airmen selection can now apply online for all recruitment tests. For Scheduled Test in April/ May 2016, a total of 3,43,099 candidates have registered their application online. Further, for Scheduled Test planned in February/ March 2017, online registration was open from September 15, 2016 to September 29, 2016.

Training

10.34 Air Force Academy (AFA), Dundigal: The foundation stone of Air Force Academy was laid on October 11, 1967 by the President of India. The Air Force Flying College was shifted from Jodhpur to Hyderabad and was formally inaugurated on January 16, 1971. The Air Force Academy undertakes the tasks of training of pilots and ground duty officers. Since 1971, the Academy has been meeting the expanding training needs of the IAF and also the Indian Army, Navy and Indian Coast Guard. A number of officers and cadets from friendly foreign countries also undertake training at the Academy.

10.35 e-Training: In line with Government of India's 'Digital India' initiative, IAF has taken a lead to bring about a paradigm shift in the present training methodology for ab-initio air warriors. Towards this, an e-Training project is presently being piloted for 400 ab-initio trainees at Electrical and Instrumentation Training Institute (E & ITI) located at AF Station Jalahalli in Bengaluru. Based on the success of the pilot project, the same model would be extended to all the Training establishments of the IAF.

10.36 Induction of National Skill Qualification Framework (NSQF) Certified Candidates in Indian Air Force: IAF in partnership with NSDC

is planning to induct NSQF certified individuals in regular service as airmen for the identified job roles (Trades), after undergoing necessary selection procedures of the IAF. In the initial phase, Auto Fit and Auto Tech trades have been identified to be undertaken as a pilot project.

10.37 **Foreign Training:** IAF undertakes the training of Friendly Foreign Countries (FFCs) trainees under the Indian Technical and Economic Cooperation (ITEC) programme of Ministry of External Affairs. IAF officers are also being nominated to attend courses in various FFCs. IAF avails courses offered by USA, Bangladesh, UK, Japan, Australia, Indonesia, Thailand, Malaysia, Spain and various other countries.

INDIAN COAST GUARD (ICG)

10.38 **Recruitment of Officers:** The Officers are recruited into ICG bi-annually. The vacancies for Assistant Commandant in ICG are advertised in Employment News and leading Newspapers in the month of December/ January and June/ July. Five years relaxation of age for SC/ST and 3 years for OBC is admissible for recruitment. The Officers are recruited through Coast Guard Selection Board (CGSB) in the following streams:

(a) **General Duty:** Male/ Female candidates between the age group of 21-25 years having Bachelor's Degree of a recognized University with Mathematics and Physics as subjects up to Intermediate or 12th standard of 10+2+3 scheme of education or equivalent are eligible to apply for Officers as General Duty stream.

(b) **General Duty (Pilot/ Navigator):** Male/ Female candidates between the age group of 21-25 years having Bachelor's Degree of a recognized University with Mathematics and Physics as subjects up to Intermediate or 12th standard of 10+2+3 scheme of education or

equivalent are eligible to apply for officers as General Duty (Pilot/ Navigator) stream.

(c) **General Duty (Commercial Pilot License Short Service Entry):** Male/ Female candidates between age group of 19-25 years having 12th Class pass or equivalent qualification and/ are in possession of Commercial Pilot License (CPL) issued/validated by Director General Civil Aviation on the date of submission of application are eligible to apply for Officers in CPL Short Service Entry.

(d) **General Duty (Short Service Appointment Scheme) for Women:** Women candidates between the age group of 21-25 years having Bachelor's Degree of a recognized University with Mathematics and Physics as subjects up to Intermediate or 12th standard of 10+2+3 scheme of education or equivalent are eligible to apply for Officers as General Duty stream.

(e) **Technical Branch:** Male candidates between age group of 21-25 years with degree in Engineering (Naval Architecture/ Mechanical/ Marine/ Automotive/ Mechtronics/ Industrial & Production /Metallurgy/ Design/ Aeronautical/ Aerospace/ Electrical/ Electronics/ Telecommunication/ Instrumentation/ Instrumentation and Control/ Electronic & Communication/ Power Engineering/ Power Electronics) or equivalent qualification are eligible to apply for Officers in Technical stream.

(f) **Law Branch:** Male/ Female candidates between the age group of 21-30 years having Degree in Law are eligible to apply for Officer in Law stream. However, the age is relaxable up to five years in case of personnel serving in the Coast Guard Organisation or equivalent rank in Army or Navy or Air Force and for the candidates belonging to the Scheduled Castes or Scheduled Tribes; and three years for the Other Backward Classes.

10.39 Induction of Sub-ordinate officers as Officer: Outstanding subordinate officers up to the age of 48 years are selected Assistant Commandant in General duty and Technical Branch as per the selection procedure.

10.40 Recruitment of Personnel Below Officers Rank (PBORs): The PBORs are recruited into Coast Guard bi-annually. The vacancies for PBORs in Coast Guard are advertised in Employment News and leading Newspapers in the month of December/ January and June/ July. The PBORs are recruited in the following main streams:

(a) **Yantrik:** Male candidates having passed matriculation with three years diploma in Mechanical/ Electrical/ Electronic Engineering and between the age group of 18-22 years are eligible to apply as 'Yantrik'.

(b) **Navik (General Duty):** Male candidates having passed 12th class with Mathematics and Physics as subjects and between age group of 18-22 years are eligible to apply as 'Navik' (General Duty).

(c) **Navik (Domestic Branch):** Male candidates having passed Matric and between age group of 18-22 years are eligible to apply as 'Navik' (Domestic Branch).

(d) In accordance with the Government directives, the interviews for all group 'B' & 'C' posts have been discontinued. Only skill test is being conducted for suitability for the post.

OTHER ORGANISATIONS

Sainik Schools

10.41 The Sainik Schools are established as a joint venture of the Central and State Governments and are under the overall governance of Sainik Schools Society. At present, there are 25 Sainik Schools located in various

parts of the country. There is a growing demand from many States to open new Sainik Schools. The states of Andhra Pradesh, Haryana, Bihar and Karnataka have two Sainik Schools each. Memorandum of Agreement (MoA) has been signed to set up three new Sainik Schools in Uttar Pradesh at Mainpuri, Amethi and Jhansi; two in Rajasthan at Jhunjhunu and Alwar; and one each in Uttarakhand (Rudraprayag) and Mizoram (Chingchhip). MoA has also been signed for a second Sainik School in Maharashtra (Chandrapur) and Odisha (Sambalpur). Efforts are also being made to commence Sainik School in Mizoram w.e.f. April 1, 2017.

10.42 The objectives of Sainik Schools include bringing quality public school education within the reach of common man, all round development of a child's personality in order to prepare him for entry into National Defence Academy and to remove regional imbalance in the officer cadre of the Armed Forces. Approximately one fourth of cadets in each batch of National Defence Academy are from Sainik Schools. For the 136th NDA/ INA Course which commenced in July 2016, a total of 102 Cadets from all Sainik Schools have joined the NDA and Naval Academy.

10.43 Sainik Schools admit boys into classes VI and IX. Their age should be 10-11 years for classes VI and 13-14 years for class IX as on 1st July of the years of admission. Admissions are made strictly as per the order of merit on the basis of an All India Sainik School Entrance Examination held in January each year.

10.44 The Sainik Schools Society has taken a number of measures to achieve academic excellence which has also resulted in achieving record higher Board and NDA results. Towards the above end, every school is conducting

specialised Training/Workshops for the cadets as well as staff to improve their performance.

Rashtriya Military Schools (RMS)

10.45 There are five Rashtriya Military Schools in the country at Belgaum and Bangalore in Karnataka, Chail in Himachal Pradesh and Ajmer and Dholpur in Rajasthan. Youngest Rashtriya Military School is at Dholpur established on July 16, 1962. These schools are affiliated to Central Board of Secondary Education (CBSE). These schools aim to provide quality education to the boys and prepare them to join Defence Services.

10.46 Rashtriya Military Schools admit boys through a Common Entrance Test. The candidates are tested in four subjects i.e. English, Mathematics, Intelligence and General Knowledge. 67% of the seats in RMS are reserved for the wards of Junior Commissioned Officers/ Other Ranks, 20% seats are reserved for wards of Commissioned Officers and the remaining 13% for the wards of civilians.

National Defence Academy (NDA)

10.47 NDA is a premier Tri-Service institution which trains cadets of all three Services before inducting them into their respective pre-commissioning training academies. Keeping in mind the shortage of officers in the Armed Forces and the consequent urgency for making up the deficiency, the intake capacity of NDA was recently enhanced from 1800 cadets to 1920 cadets with the sanction for raising an additional squadron at NDA i.e. 16th Squadron. The construction work for building of 16th Squadron commenced in 2015 and is expected to be completed by May, 2017. In addition, the raising of an additional battalion (5th Bn) with 4 squadrons at NDA, to further enhance the intake capacity to 2400 cadets,

has been progressed. In order to equip military leaders of tomorrow to cope with the future technology inductions, NDA has commenced B.Tech. curriculum for Naval and Air Force cadets. Introduction of B.Tech. for Army cadets is in the planning stage.

Rashtriya Indian Military College (RIMC)

10.48 Rashtriya Indian Military College (RIMC) was established in 1922 with the aim to prepare selected boys to join National Defence Academy (NDA) and Indian Naval Academy (INA). 25 cadets are admitted in each term twice a year (January and July) on the basis of All India Entrance Examination without any reservation.

10.49 Selection of boys for RIMC is through a written examination cum viva-voce conducted through the State Governments. Seats for respective States are reserved based on population. The College admits boys in Class VIII.

Indian Military Academy (IMA), Dehradun

10.50 Founded in 1932, Indian Military Academy, Dehradun aims at the fullest development of intellectual, moral and physical qualities of persons joining the Army as officers. The various modes of entry into IMA are:

- (a) On graduation from NDA.
- (b) On graduation from Army Cadet College, which is a Wing of the IMA itself.
- (c) Direct Entry graduate cadets, who qualify the Union Public Service Commission Examination and get through the Service Selection Board.
- (d) For Technical Graduate Course (TGC).

- (e) Under University Entry Scheme (UES) for engineering college students in Final/Pre-Final year of studies.
- (f) Through 10+2 Technical Entry Scheme (TES).

10.51 The IMA also imparts training to Gentlemen Cadets from friendly countries.

Officers Training Academy (OTA), Chennai

10.52 Established in 1963, the Officers Training School (OTS) was re-designated as Officers Training Academy (OTA) from January 1, 1988 on completion of 25 years of its existence. Its main task, before 1965 was to train Gentlemen Cadets for grant of Emergency Commission. From 1965 onwards, the Academy trains cadets for Short Service Commission.

10.53 With the entry of women officers in the Army since September 21, 1992, around 100 lady officers now get commissioned from OTA every year in Army Service Corps, Army Education Corps, Judge Advocate General's Department, Corps of Engineers, Corps of Signals and Electrical and Mechanical Engineers.

10.54 OTA imparts pre-commission training for the following:

- (a) Short Service Commission (Non Technical) for Graduates
- (b) Short Service Commission (Technical) for Graduates
- (c) Short Service Commission (Woman) for Graduate/Post Graduate Lady Cadets

Officers Training Academy (OTA), Gaya

10.55 The Cabinet Committee on Security

(CCS), on December 3, 2009 has approved setting up of second Officers Training Academy (OTA) at Gaya, Bihar. The training commenced from July 18, 2011. At present the authorised annual intake in OTA, Gaya is 380 Gentlemen cadets as SCO (Special Commissioned Officers) and Technical Entry Scheme 10+2. The capacity will be progressively built up to a strength of 750 Gentlemen cadets.

Army War College (AWC), Mhow

10.56 Re-designated as the Army War College from January 15, 2003, the earlier College of Combat was created out of Infantry School and established as an independent institution on April 1, 1971. A premier all arms tactical training institution for officers, the AWC performs the important functions of evaluation of new concepts and doctrines in the fields of tactics and logistics.

Junior Leaders Wing (JLW), Belgaum

10.57 The Junior Leaders Wing at Belgaum is training junior officers, JCOs and NCOs in Sub-Unit Level Tactical and Special Mission Techniques to enable them to carry out assigned operational missions in varied terrain under severe stress and strain and be able to command and administer their Sub-Units effectively in war and peace. It trains officers and NCOs of Army, Para Military Forces, Central Police Organisations and friendly foreign countries in commando type of operations and makes them capable of either forming part of special mission groups or leading independent missions in all types of terrain and operational environment.

Junior Leaders Academy (JLA), Bareilly

10.58 Considering the need for more training facilities, JLA Ramgarh has been amalgamated

with JLA Bareilly. The institution has been imparting training to 4212 candidates every year.

High Altitude Warfare School (HAWS), Gulmarg

10.59 The aim of the School is to train selected personnel in all aspects of High Altitude (HA) mountain warfare and develop techniques for fighting in such terrains. HAWS conducts two series of courses, viz. Mountain Warfare (MW) and Winter Warfare (WW) at Sonamarg and Gulmarg, respectively for Officers, JCOs and NCOs. The training periods broadly run from January to April (WW Series) and May to October (MW Series). Personnel from the School have scaled some of the important peaks in the world including Mt. Everest, Mt. Kanchenjunga and Mt. McKinley in the USA.

Counter Insurgency & Jungle Warfare School (CIJW), Veirangte

10.60 The CIJW conducts courses for Officers, JCOs/NCOs in counter insurgency techniques, language courses in Assamese, Bodo, Nagamese, Manipuri/Tangkhul and also imparts Pre-induction Training (PIT) for all units prior to induction into insurgency areas.

Counter Insurgency Pre Induction Training Battle Schools

10.61 Since the capacity of CIJW School was limited and on account of peculiar operational situation and administrative problems of movement of Units, it was considered necessary to impart training to units at places closer to their areas of operation. More Corps Battle Schools from within the resources of the Army have been established at Kheru, Sarol and Bhalra for units moving into Northern Command and at Thakurbari for units moving into Assam and Meghalaya. Besides training for counter insurgency, these schools, especially in

the Northern Command, are training the Units for their role along the Line of Control (LoC) and High Altitude.

Infantry School, Mhow

10.62 The Infantry School is the largest and oldest military training institution of the Indian Army. Courses conducted at Infantry Schools are Young Officers Course, Platoon Weapon Course, Mortar Course, Anti Tank & Guided Missile Course, Medium Machine gun & Automatic Grenade Launcher (J/N) Course, Section Commanders Course, Automatic Data Processing Course, Sniper Course and Support Weapon Course. The institution is training Officers, JCOs and ORs of not only infantry but other arms and services also, besides Para Military Forces and Central Police Organisations.

College of Materials Management (CMM), Jabalpur

10.63 The College owes its lineage to Indian Army Ordnance Corps (IAOC) School of Instruction established at Kirkee in October, 1925. The School was later re-designated as IAOC Training Centre in February, 1939 and shifted to its present location at Jabalpur. In January, 1950, the IAOC School became the Army Ordnance Corps (AOC) School. The AOC School was renamed as College of Materials Management (CMM) and affiliated to the University of Jabalpur (Rani Durgavati Vishwa Vidhyalaya) in 1987. The CMM attained an autonomous status in 1990. The College is also registered as a 'Government College' with the University Grants Commission. It also has the approval of All India Council of Technical Education (AICTE).

10.64 The National Assessment and Accreditation Council (NAAC), an autonomous body constituted under the UGC Act has awarded Five Star (Highest) Accreditation to

the College. The college imparts necessary institutional training to all ranks of AOC and civilians entrusted with management of Ordnance support in the Indian Army. It also imparts training in handling unit administration and material management to selected Officers, JCOs and Other Ranks of all arms and services.

School of Artillery, Deolali

10.65 The School of Artillery, Deolali, the academic centre for various sub-disciplines of the science and methodology of artillery warfare imparts technical training to Officers, JCOs and NCOs on artillery weapons and systems including training of pilots for Air Observation Post duties. Besides, the review of doctrines, study and trials of artillery equipment, both Indian and foreign, is also carried out.

10.66 Apart from a large number of Officers, JCOs and NCOs of the Indian Army, the school has also trained several officers and personnel from Friendly Foreign Countries during the year.

Army Air Defence College, Gopalpur

10.67 The Army Air Defence College (AADC) earlier functioned as a wing of School of Artillery, Deolali till October, 1989, when it was moved to Gopalpur before separation of Air Defence Artillery from the main branch of Artillery. The college trains personnel of Air Defence Artillery, others arms and armed forces personnel of Friendly Foreign Countries in Air Defence related subjects.

10.68 The AADC conducts a number of courses. Some of the courses are Long Gunnery Staff Course (Officers), Young Officers Course, Electronic Warfare Course, Senior Command Air Defence Course, Long Gunnery Staff Course, Junior Commissioned Officer/Non

Commissioned Officer, Technical Instructors Fire Control Course, Aircraft Recognition Course, Unit Instructors and Crew Based Training and Automated Data Processing Course.

Army Service Corps (ASC) Centre and College, Bangalore

10.69 Army Service Corps Centre (South) and Army School of Mechanical Transport were merged with ASC Centre at Bangalore to establish Army Service Corps Centre and College at Bangalore on May 1, 1999. It is a premier training institute imparting basic and advanced training in multifarious disciplines viz. logistics management, transport management, catering, automated data processing etc. to Officers, Junior Commissioned Officers, Other Ranks and recruits of Army Service Corps as well as other arms and services.

10.70 Since 1992, the ASC College has been affiliated to Rohilkhand University, Bareilly for award of diplomas/ degrees in Logistics and Resource Management.

Army Education Corps Training College and Centre, Pachmarhi

10.71 The AEC Training College & Centre, Pachmarhi is a Defence Seat of Excellence in Educational Training in the Armed Forces. It is also an Autonomous College affiliated to Barkatullah University, Bhopal with academic and administrative powers to design, conduct, test and award its own courses and degrees.

10.72 The Department of Map Craft runs a ten week long Map Reading Instructors Course for AEC Officers and Personnel Below Officer Rank (PBOR) of all Arms and Services of Indian Army, Para Military Forces personnel and personnel from friendly foreign countries.

10.73 The 12-week long Unit Education

instructors (UEI) Course trains ORs from all Army and Services of the Indian Army to be effective instructors in their units.

10.74 The Foreign Language Wing (FLW), which is one of the three Divisions of the AEC Training College & Centre, a premier node of foreign language training, not only in the Armed Forces but also in the national academic environment has two digitized language labs, each with a capacity of 20 students.

Military Music Wing, Pachmarhi

10.75 The Military Music Wing (MMW) raised in October, 1950 under the patronage of the then C-in-C General (later Field Marshal) K.M. Cariappa, OBE as a part of the AEC Training College & Centre, Pachmarhi has a rich treasure of more than 200 musical compositions to its credit and has also excelled in maintaining the standard of military music in India through a diverse range of courses designed to train the recruit bandsmen, pipers and drummers.

Remount and Veterinary Corps Centre and School, Meerut

10.76 The Remount and Veterinary Corps (RVC) Centre and School, located in Meerut, aims at training officers and PBORs of all Arms and Services on animal management and veterinary aspects. Eleven courses for officers and six for PBORs are conducted. The total strength of students trained is 250.

Army Sports Institute (ASI), Pune

10.77 With a view to produce prospective medal winners at international sporting events, the Army Sports Institute at Pune has been set up alongwith Army Sports Nodes in selected disciplines at various places in the country. Appropriate funds have been earmarked for state-of-the-art infrastructure and equipment coupled with food, habitat, foreign exposure and training under foreign coaches.

Army School of Physical Training (ASPT), Pune

10.78 Army School of Physical Training (ASPT) is a premier institution imparting systematic and comprehensive instruction to personnel of the Army regarding the conduct of physical training in units and sub-units. It also imparts basic training in Sports and Games with a view to improving the standard in the Army and complement physical training through recreation in games and sports. These courses are attended by Officers, JCOs and ORs of the Army, Para Military Forces and service personnel from friendly foreign countries. In collaboration with National Institute of Sports, ASPT has started six allied sports in Boxing, Volleyball, Basketball, Swimming and Life Saving, Judo and Yoga Courses for PBORs.

Combat Army Aviator Training School (CAATS), Nasik Road

10.79 Combat Army Aviator Training School (CAATS) raised at Nasik Road in May 2003 aims to train aviators in aviation skills and handling of aviation units in various operations of war, to train aviation instructors to develop Standard Operating Procedures (SOPs) and also to assist Army Training Command in development of Aviation Tactical Doctrine in Synergy with ground troops. The courses identified to be run in the School are Pre-Basic Pilot Course, Basic Army Aviation Course, pre-Qualified Flying Instructor Course, Aviation Instructor Helicopter Course, Helicopter Conversion on type, Flight Commanders Course and New Equipment Course.

College of Military Engineering (CME), Pune

10.80 The College of Military Engineering at Pune is a premier technical institution conducting training for personnel of the Corps of Engineers, other Arms and Services, Navy,

Air Force, Para Military Forces, Police and Civilians. Besides, personnel from friendly foreign countries are also trained. CME is affiliated to Jawaharlal Nehru University (JNU) for the award of B.Tech. and M.Tech. degrees. All India Council for Technical Education (AICTE) also recognizes the graduate and postgraduate courses run by the CME.

Military College of Electronics and Mechanical Engineering (MCEME), Secunderabad

10.81 The role of MCEME is to provide technical education to all ranks of EME, including civilians, in various disciplines of engineering, weapon systems and equipment with special reference to their maintenance, repairs and inspection and to provide training in management and tactics at senior, middle and supervisory levels. The MCEME is designed to train 1760 personnel (all ranks). It conducts 13 courses for officers and 61 different courses for PBORs.

10.82 Computer Based Training Packages (CBTs) and digitized charts have been developed which contain exhaustive technical information on the functioning, repair, maintenance, servicing aspects and the correct usage of the electrical and electronics portion of equipment which is being taught at MCEME.

Corps of Military Police Centre and School, Bangalore

10.83 The role of the School is to train officers and PBORs on military and police duties in law, investigation, traffic control etc. Four courses for officers and fourteen courses for PBORs are being conducted. The total strength of students being trained is 910.

Army Airborne Training School (AATS), Agra

10.84 The Army Airborne Training School (AATS) was previously designated as Army Air Transport Support School (AATSS). In response to the need to concentrate all Airborne Training under one single agency, the Army Air Transport Support School was re-designated as Army Airborne School with effect from January 15, 1992.

Military College of Telecommunication Engineering (MCTE), MHOW

10.85 MCTE, Mhow trains Signal Officers in Combat Communication, Electronic Warfare, Communication Engineering, Computer Technology, Regimental Signal Communications and Cryptology. Besides the five Training Faculties and Wings, the College has a Department of Administration to provide administrative and logistic support to the staff and the students, a Conceptual Studies Cell to evolve communication doctrines and produce training material, a modern and well-stocked library, and an in-house printing press. Trainees are provided with an opportunity to study and train in a formal setting so as to equip them with the requisite skills, knowledge and abilities for current as well as future tasks.

Military Intelligence Training School and Depot (MINTSD), Pune

10.86 The Military Intelligence Training School and Depot (MINTSD) is a premier establishment responsible for imparting training on Intelligence Acquisition, Counter Intelligence and Security aspects to all ranks of the Indian Army, Navy, Air Force, and Para Military Forces and personnel of friendly foreign countries. Civilian officers

of the Department of Revenue Intelligence are also trained at this establishment. The School has the capacity to impart training to 90 officers and 130 Junior Commissioned Officers/ Non Commissioned Officers of all the arms at a time. The School trains approximately over 350 Officers and 1100 Junior Commissioned Officers/Non Commissioned Officers every year.

Electronic and Mechanical Engineering School (EME), Vadodara

10.87 The EME School conducts postgraduate level courses for officers and diploma and certificate level courses for PBOR. A number of foreign officers and PBOR from friendly foreign countries have been attending various courses conducted at EME School.

Institute of Military Law, Kamptee

10.88 The Institute of Military Law was established at Shimla. In 1989, the institute was shifted to Kamptee. The charter of duties of the School includes a comprehensive system of legal education for officers of all arms and services of the Army. The School undertakes wide-ranging research, development and dissemination work in the field of Military and allied laws.

Armoured Corps Centre and School, Ahmednagar

10.89 In 1948, the Training Wings, the Recruits Training Centre and Armoured Corps Depot and Records were shifted to Ahmadnagar where the fighting Vehicles School was already functioning and they were all amalgamated to form the Armoured Corps Centre and School and Armoured Corps Records. It has six wings namely School of Armoured Warfare, School of Technical Training, Basic Training Regiment, Driving and Maintenance Regiment, Automotive Regiment and Armament and Electronics Regiment for Specialised training in these disciplines.

Foreign Training

10.90 During the period April 1, 2016 to December 31, 2016, HQ IDS, which facilitates incoming foreign officers from Friendly Foreign Countries (FFCs) and Indian officers going abroad to do courses, catered for 59 officers going abroad to 22 FFCs and 97 officers from 56 countries coming to India's tri-service institutes viz. DSSC, CDM, NDA and MILIT.

10.91 Myanmar sent two cadets to NDA for the first time and this will be a continuing process. Saudi Arabia has been given five vacancies in the June, 2017 course at NDA and this too will be a continuing process.





RESETTLEMENT AND WELFARE OF EX-SERVICEMEN

केन्द्रीय सैनिक बोर्ड की 30^{वाँ} बैठक 30th MEETING OF KENDRIYA SAINIK BOARD

विज्ञान भवन, नई दिल्ली
21 जुलाई 2016

Vigyan Bhawan, New Delhi
21 July 2016

Department of Ex-Servicemen Welfare
Ministry of Defence



Resettlement and Welfare of Ex-Servicemen

11.1 The Department of Ex-Servicemen Welfare (DESW) formulates various policies and programmes for the welfare and resettlement of Ex-Servicemen (ESM) in the country. The Department has two Divisions viz. Resettlement and Pension and 3 attached offices namely, Kendriya Sainik Board Secretariat (KSB Secretariat), Directorate General (Resettlement) (DGR) and Central Organisation, Ex-Servicemen Contributory Health Scheme, (CO, ECHS). The KSB Secretariat is responsible for the welfare of Ex-Servicemen and their dependents and also for the administration of welfare funds. The KSB Secretariat is assisted in its task by 32 Rajya Sainik Boards (RSBs) and 392 Zila Sainik Boards (ZSBs), which are under the administrative control of respective State Governments/Union Territory Administrations. The office of Directorate General of Resettlement implements various Policies/ Schemes/ Programmes for pre and post retirement training, re-employment and self-employment etc. of ESM. The DGR is assisted in its task by 5 Directorates of Resettlement Zones (DRZs) at each of the 5 Commands. CO, ECHS is responsible for healthcare and medical needs of Ex-Servicemen and their dependents.

Welfare

11.2 KSB Secretariat is the apex body of Government of India, responsible for implementing Central Government policies for rehabilitation and welfare of the war widows/ disabled and retired service personnel and their dependents. The welfare schemes are

implemented through RSBs located in State capitals and ZSBs located at District level. The establishment expenses of these RSBs/ZSBs are shared by the Central and State Governments in the ratio of 75:25 in respect of special category States, namely, Arunachal Pradesh, Assam, Jammu and Kashmir, Meghalaya, Mizoram, Manipur, Nagaland, Sikkim, Tripura, Himachal Pradesh and Uttarakhand; and 60:40 in the case of other States/ UTs. The Central share provided to the States/ UTs towards establishment/ maintenance of RSBs/ ZSBs is reimbursed from the Defence Services Estimate (DSE) budget allocated to KSB Secretariat for this purpose. ₹ 27.11 crore has been disbursed as Central share up to December 31, 2016.

11.3 Sainik Rest Houses (SRHs) have been constructed to provide suitable and affordable accommodation to Ex-Servicemen during their short visits to the State Capital/ District HQs for settlement of their pension cases and other matters like availing facilities of CSD Canteen, hospitals etc. KSB Secretariat shares 50% cost of construction of SRHs out of DSE. The SRHs are required to be maintained by State Governments/ UT Administrations from their own resources/ funds.

Armed Forces Flag Day

11.4 Armed Forces Flag Day is commemorated on 7th December every year across the country to commemorate the sacrifices made by the armed forces personnel for the country. On

this day, token flags are pinned and voluntary contributions collected from public for welfare and rehabilitation of war widows/ disabled, ESM and their dependents.



Officials of KSB Secretariat pinning token flag and collecting donation from President of India on December 7, 2016

Armed Forces Flag Day Fund

11.5 Apart from the DSE Budget, Armed Forces Flag Day Fund (AFFDF) is the major source of funding for welfare and rehabilitation of war widows, ESM and their dependents. Out of the interest earned on the AFFDF Corpus, 7.5% is ploughed back into the corpus and balance is used to fund the welfare and rehabilitation schemes for ESM/ dependents. A sum of ₹ 58.84 lakh has been collected upto December 31, 2016. The corpus of AFFDF is about ₹ 288.23 crore as on December 31, 2016. The Fund is administered by KSB Secretariat under the aegis of its Management Committee headed by Raksha Mantri and Executive Committee headed by Secretary, DESW.

Raksha Mantri's Discretionary Fund (RMDF) Schemes

11.6 Financial assistance is provided to ESM and their dependents from RMDF for their identified personal needs by way of Penury Grant, Children Education and Marriage Grant, Medical Grant etc. Financial assistance of

₹ 19.12 crore has been disbursed under RMDF up to December 31, 2016.

PM's Scholarship Scheme

11.7 To support higher technical/ professional education of dependent wards/ widows of Ex-Servicemen and Ex-Indian Coast Guard, the scheme was introduced in the year 2006. 5500 scholarships are being awarded annually under this scheme to the wards of Ex-Servicemen/ widows to be shared equally between boys and girls. The scheme is funded out of National Defence Fund. The amount of scholarships is ₹ 2,000/- for boys and ₹ 2,250/- for girls per month and is paid annually. An amount of ₹ 20.82 crore has been disbursed to 8103 beneficiaries upto December 31, 2016.

Other Welfare Schemes

11.8 **Financial Assistance for Serious Diseases:** Financial assistance up to 90% and 75% of total expenditure subject to a maximum of ₹ 1.25 lakh (for heart ailments, joint replacement etc.) and ₹ 0.75 lakh per year (for treatment of cancer and dialysis) is provided to non-pensioner PBOR and officers including their dependents, respectively. This scheme is also applicable for the Indian ESM residing in Nepal till ECHS becomes operational in that country. ₹ 17.69 lakh has been disbursed upto December 31, 2016 under this scheme.

11.9 **Financial Assistance for Purchase of Modified Scooter:** Financial assistance of ₹ 57,500/- is provided from AFFDF for procurement of modified scooter for the ESM (with 50% or more disability) who became disabled after retirement from service. ₹ 1,15,000/- has been disbursed upto December 31, 2016.

11.10 **Grant to War Memorial Hostels (WMH):** The WMHs grant of ₹ 1350/- per month per

child is provided to the wards of war widows/ war disabled. ₹ 36.23 lakh has been disbursed upto December 31, 2016.

11.11 Grant to Paraplegic Rehabilitation Centres (PRCs): In addition to ₹ 30,000/- per annum per inmate, annual grant of ₹ 20.00 lakh and ₹ 10.00 lakh is provided for upkeep/ maintenance of PRCs at Kirkee and Mohali respectively, which are being run as autonomous organizations for rehabilitation of paraplegic/ tetraplegic ESM.

11.12 Grant to St. Dunstan's After Care Organisation: St. Dunstan's After Care Organisation at Dehradun for blinded soldiers, sailors and airmen provides psychological support to overcome the shock of blindness and also facilitates vocational training to enable the blinded ESM to get rehabilitated in society, besides providing after care services. Annual grant of ₹ 14.00 lakh is provided every financial year to the organization.

11.13 Reservation of Seats in Medical/ Dental Colleges: KSB Secretariat is allotted some MBBS & BDS seats by Ministry of Health and Family Welfare as Government of India Nominee for wards of ESM. During 2016-17, 20 seats have been allotted.

Major Highlights

11.14 Annual meeting of Kendriya Sainik Board was held on July 21, 2016. Raksha



XXX Annual Meeting of Kendriya Sainik Board held on July 21, 2016

Mantri chaired the meeting. The main focus of the meeting was to give impetus to welfare, rehabilitation and resettlement of ESM and their dependents and issues pertaining to welfare of ESM were discussed.

11.15 A workshop under Swachh Bharat Mission was organised on December 14, 2016 at Manekshaw Centre, New Delhi during Swachhta Pakhwada (December 1 to 15, 2016). On the occasion, subject matter specialists explained the history of efforts made towards cleanliness in India, and suggested the methods which can be adopted to realize the dream of "CLEAN INDIA by 2019" under Swachh Bharat Mission (SBM). The speakers also suggested how to minimize generation of waste and maximize the disposal of the same.



Workshop on Swachh Bharat in Progress

Resettlement

11.16 The main thrust of the Directorate General Resettlement (DGR) is on resettlement, rehabilitation and welfare of ESM. Nearly 60,000 armed forces personnel retire or are released from active service every year. Most of them being in the comparatively younger age bracket of 35 to 45 years, they need a second career to support their families. These personnel constitute a valuable, disciplined, well-trained, dedicated and talented pool available for nation building. Resettlement is sought to be achieved through the following:

- Upgrading their skills by imparting necessary training to prepare them to take on new assignment/ jobs and assisting ESM in finding re-employment.
- Constant endeavor to provide employment opportunities in government/ quasi government/ public sector organizations.
- Pro-active action to facilitate re-employment of ESM in the Corporate Sector.
- Providing jobs through schemes for self-employment.
- Assistance in entrepreneurial ventures.

Training Programmes

11.17 DGR has been entrusted with the responsibility of enabling a smooth transition of the retiring armed forces personnel to second career. This is done by arming the retirees with the skills required to excel in the corporate world through resettlement courses. DGR selects the institutes and courses with this aim. In July 2015, Ministry of Defence signed a memorandum of understanding (MOU) with Ministry of Skill Development & Entrepreneurship (MSDE) to ensure that all skill training courses by DGR are aligned to the National Skill Qualification Framework (NSQF). From the earlier conceived programme for 2016-17, only those courses that were certified by government bodies conforming to National Skill Development Corporation (NSDC) protocol were continued beyond June 2016. From June 2017 onwards, all courses by DGR would be minimum NSQF Level 5 (except when a change of field is involved for the individual, where it would be level 4). MSDE has also bought out "Common Norms" related to skill training with respect to standards and costs. An MOU was also signed by Ministry of Defence with Skill Development Network Trust (SDNT) of the

Wadhvani Foundation to assist Ministry of Defence in achieving the transition and targets in skill training for defence personnel. These initiatives have helped in raising the standards of training courses by DGR, apart from ensuring standardization of costs.

11.18 Officers' Training: All Officers' Training courses envisaged for 2016-17 were revised and only those courses that are conducted by government/ autonomous institutes of government were continued. Officers' courses would be short duration certificate courses (3-6 Months) in management, apart from select skill training courses. The fee for officers' courses is shared by government and the individual officers in the ratio of 60:40.

11.19 JCOs/ ORs & Equivalent Training: DGR conducts diploma/certificate courses for JCOs/ ORs and equivalent for a maximum duration of upto maximum one year. These courses are run at accredited institutes and 100% of the course fee is paid by the Government. Till March 2016, training courses for JCOs/ ORs/ Equivalent were being conducted both at Regimental Centers (4 Weeks duration during the retirement or pension drill of an individual) and at training Institutes pan India. From April 2016 onwards, training courses at Regimental Centers have been stopped and process reviewed. Army is bringing in the transition to conduct Recognition of Prior Learning (RPL) Courses at various Regimental Centers, conforming to the NSDC protocol. DGR is confining its role to conduct of training courses at Training Institutes pan India. From June 2016 onwards, only those courses conducted by government institutes or certified by government bodies/ universities or certified by NSDC with minimum NSQF level 4, were allowed to be conducted. With the enhanced standards and standardization of skill training for JCO/ ORs, better job/ resettlement prospects are expected to ensue.

11.20 The details of training imparted from January 2016 to December 2016 are as under:

- (a) Officers at Institutes - 642
- (b) JCOs/ ORs at Institutes - 4,849
- (c) JCOs/ ORs at Regimental Centers - 6,416
- (d) Total for calendar year 2016 - 11,907

Employment Opportunities

11.21 **Employment Opportunities in Central Government for ESM:** Central Government has provided reservations in Government jobs for ESM towards their resettlement in Civil life to the following extent:

- (a) 10% of the vacancies in the posts up to the level of the Assistant Commandant in all para-military forces.
- (b) 10% of the vacancies in Group 'C' Direct Recruitment posts; and 20% of the vacancies in Group 'D' Direct Recruitment posts in Central Government Departments.
- (c) 14.5% vacancies in Group 'C' posts and 24.5% vacancies in Group 'D' posts (including 4.5% for Disabled ESM and dependents of those killed in action) in Central Public Sector Undertakings.
- (d) 14.5% vacancies in Group 'C' posts and 24.5% vacancies in Group 'D' posts (including 4.5% for Disabled ESM and dependents of those killed in action) in Public Sector Banks.
- (e) 100% in Defence Security Corps.

DGR is the nodal agency for compiling the data and monitoring the implementation of these reservations.

11.22 **Registration for Employment:** DGR is primarily responsible for assisting Defence

Officers to settle down by providing adequate employment opportunities after their retirement. Ex-Servicemen are registered with DGR (subject to fulfilling conditions) for further empanelment to various schemes of DGR like General employment (Jobs in Government/ PSUs/ Corporate), Security Agency Scheme, CNG Scheme, COCO Scheme, Petrol Pump Management and Coal transportation Company etc. Statistics of personnel sponsored for permanent/contractual jobs through DGR and RSB except self-employment schemes is as under:

- (a) **Through DGR :** 5,027 (as on December 15, 2016)
- (b) **Through RSB/ ZSB :** 17,743 (as on June 30, 2016)

11.23 **Security Agency Scheme:** The DGR empanels/ sponsors ESM run private security agency for providing security guards to various Central Public Sector Undertakings (PSUs). The scheme offers good self employment opportunities to ESM. Many Government Offices, PSUs, Banks, Corporates and Educational Institutes etc. are seeking security cover from DGR empanelled security agencies.

11.24 The number of ESM employed during 2016 under the scheme till December 16, 2016 are 20,625 and a total of 316 Security Agencies have been empanelled.

Schemes for Self Employment

11.25 **Coal Loading and Transportation Scheme:** The scheme is administered based on an MOU signed between Coal India Limited (CIL) and DGR. In this scheme, the ESM (officer) forms an ESM company consisting of three ESMs (officer) and registered under Company Act, 1956 (Now Companies Act, 2013). The company engages in transportation and loading

of coal. The service is provided to all the subsidiaries of CIL. A total of 13 ESM companies were sponsored in the year 2016 benefitting 65 ESM officers, 203 ESMs and widows/ disabled soldiers.

11.26 Mother Dairy Milk Booths and SAFAL Vegetable Shops: Mother Dairy India Pvt. Ltd. provides ready built and fully equipped milk shops/ booths to ESM (JCOs and ORs), while its fruit and vegetable shops (Safal) are opened for the ESM and their dependent sons in the NCR. As of now, 798 milk booths are being run by Ex-Servicemen. In the year 2016, 296 Mother Dairy milk booths and SAFAL (fruit & vegetable) booths have been allotted to the deserving Ex-servicemen.

11.27 Due to close association and cooperation between Mother Dairy and DGR, Mother Dairy ran a multimedia advertisement campaign on January 26 and August 15, 2016, highlighting the role of ESM called Hero Next Door Campaign. The campaign generated awareness among the public that each and every milk booth in NCR is being run by the Ex-Servicemen. In order to further strengthen their relationship with veterans, Mother Dairy contributed ₹ 10 lakh to the Armed Forces Flag Day Fund. The cheque was handed over by MD, Mother Dairy to Secretary DESW.



MD, Mother Dairy Handing Over the Cheque to Secretary DESW

11.28 Management of CNG Stations in Delhi NCR (excluding Gurugram) and MNGL Stations in and around Pune: This scheme is primarily for Ex-Servicemen (Officers) wherein interested ESM(O) are sponsored by DGR to IGL/ MNGL for a period of 5 years for managing company owned company operated (COCO) CNG stations. This year, 9 ESM (Officers) were selected for managing CNG stations of IGL in Delhi and 3 ESM (Officers) for MNGL stations in Pune.

11.29 Allotment of Army Surplus Class V 'B' Vehicles: New generation of vehicles are now being allotted under this scheme. 37 applications of ESM were registered and processed for allotment of vehicles as per availability.

11.30 Oil Product Agency (OPA) Scheme: Under this scheme, ESM (officers) are sponsored by DGR as service provider for operating retail outlets of IOCL and BPSC under company owned company operated (COCO) scheme. Fourteen ESM (O) were sponsored during this period for LPG distributorship.

11.31 Corporate Initiative: With an aim to generate maximum employment opportunities for ESM in Corporate Sectors, DGR has signed an MoU with CII. Accordingly, Job Fairs were organized at Bengaluru, Pune and Ambala during the year. A large number of job openings were received and processed during these fairs. In addition, meetings were held with few leading Corporate Houses of the country to generate awareness about the potentials of ESM and seek incentivized job openings. An agreement has been signed with Uber to generate micro entrepreneurship.

11.32 Publicity and Awareness Campaign: With a view to sensitise the ESM about various activities and initiatives, advertisements were

released in various newspapers. In addition, two issues of the Sainik Punarvas Patrika (January 2016 and September 2016 issues) were published, containing success stories of ESM and covering the activities undertaken by DGR for the resettlement of ESM. Information Brochures containing details of various activities including initiatives and policy for training, self-employment and employment of ESM were also published. Additionally, representatives of DGR participated in an All India Radio live phone-in programme relating to welfare and resettlement activities for ESM, wherein the queries of ESM were replied to.

Health Care

11.33 Ex-Servicemen Contributory Health Scheme (ECHS) was launched with effect from April 1, 2003. The Scheme was expanded in October 2010. ECHS aims to provide quality healthcare to Ex-Servicemen (ESM) and their dependents through a network of ECHS Polyclinics, Service medical facilities and civil empanelled/ Government hospitals spread across the country. The Scheme has been structured on the lines of Central Government Health Scheme (CGHS) and is financed by the Government of India. Endeavour is to ensure cashless treatment as far as possible by utilising the empanelled hospitals for the veterans and their dependents.

11.34 Policy framework for the Scheme is laid down by the Government and executive control of the same is exercised by the Department of Ex-Servicemen Welfare. The Scheme is managed through the existing infrastructure of the Armed Forces so as to minimize the administrative expenditure.

11.35 ECHS Polyclinics are designed to provide 'Out Patient Care' that includes consultations, essential investigation

and provision of medicines. Specialized consultations, investigations and 'In Patient Care' (Hospitalisation) is provided through spare capacity available in Service hospitals, all Government hospitals and also through civil medical facilities empanelled with ECHS.

ECHS Network

11.36 **Central Organisation:** At the apex level is the Central Organisation, ECHS, located in Delhi, which functions under the Chiefs of Staff Committee through the Adjutant General in the Integrated Headquarters of Ministry of Defence (Army). The Central Organisation is headed by a serving Major General.

11.37 **Regional Centres:** There are 28 Regional Centres spread across the country. The Regional Centres function under the Central Organisation, ECHS and the existing chain of command of the Service Headquarters. These Regional Centres oversee operationalisation and functioning of ECHS Polyclinics placed under them and also take necessary action for empanelment of civil hospitals with ECHS.

11.38 **Polyclinics:** A total of 432 ECHS Polyclinics including six Polyclinics in Nepal have been sanctioned by the Government. Out of 426 ECHS Polyclinics sanctioned in India, 421 have been operationalised as on December 2016. These Polyclinics are fully manned by hired trained professionals with certain vacancies reserved for ESM. The Station Headquarters are responsible for hiring of staff and ensuring smooth functioning of the Polyclinics as also for timely acquisition of land and construction of ECHS Polyclinic buildings.

Present Status

11.39 **ECHS Membership:** The total beneficiaries under the Scheme are approximately 50 lakh.

11.40 **Polyclinics and Civil Empanelled Medical Facilities:** 286 additional medical facilities have been enlisted with ECHS in last one year. Now the Scheme has 2247 civil hospitals empanelled with it, for providing cashless treatment to ECHS beneficiaries. However, in case of emergency, members are permitted to avail medical treatment at non-empanelled hospital on payment. Their medical treatment bills are reimbursed at approved (CGHS) rates.

11.41 **Budget:** Administrative expenditure in ECHS is very low, as the Scheme utilizes existing infrastructure of the Services and the medicare delivered at Polyclinic is through 100 percent contractual employees. Budget allotment to ECHS has grown over a period of time. The allotment for FY 2016-17 is ₹ 2,363.54 crore.

11.42 **ECHS Seminar:** The ECHS Seminar and Regional Centre Directors Conference, a biennial Army level event, was held under the aegis of the AG's Branch, IHQ of MoD (Army). The event was organized on February 10 and 11, 2016 at the Manekshaw Centre, New Delhi, with an aim to harmonize the efforts of various stakeholders to surmount the challenges being faced by the Scheme.

Other Achievements during the Last One Year

11.43 Summary of other major achievements in the last one year is as under:

(a) **On-line Processing of Individual's Reimbursement Claims:** Processing of all reimbursement claims of the individual beneficiaries have been migrated to on-line system. This has not only enhanced the transparency, but has also considerably reduced the processing time thus facilitating early release of payments.

(b) **On-line Audit Module:** Pilot project for online post audit of bills by CDA was started at Regional Centre ECHS Hyderabad and CGDA has since instructed for its extension to pan India w.e.f. April 11, 2016.

(c) **Revision in remuneration of ECHS Staff:** The remuneration of ECHS contractual staff has been upgraded twice since May 2014. The fixed minimum salary is ₹ 13,455 per month and maximum salary is ₹ 80,000 per month.

(d) **Reimbursement of treatment at Government Hospital:** Sanction has been accorded for reimbursement of treatment taken at Government Hospital at actual rates instead of CGHS rates.

(e) **Empanelment of Endolite and Ottobock Prosthesis Centres:** The order for empanelment of two Prosthesis Centres viz. Endolite and Ottobock along with all its sub centres across the Country with ECHS for provisioning of repair and fitment of artificial limbs at the discounted rate to ECHS beneficiaries has been issued on November 3, 2016.

(f) **Authorization of Digital Signature Certificate (DSC) for OIC Polyclinics:** The case for authorization of Digital Signature Certificate for ECHS Polyclinics has been approved.

11.44 **ECHS Toll-Free Helpline:** ECHS Toll free Helpline has been made available for all ECHS members at 1800-114-115 for resolving queries on Membership, Treatment and Employment. The service is available from Monday to Friday on all working days from 0900-1700 hours.

11.45 **ECHS Website:** All information regarding ECHS, including list of empanelled facilities, forms for membership and latest policies etc. are available on www.echs.gov.in.

Pension Reforms

11.46 Casualty Award on the basis of Fitment Table: Government vide MoD letter No. 16(01)/2014/(Pen/Pol) dated 18.5.2016 has revised the rates of Casualty Pensionary Awards of all Pre-2006 Disability Pensioners/ Family Pensioners with effect from 1.1.2006 on the basis of the minimum of fitment table for the rank in the revised Pay Band as indicated under fitment table annexed with SAI 1/S/2008, SAI 2/S/2008 & SAI 4/S/2008 as amended and equivalent instructions for Navy and Air Force.

11.47 Enhanced rate of Ordinary Family pension for Pre-2006 on the basis of Fitment Table: Government letter No. 1(14)/2012-D(Pen/Pol) dated June 14, 2016 regarding revision of enhanced rate of Ordinary Family Pension in respect of Pre-2006 Armed Forces Pensioners has been issued. It has been decided that the minimum guaranteed enhanced rate of Ordinary Family Pension of all Pre-2016 pensioners may be revised w.e.f January 1, 2006 on the basis of the minimum of fitment table for the rank in revised Pay Band as indicated under fitment tables. The revised consolidated enhanced rate of Ordinary Family Pension w.e.f January 1, 2006 in respect of pre-2006 Defence Forces Family pensioners shall not be less than 50% of the minimum of the fitment table for the rank in the revised Pay Band. In case where full revised pension is otherwise not authorized to a retired employee in terms of 6th CPC order, the revised enhanced rate of Ordinary Family Pension shall be restricted to that amount. The amount of revised enhanced rate of Ordinary Family Pension in no case shall be less than thirty percent of the minimum of fitment table for the rank or thirty percent of the minimum of fitment table in the case of HAG and above.

11.48 Method of calculation of Disability Element in the cases of two types of disabilities: Government vide MoD letter No.

16(02)/2015/D(Pension/ Policy) dated August 8, 2016 has issued order for method of calculation of disability element in case of two different types of disabilities i.e. normal disability and battle casualty in the following manner:

- (a) **Discharge Cases:** Cases where Armed Forces Personnel are discharged from service on completion of prescribed terms of engagement, the higher element, i.e. the War Injury Element (WIE) shall be deducted from the composite assessment and paid in full, irrespective of the percentage of assessment. The remainder shall be calculated as normal Disability Element (DE).
- (b) **Invalidment Cases:** Cases where Armed Forces Personnel are invalided out on medical ground which is attributable to or aggravated by military service, the composite assessment and war injury element will be rounded off in terms of para 7.2 of Ministry of Defence letter No. 1(2)/97/D(Pen-C) dated January 1, 2001. Further, rounded percentage of War Injury Element (WIE) shall be deducted from the rounded percentage of composite assessment. The remainder shall be calculated as normal Disability Element (DE).

11.49 Processing of Second Appeal against rejection of claim for disability: Government vide MoD letter No. 16(2)/2008/D(Pen/Pol) dated August 9, 2016 has issued orders for processing of Second Appeal against rejection of claim for disability pension/element etc., where there is no consensus in the second Appellate Committee. It has been decided that the cases of Second Appeal in which there is no consensus among the members of Second Appellate Committee on Pension will be submitted by the Chairman of Second Appellate Committee on Pension to the Department of

ESW for examination and obtaining the final decision of Raksha Rajya Mantri.

11.50 Delinking of 33 years qualifying service for revised pension w.e.f 1.1.2006 for Pre-2006 retirees: Government vide MoD letter No. 1(2)/2016/D(Pen/Pol) dated September 30, 2016 has issued order for revision of pension of Pre-2006 Pensioners (JCOs/ ORs and Commissioned Officers) by delinking of qualifying service of 33 years. It has been decided that w.e.f. January 1, 2006, revised consolidated pension and family pension of Pre-2006 armed forces pensioners shall not be lower than 50% and 30%, respectively of the minimum of the pay in the Pay Band plus Grade Pay corresponding to the pre-revised scale from which the pensioner had retired discharged/invalided out/died including Military Service Pay and X Group pay, if any, without pro-rata reduction of pension even if they had rendered

qualifying service of less than 33 years at the time of retirement.

11.51 Implementation of 7th CPC for Pre-2016: Government vide MoD letter No. 17(01)/2016-D(Pen/Pol) dated October 29, 2016 has issued order for implementation of the 7th CPC recommendations for Pre-2016 retired Defence Forces personnel. The matter relating to methodology for calculation of disability element has been referred to the Anomalies Committee. The disability element which was being paid to Pre-2016 Defence Pensioners as on December 31, 2015 will continue to be paid till decision on the recommendations of Anomalies Committee is taken by the Government.

11.52 Report of One Member Judicial Committee on OROP: One Member Judicial Committee on OROP has submitted its Report on October 26, 2016.



केन्द्रीय सैनिक बोर्ड की 30^{वीं} बैठक 30th MEETING OF KENDRIYA SAINIK BOARD

विज्ञान भवन, नई दिल्ली
21 जुलाई 2016

Vigyan Bhawan, New Delhi
21 July 2016

Department of Ex-Servicemen Welfare
Ministry of Defence



COOPERATION BETWEEN ARMED FORCES AND CIVIL AUTHORITIES



Cooperation Between Armed Forces and Civil Authorities

12.1 Apart from the main responsibility of defending the borders of the country, the Armed Forces render timely assistance to civil authorities for the maintenance of law and order and/ or essential services as also in rescue and relief operations during natural calamities. The details of assistance provided by the Armed Forces during the period under report are given in the succeeding paragraphs.

INDIAN ARMY

Maintenance of Law & Order

12.2 **Haryana:** Consequent to requisition by the Civil Administration in view of deteriorating law and order situation in Haryana due to Jat agitation, 56 Army Columns were deployed for maintenance of law and order in 11 districts of Haryana. These Columns were deployed with effect from February 19, 2016 and were de-requisitioned on February 29, 2016.

12.3 **Tinsukia (Assam):** A requisition was received from Deputy Commissioner, Tinsukia District on April 11, 2016 to control violent mob at Pengri near Tinsukia District. Three Army Columns were deployed for Aid to Civil Authority and the situation was brought under control. Columns were de-requisitioned on April 14, 2016.

12.4 **Rajouri (J&K):** A requisition was received from Civil Administration on September 14, 2016. Three Army Columns were deployed at Old Bus Stand, Gujjar Mandi Chowk & Panja

Chowk in Rajouri. The Columns were de-requisitioned on September 21, 2016.

Flood Relief Operations

12.5 **Satna (MP):** On July 7, 2016 for flood relief operations due to flooding in River Tamas, one Engineer Task Force and one Army Column were deployed. 30 Civilians were rescued.

12.6 **Jorhat (Assam):** To provide assistance in a flood like situation due to breach in Bhagdoi Nala (12 km North to Jorhat) in general area Bongaigaon (Malowkhat), one Army Column was deployed from July 8-11, 2016 for flood relief operation. About 200 Civilians were rescued in this operation.

12.7 **Baran (Rajasthan):** On July 11, 2016 for flood relief operations, two Columns were deployed during which 15 Civilians were rescued.

12.8 **Katihar (Bihar):** On July 27, 2016 for Balrampur, Kadwa and Barsoi Villages, two Army Columns each were deployed for flood relief operation. 300 marooned persons were rescued during the operation.

12.9 **New Bongaigaon (Assam):** On July 26, 2016 one Army Column was deployed in New Bongaigaon for flood relief operations during which 50 marooned persons were rescued.

12.10 **Chirang (Assam):** On July 26, 2016 one Army Column was deployed for flood

relief operations during which 190 marooned persons were rescued.

12.11 Pali (Rajasthan): On August 9, 2016 one Army Column and one Engineer Task Force from Jodhpur were deployed for rescue operation arising out of heavy rainfall. 34 civilians were rescued.

Other Types of Assistance

12.12 Kollam (Kerala): On April 10, 2016, for rescue and relief operations due to fire incident at Puttingal Temple, Kollam (Kerala), two medical teams with one Ambulance, two Doctors, two Nursing Assistants and four Ambulance Assistants each were deployed.

12.13 Pukhrayan, Kanpur: Train No. 19321 Indore-Patna Express was derailed on November 20, 2016 near Pukhrayan, Kanpur Dehat, Uttar Pradesh. 14 coaches of the train were derailed out of which three coaches were severely damaged. On requisition from Civil Administration, two Army Columns, three Medical Teams alongwith specialists & seven ambulances, one Administrative Column & nine Recovery Columns were deployed for rescue and relief operation. Five persons were rescued alive and about 45 bodies were recovered. Approximately, 50 persons were provided medical aid and food was distributed to about 500 persons.

12.14 Karcham (Himachal Pradesh): An artificial lake of size 1000 x 100 meters had formed at Village Urni, near Karcham in Kinnaur District of Himachal Pradesh due to a landslide. The water level was touching the bridge leading towards Karcham Garrison. The Civil Administration and PWD officials carried out dredging/ blasting of the slide area in an attempt to create greater space for the water to flow out. However, these attempts were not successful. Deputy Commissioner, Kinnaur

requested for Army's assistance on June 21, 2016 to resolve the issue. One Engineer Team was deployed in advisory role.

INDIAN NAVY (IN)

12.15 Fire Incident at Puttingal Temple, Kerala: During the fire incident on April 10, 2016 at Puttingal Temple, Kerala, along with medical teams deployed by Army, IN immediately deployed two Advanced Light Helicopters with a nine member medical team along with supplies and equipment to the scene of fire. IN ships Sunayna, Kabra and Kalpeni also reached Kollam on the same day with medical teams and 400 Kgs. of medical supplies. The two ALH flew extensively for undertaking Casualty Evacuation and providing medical assistance during the incident.



IN ALH Deployed at Kollam during the Fire Incident

12.16 Fire Incident at Visakhapatnam: A major incident of fire was reported at Duvvada SEZ, Visakhapatnam on April 26, 2016, resulting in the burning of 12 Bio-diesel tanks. IN immediately deployed nine Naval fire tenders, two medical teams with ambulances and Naval Quick Reaction Teams (QRTs) to the site. Additionally, IN Dornier aircraft carried out aerial recce of the fire affected area and Chetak helicopters dropped Dry Chemical Powder Fire Extinguishing Balls to assist in extinguishing the fire.

12.17 MEDEVAC from Lakshwadweep & Minicoy Islands: On June 24, 2016, one each Dornier and ALH were deployed to L&M Islands for Medical Evacuation of critical patients from Kiltan and Agatti islands to Kochi.



MEDEVAC from L&M Islands

12.18 Assistance for Heart Transplant: On July 18, 2016, a request was received from District Administration, Ernakulum for transportation of a harvested heart. Accordingly, a Dornier was launched on July 19, 2016 from INS Garuda to Thiruvananthapuram with a team of Doctors and medical equipment. The doctors were then flown back to Kochi on the same day with the harvested heart. The assistance provided by Navy proved crucial for the heart transplant operation.



Transportation of Harvested Heart by Dornier to Kochi

12.19 Diving Assistance for Missing Personnel at Raigad, Maharashtra: A bridge on Savitri river had collapsed on August 3, 2016 at Mahad, Raigarh District in Maharashtra due to heavy



Naval Divers undertaking Search in river Savitri



Recovery of State Government Bus from the River

rains and a few vehicles fell off, leading to loss of lives. IN deputed a specialist diving team of 22 personnel with 3 Gemini craft and two Sea King helicopters for the search operations from August 3-14, 2016. IN diving team assisted in recovery of two State Government buses, an SUV, and 14 bodies drowned in the river.

12.20 HADR Exercise – Sahayata: The annual joint disaster relief exercise ‘Sahayata-2016’ was conducted in September 2016 at Bhuj, Gujarat. This exercise saw coordinated rescue and relief operations by IN ships Delhi and Subhadra, post simulated major earthquake in Western region. The ships were deployed for casualty evacuation sorties and for providing medical aid and assistance.



Humanitarian Assistance & Disaster Relief Exercise-SAHAYATA

12.21 Annual Joint HADR Exercises: During CCC-2015, the Prime Minister had directed that ‘Annual Joint HADR Exercises’ be conducted by the Services incorporating stakeholders from Central Police Organisations and Civil Administration down to Municipal Corporation. Accordingly, Ex PRAKAMPANA was conducted at Visakhapatnam from August 30 – September 1, 2016 on a ‘Super Cyclone’ contingency. The exercise provided a forum for validation of the disaster management plans of the State

and District Administration, Armed Forces, Paramilitary Forces, and other agencies down to the Municipal level. A Table Top Exercise was conducted involving all participants at Maritime Warfare Centre (Visakhapatnam).



Opening Ceremony of Joint HADR Exercise PRAKAMPANA

12.22 Exercise Jal Suraksha – 2016: Exercise Jal Suraksha 01/16 was conducted from September 7-8, 2016 at Port Blair. All activities and



Relief material loaded onboard IN ships during Ex Jal Suraksha

drills related to Humanitarian Assistance and Disaster Relief (HADR) Operations viz. search and rescue operations, conversion of ship to hospital ship, damage assessment and repair preparation, shifting of personnel/ families, loading of HADR bricks for assistance to civil administration were undertaken. During the exercise, critical supplies and ration bricks were loaded onboard ships to test the effectiveness of the logistics chain.

COAST GUARD

12.23 Rescue of Stranded Personnel in Daman Ganga River: On July 2, 2016, Coast Guard Helicopter ex-Daman airlifted and rescued 10 personnel trapped in Daman Ganga River bordering Silvasa. These personnel were searching for a drowned body in the river, when the water level suddenly increased due to release of water from the dam.



Evacuation of Stranded Personnel by CG Helo

12.24 Rescue of Stranded Personnel at Valsad (Gujarat): On August 2, 2016, a large number of people were stranded on rooftop near Valsad due to sudden rise of water level in Auranga river at Valsad, Gujarat. 2 Coast Guard Helicopters ex-Daman were tasked which rescued 28 stranded personnel by shifting them to safe location.



Evacuation of Personnel trapped on rooftop near Valsad by CG Helo

12.25 Assistance to Vessels inside the Jawahar Dock, Chennai Harbour: On December 12, 2016 landfall at Chennai by very severe cyclonic storm 'Vardah' resulted in cyclonic wind conditions at Chennai harbour. Due to the severe weather conditions and strong winds, berthing hawsers of the ships berthed inside Jawahar Dock parted. Considering the criticality of the situation, Berthing team Ex-Indian Coast Guard Ship (ICGS) Varad was immediately dispatched to assist Chennai Port Trust tug and the 5 distressed vessels at Jawahar Dock Chennai were safely berthed/ secured alongside with the assistance of ICG team.



ICG provided berthing assistance to distressed vessels at Jawahar Dock, Chennai

AIR FORCE

12.26 **J&K Agitation:** To facilitate maintenance of law and order in J&K, IAF was tasked to airlift CAPF (CRPF, SSB and RAF) from various parts of the country to Srinagar. A total of 7184 troops and 299.3 Ton load were airlifted between July 9, 2016 and August 9, 2016.



In aid to civil power

12.27 **Bihar Flood Relief:** Bihar was hit by floods in August 2016. As a part of relief operation, IAF airlifted NDRF teams from Arakkonam, Bhubaneswar and Bhatinda to Bihar. A total of 539 NDRF personnel and 27.3 ton load were airlifted from August 20-23, 2016.

12.28 **Uttarakhand Fire Fighting by IAF:** 11 districts out of 13 districts of Uttarakhand were affected by forest fires since March 2016. The



IAF helicopter in relief operations

worst affected areas were around Nainital, Mukteshwar, Bhimtal, Pauri, Guptkashi, Tehri and Srinagar. The Government reacted by deploying various disaster relief teams, and the IAF was called on April 30, 2016 to assist in the fire fighting efforts. The aerial fire fighting by IAF by deploying Mi 17 V5 helicopters not only helped smother the fire, but also saved precious national assets from being engulfed in such catastrophe. Railway stations, bus stands, villages, factories etc. falling in the path of fire were targeted to prevent them from falling prey to advancing inferno. During these operations, IAF helicopters flew 95 sorties under challenging conditions and saved valuable life, property and natural resources of the country. Fires were brought under control within a week.





NATIONAL CADET CORPS



National Cadet Corps

13.1 The National Cadet Corps (NCC) was established under the NCC Act, 1948. It has completed 68 years of existence. The NCC strives to provide the youth of the country opportunities for all round development with a sense of commitment, dedication, self-discipline and moral values, so that they become responsible citizens of tomorrow. The motto of NCC is “Unity and Discipline”.

13.2 In the year 2010, Government had sanctioned to increase the cadet strength by 2 lakh cadets from 13 lakh to 15 lakh cadets. This expansion is planned in five phases of 40,000 cadets each. Two phases have been completed and the new NCC establishments sanctioned in 3rd Phase on October 27, 2015 are under process of raising. The sanctioned strength as on date is 13,80,000 cadets (upto Phase two of new raisings). The NCC’s presence presently extends across the country covering 683 out of 688 districts and 16,288 institutions.

13.3 Service-wise distribution of enrolled cadet strength as on September 30, 2016 is as under:

Service	Boys	Girls	Total
Army	8,05,363	3,40,258	11,45,621
Navy	56,967	10,233	67,200
Air	54,920	13,557	68,477
Total	9,17,250	3,64,048	12,81,298

13.4 **New Raisings in the 3rd Phase of additional NCC Cadet Strength Sanctioned:** 1 Group HQ, 7 Army Units and 7 Naval Units have been sanctioned by Government on October 27, 2015 for raising in the 3rd Phase. The raisings are currently underway. This will increase the number of NCC Units to 814 and the cadet strength to 14, 20,000. The details are as under:

NCC Units/Est	3 rd Phase
Gp HQ	Jamnagar (Gujarat)
Army Units (Girls)	Jhansi (UP)
Army Unit	Keonjhar (Odisha)
	Rajnandangaon (Chhattisgarh)
	Namchi (Sikkim)
	Nadumkandam (Kerala)
	Palanpur (Gujarat)
R&V Sqn	R&V Regt Navania (Rajasthan)
Naval Units	Porbandar (Gujarat)
	Bhuj (Gujarat)
	Gandhidham (Gujarat)
	Verawal (Gujarat)
	Jamnagar (Gujarat)
	Navsari (Gujarat)
	Thane (Maharashtra)

13.5 Raising of NCC Girls Battalions:

One Girls Battalion at Jhansi (UP) has been sanctioned in the 3rd Phase for raising. Girls are also being encouraged to join the existing mixed Battalions with an aim to increase the girls percentage from the current 28.41% to 30%. This measure has been resorted to in order to motivate more girls to join the Armed Forces and enable more girl cadets to derive the advantages of NCC training.

TRAINING OF NCC CADETS

13.6 **General:** NCC is a premier training organization of the country involved with grooming of the youth. The growing and vibrant NCC alumni strength is testimony to its meaningful existence. In keeping with the changing times, the Training Philosophy was reviewed and the new syllabus became effective from April 1, 2013.

13.7 Training in NCC comprises the following important facets:

- (a) Institutional Training
- (b) Camp Training
- (c) Adventure Training
- (d) Social Service and Community Development Activities
- (e) Youth Exchange Programme.

13.8 **Institutional Training:** The aim of this training is to expose the youth to a regimental way of life and inculcate in them the values of discipline, personality development and orderliness. All enrolled cadets go through the Institutional Training in their respective schools/colleges as per specified syllabi for each wing of NCC.

13.9 **Camp Training:** Camp Training is an important part of NCC curriculum. The camps help in developing camaraderie, team spirit,

dignity of labour, self-confidence and the most important aspect of Unity and Discipline. NCC has also introduced classes on Human Values as part of Personality Development Programme for its cadets. Various types of camps conducted in NCC are as listed below:

(a) **Annual Training Camps (ATC):** Annual Training Camps are conducted at State Directorate level so as to ensure that Junior Division/ Wing (JD/JW) cadets and Senior Division/ Wing (SD/SW) cadets numbering approximately 7.5 lakh attend at least one camp per year. Approximately 1400 such camps are conducted every year.

(b) **National Integration Camp (NIC):** A total of 37 NICs are conducted every year. 24,200 cadets from all States and Union Territories participate in these NICs. 36 NICs have been conducted till date in different parts of the country during current training year. In addition, Special NICs (SNICs) have been conducted at the following places:

(i) **SNIC Srinagar:** A special NIC was conducted at Srinagar from May 25 to June 5, 2016. A total of 170 cadets from all parts of the country participated in this SNIC. The camp was visited by senior military and civil dignitaries including DG NCC.

(ii) **SNIC Peddapuram (Kakinada):** A Special NIC was conducted at Peddapuram from October 10-21, 2016. 300 Cadets, both boys and girls, participated from all States and UTs.

(iii) **SNIC Badabagh (Jaisalmer):** A Special NIC was conducted at Badabagh (Jaisalmer) from October 15 to October 26, 2016. 300 cadets from all over India participated.

- (iv) **SNIC NER:** A national level camp was conducted in Dimapur (Nagaland) from January 4-15, 2017 which was attended by 600 Cadets from all over India.
- (v) **SNIC Port Blair:** A Special NIC has been conducted at Port Blair from February 9-20, 2017 which was attended by 180 cadets.
- (c) **Vayu Sainik Camp (VSC):** Every year an All India Vayu Sainik Camp (AIVSC) for Air Wing SD and SW cadets is organized and conducted for a period of 12 days. This year, the camp was conducted at Barkattula Stadium, Jodhpur under the aegis of NCC Directorate, Rajasthan from October 15-26, 2016. A total of 420 SD boys and 180 SW girl cadets from the 16 State NCC Directorates which have Air Wing Squadrons (except J&K) participated in this camp.
- (d) **Nau Sainik Camp (NSC):** This camp is also organized once a year for Naval Wing SD and SW cadets for 12 days. This year, the camp was conducted at Karwar from October 6-17, 2016. A total of 590 cadets (386 SD and 204 SW) participated in this camp from all 17 State NCC Directorates.
- (e) **Thal Sainik Camps (TSC):** TSC is conducted at Parade Ground, Delhi Cantt. every year for SD and SW. This year, the camp was conducted from September 19-30, 2016. A total of 1360 cadets participated in this camp.
- (f) **Leadership Camps:** These camps are conducted on All India basis. Six Advance Leadership Camps (ALCs) are organized every year. 1800 cadets attended these camps.
- (g) **Rock Climbing Training Camps:** Eight Rock Climbing camps are held every training year to expose the cadets to the basics of rock climbing and to inculcate the spirit of adventure in them. 1080 cadets attended these camps. While four of these camps were held at Gwalior in MP, another four were conducted at Srinagar (Uttarakhand).
- (h) **Republic Day Camp 2017:** Republic Day Camp-2017 was conducted from January 1-31, 2017 at New Delhi. The camp was attended by 2068 cadets from all over India, besides 111 cadets of ten friendly foreign countries with whom NCC has an ongoing Youth Exchange Programme.
- 13.10 **Republic Day Parade:** Two NCC marching contingents and three NCC bands participated in the Republic Day Parade on Rajpath on January 26, 2017.
- 13.11 **Attachment Training:** The NCC cadets derive first-hand experience of immense value through attachment training with the Armed Forces units. During the year, attachments conducted were as under:
- (a) 440 officers and 20,000 cadets including women officers and 560 Senior Wing (SW) cadets attended the attachment training with regular army units.
- (b) 120 Senior Division (SD) cadets underwent attachment training at Indian Military Academy, Dehradun for a duration of two weeks.
- (c) 1000 SW cadets were attached with various Military Hospitals.
- (d) **Air Force Academy:** A total of 100 Air Wing NCC cadets (76 SD and 24 SW) from the 16 State NCC Directorates (except J&K) underwent attachment training with Air Force Academy, Dundigal, for 13 days in June and December, 2016.

- (e) **Various Air Force Stations:** 20 Associate NCC Officers (ANOs) and 200 Cadets (SD only) of Air Wing were attached to various Air Force Stations for a period of 14 days.

13.12 **Microlite Flying:** Microlite flying is being conducted in NCC with a view to give air experience to the Air Wing NCC cadets (SD/SW). At present Microlite flying facilities are provided at 50 NCC Air Squadrons across all States of the country. 110 new Microlite aircraft are being inducted now. New Microlites induction has commenced from October, 2016.

13.13 **Pre-Commission and Refresher Courses for Air Wing ANOs:** 3 Pre-Commission Courses of 8 weeks duration and 3 Refresher Courses of 4 weeks duration each are conducted every year at Air Force Station Tambaram.

13.14 **Naval Ship Attachment:** 294 cadets of Naval Wing embarked onboard Naval Ships at Mumbai for training and attachment for a period of 12 days. Cadets were imparted intensive naval training in various naval subjects and got opportunity to see naval exercises at sea.

13.15 **Foreign Cruises:** 10 Cadets and 1 supervisory staff visited Port of Phuket (Thailand), Yangon (Myanmar) and Chittagong (Bangladesh) from October 1 to November 21, 2016 on board Naval Ships.

13.16 **Naval Academy Attachment Training:** Annual Training Camp for 170 SW cadets was conducted from January 14-25, 2017 at Indian Naval Academy Ezhimala.

13.17 **Technical NCC Camp for Naval Wing:** 75 SD and 25 SW Cadets from Engineering Colleges at Chennai attended the Annual Technical Camp from August 12 to 16, 2016. The cadets were taken to Naval Engineering Establishments at INS Valsura, Shivaji and Naval Dockyard at Mumbai on study tour.

ADVENTURE TRAINING

13.18 **All India Sailing Regatta at Chilka:** 51 SD and 50 SW Cadets from all 17 Directorates participated in All India NCC Sailing Regatta conducted at INS Chilka from November 4-11, 2016.

13.19 **Sailing Expedition:** Sailing Expedition is an interesting feature of the Naval Training. Each NCC Directorate undertakes a minimum of one sailing expedition for a period of 12 days covering a total distance of 400 to 500 kms. 40 to 60 cadets from each Directorate participate in the event. During Sailing Expedition, the cadets get practical training in Boat Pulling and Sailing. They face and overcome the hazards of change in weather conditions. 12 expeditions were conducted by different NCC Directorates in 2016-17.

13.20 **Scuba Diving:** Scuba Diving Camps for 100 NCC cadets were conducted at Delhi, Kochi, Vizag, Mumbai, Goa/ Karwar, Chennai/ Port Blair and Kolkata with assistance from the Naval Diving Teams of Indian Navy.

13.21 **Wind Surfing/ Kayaking:** Cadets of Naval Wing were also trained and exposed to the basic skills of Wind Surfing and Kayaking.

13.22 **Mountaineering Expeditions:** NCC undertakes two expeditions every year (one for girls and one for boys). This year nine girl cadets with one lady army officer and one Girl Cadet Instructor scaled Mt. Everest in May, 2016. Seven boy cadets scaled Mt. Bhagirathi-II in September, 2016.

13.23 **Trekking Expedition:** A total of 28 trekking expeditions were conducted by NCC Directorates during 2016 with total participation of 14000 cadets.

13.24 **Para Basic Courses:** In the year 2016, 40 boy and 40 girl cadets were nominated for Para Basic course held at Para Training School, Agra.

13.25 **Cycle and Motor Cycle Rallies:** A number of cycle and motorcycle rallies are conducted by different State NCC Directorate to spread the message of peace, harmony and national integration and educate the rural populace on health, community development and eradication of social evils.

13.26 **Desert Camel Safari:** Desert Camel Safari was conducted by Rajasthan Directorate in the deserts of Jaisalmer. In 2016, 22 foreign cadets (12 from Kazakhstan and 10 from Singapore) along with 20 Indian cadets participated in Desert Camel Safari from November 18-29, 2016.

13.27 **Sea Sorties:** In the year 2016, 710 cadets, took part in 7 sea sorties with Indian Navy.

YOUTH EXCHANGE PROGRAMME (YEP)

13.28 **Out-Going YEP Visits:** The details of YEP visits undertaken during the year 2016-17 are given below:

S. No.	Country	Officers	Cadets
(a)	Singapore	4	20
(b)	Russia	2	25
(c)	Sri Lanka	5	18
(d)	Bhutan	2	10
(e)	Bangladesh	2	20
(f)	Vietnam	2	13
(g)	Maldives	1	4
(h)	Kazakhstan	3	24
(i)	Nepal	2	12
	Total	23	146

13.29 **In-Coming YEP Visits:** The details of incoming YEP visits by foreign delegations are as follows:

S. No.	Country	Officers	Cadets
(a)	Singapore and Kazakhstan NCC cadets for Desert Safari	4	22
(b)	Sri Lanka (Shivaji Trail Trek)	2	8
(c)	Delegation from 10 foreign countries namely Bhutan, Kazakhstan, Bangladesh, Singapore, Nepal, Sri Lanka, Vietnam, Russia, Kyrgyzstan and Maldives attended Republic Day Camp (RDC) – 2017.	17	111
(d)	Heads of Departments (HODs) from Bangladesh, Nepal, Sri Lanka, Singapore, Kazakhstan, Vietnam, Bhutan and Russia	7	-
	Total	30	141

SOCIAL SERVICE AND COMMUNITY DEVELOPMENT

13.30 **General:** Social Service and Community Development activities are undertaken in NCC with the aim of making cadets imbibe the qualities of selfless service to the community, dignity of labour, importance of self help, need to protect the environment and to assist in upliftment of weaker sections of the society. This is carried out through programmes involving Swachh Bharat Abhiyaan, adult education, tree plantation, blood donation, visit to Old Age Homes, Orphanages, slums, village upliftment and various other social schemes. Major

activities in which NCC cadets participated are given in subsequent paras.

13.31 Tree Plantation: NCC cadets plant saplings and thereafter maintain them in conjunction with the concerned State Department/ Colleges/ Schools and Villages. This year, as part of environment protection and preservation drive, cadets planted 97,742 saplings all over the country.

13.32 Blood Donation: NCC cadets have been donating blood as voluntary service whenever needed by Government Hospitals/ Red Cross. This year 2,06,999 NCC cadets voluntarily donated blood.

13.33 Old Age Homes: 100 cadets provided their services to old age homes.

13.34 AIDS Awareness Programme: NCC cadets participate actively in the AIDS/ HIV awareness programme and are carrying out AIDS awareness programmes throughout the country. Lectures and interactive sessions on HIV/AIDS are also being conducted during various camps. AIDS awareness day was celebrated on December 1, 2016. About 58,770 NCC cadets from all 17 Directorates participated.

13.35 Anti Dowry and Anti Female Foeticide Pledge: NCC cadets all over the country took a pledge on Anti Dowry and Anti Female Foeticide. Approximately 58,049 NCC cadets participated in rallies and awareness campaigns.

13.36 Anti Drug Rally: Approximately 1,03,356 NCC cadets from all over the country participated in Anti drug rallies organized in major cities and towns in the country.

13.37 Pulse Polio Immunisation: NCC cadets also participated in numerous Polio eradication

programmes launched by the Government all over the country as per National schedule. Approximately 36,756 NCC cadets actively participated

13.38 Anti Leprosy Drive: NCC cadets have launched anti-leprosy drive throughout the country and are helping various voluntary/ Government Organisations in this field.

13.39 Cancer Awareness Programme: Approximately 44,961 NCC cadets actively participated in Cancer Awareness Programme organized in various cities.

13.40 Anti-Tobacco Drive: Approximately 1,03,356 NCC cadets from all NCC Directorates actively participated in 'NO TOBACCO DAY' observed on May 31, 2016. On this day, all State NCC Directorates organized numerous rallies/ street shows/ plays by NCC cadets to spread awareness among masses about the ill effects of Tobacco.

13.41 National Voters' Day: Approximately 16,053 NCC cadets from all NCC Directorates actively participated in National Voters' day observed on January 25, 2016. On this day, all State NCC Directorates organized numerous rallies/ street shows/ plays by NCC cadets to spread awareness among masses about importance of voting for a healthy democracy.

13.42 National Youth Day (January 12, 2017): Approximately 3 lakh cadets spread awareness about Digital Payments among 18 lakh youth/ citizens.

13.43 The NCC observes seven days of UN observances to promote awareness about various social causes amongst masses. These are now part of regular NCC social service and

community development activities and are as follows:

S.No.	Event	Date	Number of cadets participated
(i)	World Forestry Day	March 21, 2016	3,25,596
(ii)	World Health Day	April 7, 2016	25,000 (approx.)
(iii)	Earth Day	April 22, 2016	36,840
(iv)	Anti Tobacco Day	May 31, 2016	1,03,356
(v)	International Day against Drug Abuse	June 26, 2016	1,03,356
(vi)	Heart Day	September 29, 2016	26,000
(vii)	Worlds AIDS day	December 1, 2016	58,778

13.44 **Adoption of Villages/ Slum Areas:** NCC has adopted over 1215 villages/ slum areas in different parts of the country to induce all round and inclusive growth of those villages/ areas. This also provides an opportunity to NCC cadets to identify themselves with different sections of society and people living in villages.

13.45 **Swachh Bharat Abhiyaan:** 8,18,889 NCC cadets carried out 'Cleanliness Drive' and 'Safe Sanitation' Awareness Campaign under Swachh Bharat Abhiyaan. For the outstanding work done during Swachhta Pakhwada from August 1 to 15, 2016, NCC was awarded 'Swachhta Puruskar' by Prime Minister.

13.46 **Sports activities at National Level:** NCC Cadets from all NCC Directorates actively participated in various sports activities at the National level, details of which are as follows:

(a) **NCC National Games:** NCC National Games were held in New Delhi from October 15 to 26, 2016. The shooting championship as part of the NCC National Games was held at Asansol

from August 22 to September 2, 2016. A total of 2108 cadets participated in Football, Hockey, Volleyball, Handball, Kho-Kho, Basketball, and Shooting Competitions.

(b) **Jawaharlal Nehru Hockey Cup Tournament:** NCC teams in Junior Boys, Junior Girls and Sub-Junior Boys categories participated in the prestigious Jawaharlal Nehru Hockey Tournament 2016, where they played against some of the best teams in the country and some foreign teams.

(c) **Subroto Cup Football Tournament:** NCC teams in Junior Boys, Junior Girls and Sub-Junior Boys categories participated in the prestigious Subroto Cup Football Tournament 2016, where they played against some of the best teams in the country and some foreign teams. Junior Girls team of NER Directorate and Sub-Junior Boys team of Odisha Directorate reached the Semi Final of the tournament.

(d) **All India GV Mavlankar Shooting Championship:** Firing being one of the core training activities of NCC, shooting discipline enjoys special place in NCC sporting activities. Selected NCC Cadets during the NCC National Games participate in the All India GV Mavlankar Shooting Championship Competition conducted by National Rifle Association of India (NRAI). NCC shooting teams have been performing well in the event for the last many years.

This year too, NCC shooting team won 9 Gold, 6 Silver and 3 Bronze medals in the event.

(e) **National Shooting Championship Competition:** Every year NCC Shooting team participates in the prestigious National Shooting Championship Competition (NSCC). This year, 45 NCC shooters were selected for the event and the shooting team won 3 Gold, 2 Silver and 3 Bronze medals.





DEFENCE COOPERATION WITH FOREIGN COUNTRIES



Defence Cooperation with Foreign Countries

14.1 Defence cooperation has emerged as an important element of India's diplomacy and has served to strengthen relations with friendly foreign countries as well as advance our foreign policy objectives. Defence cooperation covers a wide range of activities and initiatives undertaken by the Ministry of Defence, Armed Forces and Coast Guard for enhancing mutual trust and understanding with counterparts in foreign countries. These initiatives include high level visits, training and capability building exchanges, military-to-military cooperation, joint exercises, defence industry collaboration as well as research and development tie-ups. The year witnessed an all-round intensification of India's defence diplomacy engagement with countries in our extended neighborhood, Africa and the Indian Ocean region as well as with major powers.

14.2 Ties with **Afghanistan** continued to be enhanced, based on strong historical and cultural links as well as the ongoing development of political and economic ties. India contributed to efforts towards stabilisation of the security situation in Afghanistan by assisting the Afghan National Army (ANA) in capacity building as well as by provision of medical assistance to ANA personnel. General Qadam Shah Shahim, Chief of General Staff of Afghanistan, visited India from August 30 to September 2, 2016. A number of technical

delegations from India also visited Afghanistan this year.

14.3 A delegation led by Gen. Candido Pereira dos Santos Van-Dunem, Minister of Former Combatants and Motherland Veterans, **Angola** visited India from May 2-7, 2016. Discussions covered aspects related to welfare and resettlement of Ex-Servicemen as well as possibilities of broader defence cooperation.

14.4 India's defence cooperation with **Australia** was significantly enhanced this year. Chairman DRDO and Secretary (Defence R&D) visited Australia from April 18-21, 2016. The 5th Round of Defence Policy Talks, at Additional Secretary level, was held at New Delhi on June 28, 2016. The Australian delegation was led by Deputy Secretary (Strategic Policy and Intelligence) of the Australian Ministry of Defence. The 5th Air-to-Air Staff Talks with Australia were conducted from July 26-28, 2016 in India and the 10th Navy-to-Navy Staff Talks were held in India from August 10-12, 2016. India participated in the Exercise Pitch Black-16, a multilateral biennial premier aerospace operational exercise conducted by Royal Australian Air Force from August 14-18, 2016 as well as in Exercise KAKADU-16, a multilateral biennial naval exercise, hosted by Royal Australian Navy from September 12-22, 2016. The first meeting of the India-Australia

Defence Research and Material Working Group was held in India on October 27-28, 2016.

14.5 Defence cooperation with **Bangladesh** scaled new heights this year with the successful visit of Raksha Mantri to Bangladesh from November 30 - December 1, 2016. This was the first bilateral visit by an Indian Defence Minister to Bangladesh. It was agreed that both sides would work towards enhancing and institutionalizing their defence engagement through cooperation in training, defence industry and exchanges between their armed forces. A four member delegation, led by Principal Staff Officer (PSO), Armed Forces Division (AFD) from Bangladesh attended the Defence Expo at Goa from March 28-30, 2016. Two Indian defence personnel were awarded the 'Friends of Liberation War Honour' by Bangladesh, as part of honouring the soldiers and officers of Indian Armed Forces who made supreme sacrifices in the Liberation War of Bangladesh. Bangladesh government has proposed to honour more than 1650 soldiers and officers who participated in the Liberation War. India has also supplied memorabilia for the Liberation War Museum in Bangladesh. Two Indian Coast Guard ships also visited Bangladesh for a protocol visit for the first time in September 2016. An interaction of war veterans was held on Vijay Diwas/ Victory Day from December 14-19, 2016 in Bangladesh. The Sixth edition of joint exercise 'Sampriti' was held in Bangladesh from November 6-20, 2016. A high level delegation from Bangladesh visited Indian defence industries and DRDO from December 4-10, 2016.

14.6 India-**Bhutan** relations are an exemplar of mutual trust and understanding. Cooperation in the field of defence has emerged as a key aspect of bilateral relations with Bhutan over the years. There is extensive ongoing cooperation in the field of defence, including training to

Bhutanese armed forces personnel in Indian defence training institutions.

14.7 Defence cooperation with China continued. Raksha Mantri paid a bilateral visit to **China** from April 18-20, 2016 and held wide-ranging discussions on bilateral cooperation with the Chinese leadership. The 8th Annual Defence and Security Dialogue between India and China was held in New Delhi on November 8, 2016. The Indian side was led by Defence Secretary while the Chinese delegation was led by Admiral Sun Jianguo, Deputy Chief of Staff, Joint Staff Department of the Central Military Commission of China. Both sides recognised the importance of maintaining peace and tranquillity on the border and agreed to continue Confidence Building Measures (CBMs) and exchanges at different levels. The 6th round of the bilateral Joint Military Training Exercise 'Hand-in-Hand' was held from November 15-27, 2016 in India. Gen. Zhao Zongqi, Commander of the PLA Western Theatre Command visited India on December 8-11, 2016. Various functional exchanges continued throughout the year. An Indian delegation attended the Zhuhai Air Show in China and a Chinese delegation attended Aero India in Bangalore in February 2017.

14.8 A delegation led by Director General (Acquisition) visited **Czech Republic** on November 14-15, 2016 for the 5th India-Czech Republic Joint Defence Committee meeting, and identified several areas for further development of bilateral defence cooperation. Chief of Army Staff visited the Czech Republic in September 2016.

14.9 Engagement with **Egypt** witnessed a steady intensification. The 6th meeting of the Joint Defence Committee (JDC) with Egypt at Additional Secretary level was held on April 27, 2016 in New Delhi. A delegation from

the Egyptian National Security Council visited India. Functional level interaction, including exchange of officers for training, was enhanced.

14.10 India and **France** continue to build on their robust and mutually beneficial partnership in defence. Building on the participation of a French military contingent at the Republic Day celebrations in 2016, the year witnessed several major visits and outcomes. Defence Minister Yves Le Drian visited India from September 23-24, 2016. An Inter-Governmental Agreement for purchase of Rafale aircraft was signed during the visit. Biennial army exercise Ex-Shakti, was conducted in January 2016 in India. The 16th meeting of High Committee on Defence Cooperation (HCDC), co-chaired by Defence Secretary, was held on March 9-10, 2016 in New Delhi.

14.11 The 8th India-**Germany** High Defence Committee (HDC) meeting, co-chaired by Defence Secretary, was held in Berlin from June 14-15, 2016 and agreed on several new initiatives to expand cooperation. Working level delegations were exchanged covering training and defence industrial aspects. Both sides are continuing their discussions on an enabling framework for a stronger defence industrial engagement.

14.12 India's defence cooperation with **Indonesia** received a fillip this year, based on the outcomes and agreements reached during the visit of the President of Indonesia to India in December 2016. A delegation led by Defence Secretary visited Indonesia for the 5th India-Indonesia Joint Defence Cooperation Committee (JDCC) meeting on January 17-18, 2017, which finalized an expanded agenda for bilateral defence cooperation. The bilateral Joint Exercise Garuda Shakti-2016 was held at platoon level in Indonesia from March 10-23,

2016. It has been agreed to expand this exercise to company level in future. INS Sumedha with integral Chetak and P-81 MPA participated in the multilateral Exercise KOMODO-2016 hosted by Indonesia in April 2016. Indonesia also participated at the International Fleet Review (IFR) in February 2016. The 5th Army-to-Army Staff Talks were held in Indonesia from August 24-26, 2016. The 28th cycle of Coordinated Patrol (CORPAT) between the Navies of India and Indonesia was conducted during October 10-28, 2016.

14.13 Defence relations with **Israel** gained in strength. The 12th meeting of Joint Working Group on Defence Cooperation with Israel, co-chaired by Defence Secretary, was held on July 13, 2016 in New Delhi. The meeting helped in identifying areas of cooperation and chalking out a road map for future exchanges. The 9th India-Israel Army Staff Talks (AAST) were held in April 2016 in New Delhi. The 9th India-Israel Air Force Staff Talks were held in December 2016 in Israel.

14.14 India shares warm and friendly relations with **Japan**. Defence cooperation has emerged as a key aspect of bilateral relations. Raksha Mantri held a bilateral meeting with Gen. Nakatani, Defence Minister of Japan on the margins of the Shangri La Dialogue in Singapore in June 2016. Minister Nakatani visited India on July 14, 2016 as part of regular Defence Ministerial exchanges. A Joint Statement was issued during the visit, reflecting the ongoing expansion and strengthening of the defence partnership in a range of areas. Inaugural Air-to-Air Staff Talks were held in Japan from February 16-18, 2016. The Malabar Exercise-16 was held as a Tri-lateral Exercise between US-India-Japan from June 10-17, 2016 off Japanese coast. 4th Army-to-Army Staff Talks were held

from November 23-25, 2016 in Japan. The 6th Navy-to-Navy Staff Talks were held in Japan from March 29-31, 2016. The 2nd India-Japan Joint Working Group on Defence Equipment and Technology Cooperation was held in New Delhi from August 17-20, 2016.

14.15 Defence Cooperation with **Kazakhstan** has been progressing well. The joint military exercise on Counter Terrorism “Prabal Dostyk” has been made into an annual event starting 2016 and was last held from September 3-17, 2016 in Kazakhstan. 3 Indian companies participated in KADDEX-2016 during June 2-5, 2016. An 11 member delegation of Garuds participated in the “International Army Games 2016 Sniper Line’ from July 28 to August 10, 2016. Under the Youth Exchange programme, an NCC delegation consisting of 2 officers and 12 cadets visited Kazakhstan from September 26 – October 8, 2016.

14.16 Defence cooperation with **Kenya** was strengthened with the signing of an MoU on Cooperation in the field of Defence on July 11, 2016 during the visit of Prime Minister to Kenya. Both countries are working towards an expanded engagement within the framework of the MOU.

14.17 Steady defence relationship between India and **Kyrgyzstan** continued. The third joint army exercise Ex. KHANJAR –III was conducted in India during March- April 2016. An MoU on NCC was signed during the visit of President of Kyrgyzstan to India in December 2016.

14.18 India and **Maldives** share wide-ranging defence cooperation. A bilateral Action Plan for Defence Cooperation was signed during the visit of the President of Maldives to India on April 11, 2016. Defence Secretary visited Maldives in July 2016 for the Inaugural Annual

Defence Dialogue and held discussions on a wide agenda of defence cooperation. Inaugural Navy-to-Navy Staff Talks with Maldives was held in March 2016. India continued to organize medical camps in Maldives. Capacity building and training remains a key aspect of the partnership.

14.19 India and **Mauritius** have historically shared a close friendship, including ongoing cooperation in defence and security matters. Raksha Mantri visited Mauritius in December 2016 and held extensive discussions on further strengthening defence cooperation. Raksha Mantri also attended the Commissioning Ceremony of MCGS Guardian, constructed at Goa Shipyard in India, and also handed over two Chetak helicopters. Earlier, in July 2016, India had supplied a Dornier aircraft to the Government of Mauritius to enhance its maritime surveillance capabilities. Mr. Premdutt Koonjoo, Minister of Ocean Economy, Marine Resources, Fisheries, Shipping and Outer Islands of the Government of the Republic of Mauritius visited India in April 2016 to participate in the Maritime India Summit.

14.20 Defence cooperation with **Mongolia** continued to make good progress. The bilateral Military Exercise, 'Nomadic Elephant' (11th edition) was held in Mongolia from April 25 - May 8, 2016. India also participated in the multinational Exercise KHAN QUEST conducted annually in Mongolia in June, 2016. 8th India-Mongolia Joint Working Group (JWG) meeting was held in New Delhi in December 2016, which agreed on a range of activities to expand bilateral defence ties.

14.21 Defence cooperation with **Mozambique** was revitalized with the 3rd meeting of Indo-Mozambique Joint Defence Working Group

held on June 24-25, 2016 in Maputo. The meeting helped in giving much needed impetus to defence cooperation activities between the two countries by identifying several areas of mutual interest, including training and capacity building as well as cooperation on maritime security.

14.22 Defence cooperation with **Myanmar** continued to make good progress. The 9th Regional Border Committee Meeting with Myanmar was held at Imphal (Mantripukhri), from October 17-21, 2016. The 2nd Army-to-Army Staff Talks from January 5-7, 2017 and 2nd Air-to-Air Staff Talks from January 18-20, 2017 were held in Myanmar. Bilateral engagement on defence industry was further developed in tandem with enhanced dialogue between the armed forces.

14.23 India and **Nepal** share close relations based on historical and cultural links. India continued to support Nepal in its efforts for capacity building of their defence forces through training programmes. The Chief of Army Staff of Nepal visited India in February 2016 and Chief of Army Staff visited Nepal from November 11 to 14, 2016.

14.24 The visit of Raksha Mantri to **Oman** in May 2016 served to further strengthen defence ties. Bilateral MoUs/ Protocol on Military Cooperation, Maritime Issues, Flight Safety Information Exchange and Prevention of Crime at Sea were signed during the visit. The 10th round of joint Naval Exercise 'Naseem Al-Bahr' was conducted in January 2016 off Goa. An Omani defence delegation visited India from August 21 to 31, 2016. The delegation visited various DPSUs and private industries. The Chief of the Royal Army of Oman visited India in October 2016.

14.25 Our friendly bilateral relations with **Portugal** were expanded by signing of an MoU on defence cooperation during the visit of the Prime Minister of Portugal to India in January 2017.

14.26 India and **Russia** share a long-standing relationship of mutual trust and understanding, with defence cooperation as a central aspect of the strategic partnership. Russia remains the most important supplier of defence equipment to India. It is also the only country with which India has an institutionalized annual defence cooperation mechanism, the India-Russia Inter-Governmental Commission on Military Technical Cooperation, at the level of Defence Minister. Defence cooperation witnessed robust growth this year, with the successful conduct of the IRIGC-MTC in New Delhi on October 26, 2016, and key defence related agreements such as those on the S-400 Air Defence System and for supply of frigates being concluded at the Annual Summit in Goa the same month. Raksha Rajya Mantri visited Russia from April 26-28, 2016 to participate in the Moscow International Security Conference. The India-Russia High Level Monitoring Committee meeting, co-chaired by Defence Secretary, was held on July 6, 2016 in New Delhi. The Indian Armed Forces participated in the Army Games held in Russia in August 2016. India and Russia conducted joint Army Exercise INDRA in Russia in September-October 2016. Joint Navy Exercise INDRA was held in India in December 2016. HQIDS level staff talks were held between India and Russia on October 5-6, 2016 in New Delhi. Vice Chief of Air Staff visited Russia in June 2016 and Chief of Air Staff visited in October 2016.

14.27 The 2nd Meeting of India-**Saudi Arabia** Joint Committee on Defence Cooperation

was held in Riyadh on July 24-25, 2016. The meeting helped identify areas of mutual interest in defence cooperation and agreed on a set of measures to expand defence ties between the two countries, including technical exchanges, training and cooperation in defence industry.

14.28 India and **Seychelles** share close ties marked by high level visits, other exchanges and cooperation in several areas. Raksha Rajya Mantri attended the inaugural ceremony of the Coastal Surveillance Radar System (CSRS) at Seychelles in March 2016. Indian Navy deployed a ship with a band on the National Day of Seychelles on June 29, 2016.

14.29 Defence relations between India and **Singapore** have been growing over the years. Raksha Mantri visited Singapore from June 2-4, 2016 to attend the first bilateral Defence Ministerial Dialogue. He also addressed the 15th International Institute for Strategic Studies (IISS) Asia Security Summit-'The Shangri-La Dialogue'. Defence Secretary visited Singapore for the 11th India-Singapore Defence Policy Dialogue on January 19, 2017. The 9th India-Singapore Defence Working Group meeting, at Joint Secretary level, was held in New Delhi on May 13, 2016. The inaugural meeting of the Defence Industry Working Group was held in Singapore in June 2016. A delegation led by JS(PIC) visited Singapore to attend the 5th International Institute for Strategic Studies (IISS) Fullerton: The IISS Shangri-La Dialogue Sherpa Meeting from January 22-24, 2017. 11th Navy Staff Talks were held at Singapore from April 13-15, 2016. 9th Air Force Staff Talks were held in Singapore from August 10-12, 2016. Bilateral Naval Exercise (SIMBEX -16) between the Navies of the two countries was conducted in India from October 31 – November 5, 2016.

The Artillery Exercise Agni Warrior between the Armies of the two countries was held during November 27-30, 2016 in India. Joint Military Training (JMT)-2016 between the Air Forces was held in India from November 9 - December 8, 2016.

14.30 Defence Secretary visited **South Africa** from June 22-23, 2016 for the 7th meeting of the bilateral Joint Working Group. The meeting helped in identifying new areas of cooperation and agreed on a roadmap for implementing various defence cooperation activities between the two countries.

14.31 The Second Meeting of India-**Spain** Joint Working Group on defence cooperation was held on January 23 to 25, 2017 at Madrid (Spain). The meeting identified areas to further expand defence co-operation, including partnerships in defence industry.

14.32 India and **Sri Lanka** share close relations based on historical and cultural affinities. Defence cooperation has been regular and substantive, covering high level visits and other exchanges at various levels. Defence Secretary of Sri Lanka visited India in June 2016 to participate in the launching ceremony of the first two AOPV built by Goa Shipyard Limited (GSL). Defence Secretary level 4th Annual Defence Dialogue was held in November 3, 2016 in Colombo where various issues of mutual interest were discussed to further deepen bilateral cooperation. The Chief of Naval Staff visited Sri Lanka in November 2016 and also participated in the International Maritime Conference - Galle Dialogue 2016.

14.33 Chief of Air Staff visited **Sweden** from June 7-10, 2016. Defence cooperation with Sweden included supply of defence equipment and training exchanges.

14.34 India-**Switzerland** defence cooperation received a boost with the first round of defence consultations at the Joint Secretary level being held on November 18, 2016 in New Delhi, during which it was agreed to enhance ties, including defence industry linkages.

14.35 Defence Cooperation between India and **Tajikistan** progressed well. The 5th Joint Working Group, co-chaired by Joint Secretary, was held in Tajikistan during November 1 to 4, 2016.

14.36 Defence cooperation with **Thailand** has been moving forward. A ten member Indian Army team participated in the multi-national Exercise Cobra Gold in Thailand from January 20 – February 18, 2016. Joint Training Exercise 'Maitree', a platoon level exercise to share CI/CT experience, was held in Thailand from July 16-29, 2016. The 23rd cycle of Coordinated Patrol [CORPAT] between the Indian Navy [IN] and the Royal Thai Navy (RTN) was held from November 16-24, 2016. The 8th Navy-to-Navy Staff Talks were held from May 25-27, 2016 in India. The 7th Indian Air Force-Royal Thai Air Force Staff Talks were held in India from September 6-8, 2016. The 5th India-Thailand Defence Dialogue, co-chaired at the level of Additional Secretary was held in New Delhi on December 15, 2016 which agreed on several measures to further enhance defence cooperation.

14.37 Defence cooperation between India and the **United Arab Emirates** witnessed substantive enhancement during the year. Raksha Mantri visited UAE on May 23, 2016 and held wide-ranging talks with the UAE leadership. A bilateral MoU on Protection of Classified Information was signed during the visit. The 8th meeting of Joint Defence Cooperation Committee (JDCC) was

held in Abu Dhabi in December 2016. It was agreed to move forward on a range of measures to step up ties, including broader military to military cooperation. An MoU on Cooperation in field of Defence Industry was signed during the state visit of the Crown Prince of the UAE to India in January 2017. A contingent from the armed forces of the UAE participated at the Republic Day celebration.

14.38 Defence Cooperation with the **United Kingdom** saw continued progress with regular exchange of visits, training and other professional exchanges between Armed Forces of the two countries. Raksha Mantri held a bilateral meeting with the UK Secretary of State for Defence on the margins of the Shangri La Dialogue in Singapore in June 2016. The 17th Defence Consultative Group (DCG) meeting, co-chaired by Defence Secretary, was held on November 15-16, 2016 in New Delhi. Indian Army participated in Exercise Cambrian Patrol held from October 14-23, 2016 in UK.

14.39 Defence cooperation with the **United States** was elevated to a higher trajectory based on the signing of the new Framework agreement for the India-US defence relationship on June 3, 2015. The US Secretary of Defense, Dr. Ashton Carter visited India from April 11-13, 2016. Raksha Mantri visited USA from August 29-30, 2016. Secretary Carter visited India again in December 2016. Both countries signed the Logistics Exchange Memorandum of Agreement [LEMOA] in August 2016. The United States initiative to engage India as a major defence partner is expected to foster greater cooperation in defence industry. Both countries held their first ever Maritime Security Dialogue, with the participation of their Ministries of Defence and External Affairs, in Delhi in May 2016. Military to

Military cooperation continued apace. Exercise Vajra Prahar-2016 was held from January 17-30, 2016 in USA. Naval Exercise MALABAR (India-US-Japan) was held off Japan Coast from June 10-17, 2016. Indian Navy participated in the multilateral exercise Ex- RIMPAC conducted by the US off Hawaii from June 30-August 4, 2016. Fifth Meeting of the Defence Technology and Trade Initiative (DTTI) Group, headed by Secretary, Defence Production was held in New Delhi on July 27, 2016. Twelfth Meeting of the Defence Procurement and Production Group (DPPG), headed by the DG, Acquisition, was held in New Delhi on November 17-18, 2016.

14.40 The year witnessed a rapid intensification of India-**Vietnam** defence cooperation. RM visited Vietnam from June 5-8, 2016 as part of regular bilateral Ministerial exchanges. In

addition to meeting his counterpart and other Vietnamese leaders, RM also addressed a business event to promote defence industrial cooperation. The inaugural Navy-to-Navy Staff Talks were held in Vietnam from May 17-19, 2016. During his visit to Vietnam from September 2-3, 2016, Prime Minister announced a new defence Line of Credit of US\$ 500 million for Vietnam. Two defence related agreements viz. Technical Agreement on Sharing of White Shipping Information and Contract for supply of High-speed Off-shore Patrol Boats were also signed. Defence Minister of Vietnam General Ngo Xuan Lich accompanied by a high-level delegation including the Chiefs of the three Services visited India in December 2016. A Programme of Cooperation (PoC) between the Indian Air Force and Vietnam People's Air Defence and Air Force was signed during the visit.





CEREMONIAL AND OTHER ACTIVITIES



Ceremonial and Other Activities

15.1 The Ministry of Defence encourages and promotes both academic and adventure activities through autonomous institutions which are provided regular financial assistance. These institutions are:

- (i) The Institute for Defense Studies and Analyses, New Delhi.
- (ii) Mountaineering Institutes at Darjeeling and Uttarkashi.
- (iii) The Jawahar Institute of Mountaineering and Winter Sports (JIM) at Pahalgam.
- (iv) National Institute of Mountaineering and Allied Sports (NIMAS) at Dirang.

15.2 The important activities of these institutions during the period under review are enumerated in the succeeding paragraphs.

INSTITUTE FOR DEFENCE STUDIES AND ANALYSES (IDSA)

15.3 The Institute for Defence Studies and Analyses (IDSA), established in November 1965, is a registered body under the Registration of Societies Act III of 1860 (Punjab Amendment Act 1957) as amended from time to time. The Institute is a non-partisan, autonomous body dedicated to objective research and policy relevant studies on all aspects of defence and security. Its mission is to promote national and international security through the generation and dissemination of knowledge on defence and security-related issues.

15.4 IDSA is fully funded by the Ministry

of Defence. IDSA Scholars are drawn from academia, the defence forces and the civil services. The research faculty of 55 scholars including 7 Serving Officers on study leave is organised under 13 Centres. The Institute also hosted 3 Visiting Fellows from foreign countries under its Visiting Fellowship Programme and 3 Interns under its Internship Programme during the year, which has improved outreach of the Institute as well as enhanced its visibility across the globe.

15.5 IDSA studies all regional and global developments having a bearing on India's security and foreign policy. Developments in the neighbourhood remained a priority area for IDSA Scholars. With India engaging vigorously with the region and the World, IDSA's interaction with the strategic community has correspondingly increased. It is carrying out research on many contemporary subjects such as climate change, energy and water security, cyber and space security. The Institute is continuously focussing on emergence of new challenges and India's response to such challenges. Special attention was also paid to defence reforms, including procurement policies and procedures, defence diplomacy and security dialogues initiated by the Government.

15.6 A number of eminent visitors and delegations from abroad were hosted at the IDSA. Prominent think tanks and universities were also engaged. IDSA's website www.idsa.in has become a valuable source of information on a wide range of security and defence issues for researchers, students and

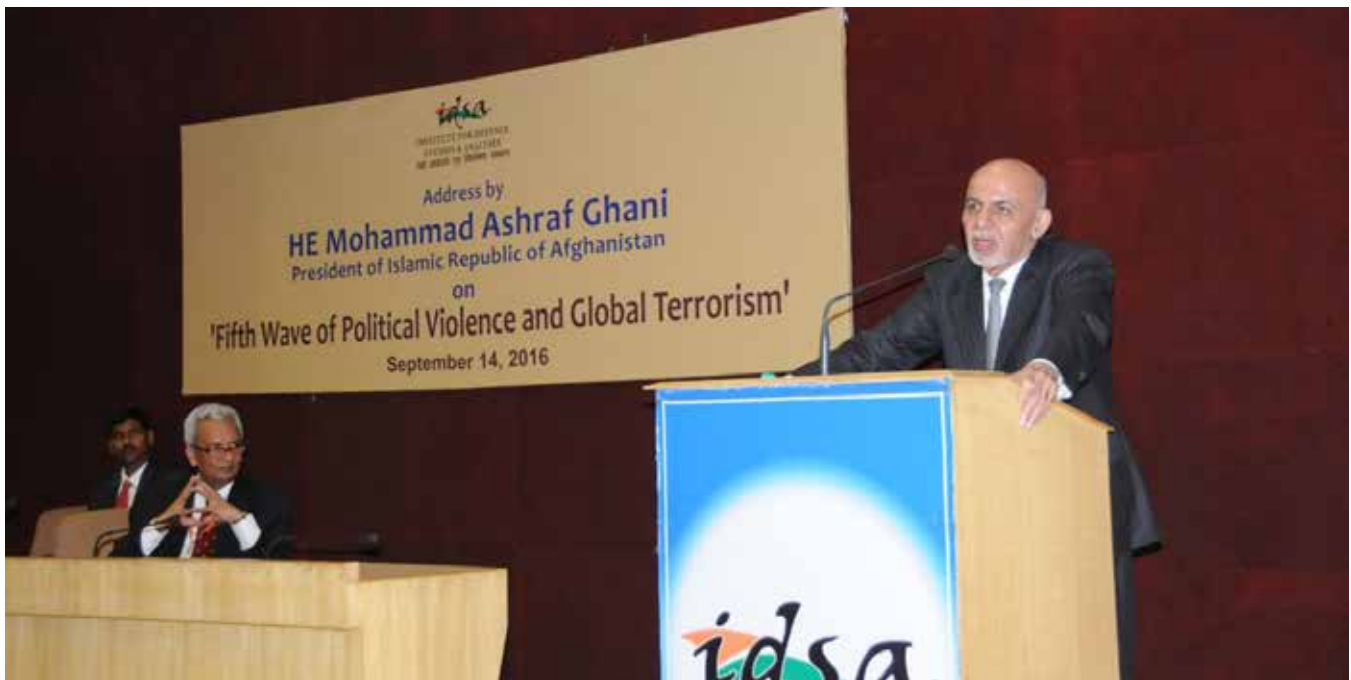
public alike. Social media tools like Twitter etc. have been used extensively to enhance IDSA's outreach.

15.7 A focus on policy relevant studies

remains the main thrust of IDSA. A conscious effort was made to enhance interaction with policy makers. A number of research projects were undertaken on behalf of various government departments.



IDSA conducted the 2nd Annual Conference on West Asia on “Ideology, Politics and New Security Challenges in West Asia” on January 19-20, 2016. The Inaugural address was delivered by the Vice President of India



President of the Islamic Republic of Afghanistan, H.E. Mohammad Ashraf Ghani, delivered a talk on “Fifth Wave of Political Violence and Global Terrorism” on September 14, 2016.

15.8 **International Conferences :** Many international conferences were organized by IDSA throughout the year, important of which are mentioned below:

- **January 19-20, 2016:** 2nd Annual Conference on West Asia on "Ideology, Politics and New Security Challenges in West Asia".
- **February 9-11, 2016:** 18th Asian Security Conference on the theme "Securing Cyberspace: Asian and International Perspectives".
- **February 24-26, 2016:** IDSA-PRIO Conference on "India's Role in Global Nuclear Governance".
- **November 4, 2016:** IDSA International Conference on "Russia in Global Affairs: Indian and Russian Perspectives".
- **November 21, 2016:** IDSA-IFS Conference on "India and the Great Powers: Continuity and Change".
- **November 23, 2016:** IDSA International Conference on "Addressing the Challenge of International Terrorism and Radicalisation".

15.9 **Round Table Discussions:** The institute organized several round table discussions during the year, important of which are enumerated below:

- **December 21, 2015:** A Roundtable interaction on "DRDO's Role in facilitating – 'Make in India'".
- **December 29, 2015:** A Roundtable interaction with Prof. Michael Pillsbury, a distinguished defence policy adviser.
- **January 27, 2016:** A Roundtable interaction with a Turkish delegation on "Role of Turkey in West Asia".

- **February 19, 2016:** The Academic Session of Delhi Dialogue VIII on "ASEAN-India Relations: A New Paradigm".
- **March 3, 2016:** A Roundtable interaction with a six member delegation from the Korea National Diplomatic Academy (KNDA) led by Prof. Lee Wonwoo, the Chief of Department of Asian and Pacific Studies, IFFANS, KNDA on the topics 'India-China Relations, India-US Relations, India-Pakistan Relations, South Asia and terrorism/ ISIS etc.'
- **March 17, 2016 :** A Roundtable interaction with a three-member delegation from Tokyo Foundation on 'India-Japan Maritime, HADR Operation, Defence Technology Cooperation, Prospects of Cooperation in Afghanistan and Energy Security Issues.'
- **April 21, 2016:** A Roundtable interaction with major foreign OEMs on "Facilitating OEMs Participation – 'Make in India'."
- **May 5, 2016:** A Roundtable interaction with a delegation of security experts from National Security Council, Thailand on "Issues Relating to the Emerging Trends in Terrorism."
- **May 24, 2016:** A Roundtable interaction with a four-member delegation from the Centre of Policy Analysis and Development, Ministry of Foreign Affairs of the Republic of Indonesia on "India's National Maritime Strategy, Concept and Definition of Maritime Security, Governance of Maritime Security, Diplomacy and International Aspects and Other Relevant Issues."
- **June 7, 2016:** A Roundtable discussion with an 18 member delegation from the UK's RCDS (Royal College of Defence).

- **June 8, 2016:** A Roundtable discussion with a 15 member delegation from Tanzania National Defence College (NDC) on various relevant issues.
- **August 3, 2016:** A Roundtable interaction with a 16 member delegation from the Sri Lanka Defence Services Command and Staff College (DSCSC) on various relevant issues.

15.10 **Talks/ Bilateral Interactions:** The Talks/ Bilateral interactions undertaken by the Institute includes:

- **December 3-4, 2015:** A bilateral dialogue was held between IDSA and the Institute for Political and International Studies (IPIS), Tehran on “Geo-Strategic Dynamics in West Asia: India-Iran Cooperation”.
- **March 1-2, 2016:** The second leg of a strategic nuclear dialogue was organized in collaboration with King’s College, London.
- **March 30, 2016:** Dr Ayesha Siddiq, Pakistan’s security analyst and author of the Military Inc., delivered a talk on "Emerging Civil Military relations in Pakistan."
- **April 5, 2016:** Amb. Shamsheer Mobin Chowdhury, former Foreign Secretary of Bangladesh delivered a talk on "Politics in Bangladesh: Problems and Trends."
- **April 13, 2016:** The inaugural conference of the Government of Nepal's flagship ‘Public Diplomacy’ programme was organised in collaboration with the BP Koirala India-Nepal Foundation and the Koan Advisory Group, New Delhi.
- **August 12, 2016:** Mr. Amir Khosru Mohammad Chowdhury, former Minister of Commerce (2001-2006), and presently a member of the Bangladesh Nationalist Party (BNP)'s Standing Council and also President of Chittagong Unit of the BNP, delivered a talk on "The Present State of India-Bangladesh Relations".
- **August 23, 2016:** Secretary (Economic Relations), Ministry of External Affairs, India, delivered a talk on "India's Approach to Africa: What is New?"
- **September 14, 2016:** President of the Islamic Republic of Afghanistan, H.E. Mohammad Ashraf Ghani, delivered a talk on “Fifth Wave of Political Violence and Global Terrorism”.
- **September 15, 2016:** A delegation from the Centre for Analysis of Strategies and Technologies (CAST) led by Deputy Director, Maxim Shepovalenko visited IDSA for a bilateral interaction on the current state and prospects of Russian-Indian defence co-operation and other related issues.
- **September 23, 2016:** A six-member Chinese delegation, led by Prof. Wang Jisi, the President of the Institute of International and Strategic Studies of Peking University, visited IDSA for a bilateral interaction on regional security issues.
- **October 27, 2016:** The second India-Russia Strategic Dialogue was held with the Russian Institute for Strategic Studies (RISS) on “Strengthening Synergies”.
- **November 17, 2016:** The 51st Foundation Day of IDSA was celebrated

on November 17, 2016. Vice Chairman, Niti Aayog, delivered this year's lecture on "National Security and Development"

- **November 28, 2016:** The Seventh Y. B. Chavan Memorial Lecture was delivered by Chairman, Research and Information System for Developing Countries (RIS) and former Foreign Secretary, Government of India Shri Shyam Saran on "Decline of Internationalism."

15.11 **Training Programmes:** Following training programmes have been organized by the Institute:

- **February 29- March 11, 2016:** Air Force Training programme.
- **March 29-31, 2016:** Defence and Security Module for Naval Intelligence Specialisation Course.
- **October 17-21, 2016:** Defence and Security Module Level-II for DIGs of Border Security Force (BSF).

MOUNTAINEERING INSTITUTES

15.12 The Ministry of Defence jointly with the concerned State Governments administers four Mountaineering Institutes, namely, Himalayan Mountaineering Institute (HMI), Darjeeling in West Bengal; Nehru Institute of Mountaineering (NIM), Uttarkashi in Uttarakhand; Jawahar Institute of Mountaineering & Winter Sports (JIM & WS), Pahalgam in J&K and National Institute of Mountaineering and Allied Sports (NIMAS), Dirang in Arunachal Pradesh. These Institutes are being run as Registered Societies and have been conferred the status of autonomous bodies. While Raksha Mantri is President of these Institutes, the Chief Minister

of the respective State acts as Vice-President of the Institute. The Institutes are governed by separate Executive Councils consisting of members elected by the General Body of each Institute, nominees from amongst donors and/or persons who are likely to promote the cause of the mountaineering and representatives of Central and State Governments.

15.13 These Institutes provide an impetus to mountaineering as a sport, give boost to mountaineering discipline and inculcate the spirit of adventure in youth. The broad objectives of the Mountaineering Institutes are:

- (a) to impart theoretical knowledge and practical training in mountaineering and rock climbing techniques;
- (b) to awaken interest in and love for mountains and exploration among the youth;
- (c) to encourage and provide training in Winter Sports; and
- (d) to generate a sense of preservation of environment and ecology in the Himalayan region through nature workshops.

15.14 These Institutes conduct courses in the Basic and Advanced Mountaineering, Method of Instruction (MOI), Search & Rescue (S&R) and Adventure. Trainees to these courses come from all parts of the country and also comprise personnel from Army, Air Force, Navy, ITBP, BSF and NCC. Foreigners are also permitted to join these courses. The syllabi, duration, grading, age limit of participant and other details for admission to courses are available on the websites of these Institutes.

15.15 The regular courses are almost uniform at all the Institutes. The regular courses conducted by the Institutes and number of men and women trained in these courses from April 2015 to December 2016 are given in Table No. 15.1.

15.16 HMI also conducted 4 special Basic Mountaineering Courses for 120 persons and 5 special Adventure Courses for 145 persons.

15.17 NIM conducted 5 special courses of adventure training, special training cum expedition for CRPF, special search and rescue training for NDRF, Sport Climbing and Rock Climbing for various organizations in which 253 persons were trained. NIM also conducted two expeditions, first expedition of 14 persons with Indian Navy to Mount Satopanth (7075 Mtr) and second expedition of 20 persons with Indian Navy to Mount Mukut East (7075 Mtr).

15.18 JIM also conducted one expedition sponsored by IMF for 24 handicapped students of the Country to Tulian Peak (21000 feet) of Pahalgam.

15.19 Two instructors of NIMAS participated and summited Mount Gorichen expedition with 4 Corps/71 infantry Division team.

CEREMONIALS, HONOURS AND AWARDS

15.20 The responsibility for organising National functions like the Republic Day Parade, Beating the Retreat Ceremony, Martyrs' Day and the Independence Day rests with Ministry of Defence. The Ministry also organises the Defence Investiture Ceremonies for presentation of Gallantry and Distinguished Service Awards at Rashtrapati Bhawan in association with the President's Secretariat. The Ceremonial functions organised during 2016-2017 are detailed in the following paragraphs.

15.21 Independence Day Flag Hoisting Ceremony: The celebration of the Independence Day began with singing of patriotic songs in different Indian languages by the School children's choir at Red Fort. The three Services and Delhi Police presented the Guard of Honour to the Prime Minister. Thereafter, the Prime Minister unfurled the National Flag on the Ramparts of the Red Fort to the accompaniment of the National Anthem played by the Services Band. Twenty one Gun Salute was presented on the occasion. After the Prime Minister's Address to the Nation, the ceremony concluded with the singing of National Anthem by school children and the

Table No. 15.1

Institute	Basic Course		Advanced Course		Adventure Course		MOI Course		S&R Course	
	No. of Courses	No. of Trainees	No. of Courses	No. of Trainees	No. of Courses	No. of Trainees	No. of Courses	No. of Trainees	No. of Courses	No. of Trainees
HMI	06	353	03	149	02	119	01	23	-	-
NIM	05	381	03	116	05	265	01	30	01	50
JIM	06	633	01	71	13	477	01	17	-	-
NIMAS	07	117	04	22	12	570	-	-	-	-

NCC cadets followed by release of balloons. Later, during the day, the President laid a wreath at the Amar Jawan Jyoti at India Gate to pay homage to those who sacrificed their lives for the freedom of the motherland.

15.22 The Gallantry Awards announced on the eve of the Independence Day-2016 are given in Table No. 15.2.

Table No. 15.2

Award	Number of Awards	Posthumous
Ashok Chakra	01	01
Shaurya Chakra	14	07
Sena Medal (G)	63	12
Nao Sena Medal (G)	02	-
Vayu Sena Medal (G)	03	-

15.23 **Vijay Diwas:** Vijay Diwas was celebrated on December 16, 2016. On this occasion, the Raksha Mantri laid a wreath at the Amar Jawan Jyoti at India Gate.

15.24 **Amar Jawan Jyoti Ceremony, 2017:** The Prime Minister laid a wreath at the Amar Jawan Jyoti at India Gate in the morning of January 26, 2017. A two minute silence was observed for paying homage to those who laid down their lives in safeguarding the integrity of the nation.

15.25 **Republic Day Parade, 2017:** The unfurling of the National Flag at Rajpath marked the beginning of Republic Day Parade. The President's Body Guards presented the National Salute followed by the National Anthem played by the Service Bands and a 21 gun salute. His Highness, Sheikh Mohammed bin Zayed Al Nahyan, the Crown Prince of Abu Dhabi and Deputy Supreme Commander of the United Arab Emirates (UAE) Armed Forces was the Chief Guest on the occasion.

15.26 This year also, a marching contingent and band from the country of the Chief Guest participated in the Republic Day Parade as was done last year. In addition, various mechanised columns, marching contingents and bands of the three services, Para Military Forces, Delhi Police, NCC, NSS etc. were part of the parade.

15.27 Out of twenty five children conferred with National Bravery Awards, four were posthumous. Twenty one award winning children, seated in decorated Army Jeeps, participated in the Parade. Tableaux of States, Central Ministries/ Departments and cultural items presented by school children were the other attractions of the parade. 23 tableaux and 4 school children items reflected the cultural diversity of the nation. The parade concluded with a motorcycle display by the jawans of Army followed by an impressive Flypast by Indian Air Force. This year, indigenously built Light Combat Aircraft (LCA) Tejas participated in the Flypast during the Republic Day Parade for the first time.

15.28 The Gallantry and distinguished service awards announced on the Republic Day, 2017 are given in Table No. 15.3.

Table No. 15.3

Name of the award	Total	Posthumous
Gallantry Awards		
Kirti Chakra	02	01
Shaurya Chakra	12	03
Bar to Sena Medal/Nao Sena Medal/Vayu Sena Medal (Gallantry)	03	-
Sena Medal/Nao Sena Medal/Vayu Sena Medal (Gallantry)	97	-
Distinguished Awards		
Param Vishisht Seva Medal	29	-

Name of the award	Total	Posthumous
Uttam Yudh Seva Medal	05	-
Bar to Ati Vishisht Seva Medal	02	-
Ati Vishisht Seva Medal	49	-
Yudh Seva Medal	14	-
Bar to Sena Medal/ Nao Sena Medal/ Vayu Sena Medal (Devotion to duty)	04	-
Sena Medal/Nao Sena Medal/ Vayu Sena Medal (Devotion to duty)	58	-
Bar to Vishisht Seva Medal	04	-
Vishisht Seva Medal	119	-

15.29 Beating the Retreat Ceremony, 2017:

Beating the Retreat is a centuries old military tradition practised by the troops at the time of disengaging from battle at sunset. The Beating the Retreat Ceremony denotes departure of the troops assembled at Delhi for participating in the Republic Day Celebrations. The ceremony was organised at Vijay Chowk on January 29, 2017, which brought down the curtain on the Republic Day festivities. Bands of the three Services along with State and Central Armed Police Force (CAPF) Band participated in this Ceremony. The conclusion of the ceremony coincided with illumination of the Rashtrapati Bhawan, North Block, South Block, Parliament House and India Gate.

15.30 Martyrs' Day Ceremony, 2017: On January 30, 2017, the President laid a wreath at Mahatma Gandhi's samadhi at Rajghat. The Vice President, the Prime Minister, the Raksha Mantri, Raksha Rajya Mantri and other dignitaries also paid floral tributes. This was followed by observance of two minutes' silence at 1100 hours to pay homage to those who sacrificed their lives in India's struggle for freedom.

15.31 Armed Forces Flag Day (AFFD): The Armed Forces Flag Day was commenced on December 7, 2016 like every year throughout the country. This day is observed to remember the sacrifices made by gallant servicemen in defending the integrity of borders, honour the brave and express solidarity and support towards welfare of widows, children, disabled and sick ex-servicemen.

OFFICIAL LANGUAGE DIVISION

15.32 An Official Language Division is functioning in the Ministry of Defence for implementation of the official language policy of the Union Government. This Division provides assistance and guidance to the officers and employees of the Ministry of Defence (Secretariat), the three Services Headquarters, all Inter-Service Organizations and Defence Undertakings for proper implementation of the provisions of the Official Language Act and rules made thereunder and the directions/ orders issued by the nodal Department viz. Department of Official Language, Ministry of Home Affairs in this regard from time to time. The work relating to official language implementation comprises achieving of targets prescribed by the Department of Official Language every year for the progressive use of Hindi in official work, imparting training of Hindi, Hindi typing and Hindi Stenography to the officers and staff working in the Ministry and organizing Hindi workshops for the staff to enable them to work in Hindi without any hesitation. The work relating to monitoring includes carrying out official language inspections of subordinate offices, defence undertakings and divisions/ sections of the Ministry, organizing quarterly meetings of both the official language implementation committees (OLICs) of the Ministry, taking part in the meetings of OLICs of the three Services

Headquarters and Inter-Service Organizations located at New Delhi by senior officers of the Division as representative of the Ministry and reviewing the quarterly progress reports received from the above offices for taking remedial measures.

15.33 Annual Programme: Annual Programme for the year 2016-17 issued by the Department of Official Language was circulated to all defence organizations for achieving targets laid down therein. Emphasis is being laid on enhancing the original correspondence in Hindi, issuing all communications falling under Section 3(3) of Official Language Act in bilingual form, conducting Hindi workshops regularly and getting the officers/ employees trained in Hindi under the Hindi Teaching Scheme. In the quarterly meetings of the departmental OLICs, progress made in this regard is being reviewed regularly.

15.34 Translation Work: Substantial material for translation received from various offices and sections of the Ministry was disposed of during the year which included MP/VIP references, communications issued from Raksha Mantri/ Raksha Rajya Mantri offices, cabinet notes, audit paras, documents submitted to Standing Committee on Defence and Consultative Committee, Annual Report of the Ministry, Parliament Questions, Agreements etc.

15.35 Meeting of Hindi Advisory Committees: There are two Hindi Advisory Committees in the Ministry, one for the Department of Defence, Department of Ex-Servicemen Welfare and Department of Defence Research and Development and other for the Department of Defence Production to advise the respective Department(s) of the Ministry on matters relating to the progressive use of Hindi for official purposes. Hindi Advisory Committee for the Department of Defence, Department of Defence Research Development and Department of Ex-

Serviceman Welfare has been reconstituted under the chairmanship of Raksha Mantri. The introductory meeting of the reconstituted committee took place on the May 7, 2016 under the chairmanship of Raksha Mantri in New Delhi. Minutes of this meeting was circulated and action taken notes from almost all concerned have been received. Necessary actions have been initiated to organize the next meeting of the committee.

15.36 Incentive schemes for writing books in Hindi on subjects relating to defence and Award scheme for in-house journals: Evaluation of books received under the scheme for the block year 2011-13 has been completed and the book "Hind Mahasagar chunoutiyan evam vikalp" written by Shri Harisharan & Shri Harsh Kumar Sinha was recommended for first prize of ₹ 50,000/- (Fifty Thousand) and the book "Dwitiya Vishwayudha" written by Captain Rajpal was recommended for second prize of ₹ 30,000/- (Thirty Thousand) by the evaluation committee.

15.37 Notifying Defence Offices under rule 10(4) of OL Rule, 1976: Notifications under rule 10(4) of Official Languages Rules, 1976 in respect of various defence offices whereof 80% or more officials have attained working knowledge of Hindi, were issued. Offices notified under rule 10(4) were directed to specify sections/ proficient officials in their offices under rule 8(4) of the said rules to do their entire official work in Hindi.

15.38 Hindi Pakhwara: Hindi 'Pakhwara' (fortnight) was held in the Ministry from September 14 to 28, 2016 for encouraging the officers/ employees to use Hindi in their day-to-day official work. A number of competitions were organized during the period, which included Hindi noting and drafting, Hindi typing, Hindi stenography and essay writing competitions etc. More than 200 officials

participated in the above competitions and 110 successful candidates were awarded cash awards/ gifts.

15.39 Inspections of Parliamentary Committee on Official Language: Like in previous years, the Committee of Parliament on Official Language made inspection tours of various defence organizations at different stations in the country during the year. The Ministry assisted the offices under inspection by reviewing their questionnaires and suggesting amendments wherever required. Assurances given by the offices at the time of their inspection are being

fulfilled as per the directions and requirements of the Committee.

WELFARE OF PERSONS WITH DISABILITIES

15.40 The representation of Persons With Disabilities in Group 'A', 'B' and 'C' posts in Ministry of Defence (Department of Defence) and in Attached and Subordinate Offices under Department of Defence Production is presented in Table No. 15.4 and Table No. 15.5, respectively.

Table No. 15.4

Annual Statement showing the representation of the persons with disabilities in services (As on January 1, 2016)

Representation of Visually handicapped (VH)/ Hearing Handicapped (HH)/ Orthopedically Handicapped (OH) (As on 1.1.2016)					Number of Appointments made during the calendar year 2015											
					By Direct Recruitment				By Promotion				By Deputation			
Groups	Total Employees	VH	HH	OH	Total	VH	HH	OH	Total	VH	HH	OH	Total	VH	HH	OH
A	5339	1	0	28	180	1	0	3	483	0	0	2	1	0	0	0
B	29256	19	37	260	192	1	1	10	2617	5	4	58	2	0	0	0
C (Excluding Safai Karmchari)	135645	314	339	1067	6004	25	35	85	2713	5	5	32	2	0	0	0
C (Safai Karmchari)	49132	179	227	273	1464	8	19	26	506	2	3	27	1	0	0	0
Total	219372	513	603	1628	7840	35	55	124	6319	12	12	119	6	0	0	0

Table No. 15.5

Annual Statement Showing the Representation of the Persons with Disabilities in Service in Attached and Subordinate Offices under Department of Defence Production (As on 1st January 2016)

Representation of Visually Handicapped (VH)/ Hearing Handicapped (HH)/ Orthopedically Handicapped (OH) (As on 1.1.2016)					Number of Appointments made during the calendar year 2015											
					By Direct Recruitment				By Promotion				By Deputation			
Groups	Total Employees	VH	HH	OH	Total	VH	HH	OH	Total	VH	HH	OH	Total	VH	HH	OH
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
A	2497	01	06	18	04	00	00	00	24	00	00	00	--	--	--	--
B	33898	18	21	207	22	00	04	11	76	00	00	00	--	--	--	--
C (Excluding Safai Karmchari)	60662	137	185	1116	10	05	00	05	81	01	08	23	--	--	--	--
C (Safai Karmchari)	141	00	00	00	00	00	00	00	00	00	00	00	--	--	--	--
Total	97198	156	212	1341	36	05	04	16	181	01	08	23	--	--	--	--

15.41 **Armed Forces:** Provisions enshrined under Sections 33 and 47 of the Persons with Disabilities (Equal Opportunities, Protection of Rights and Full Participation) Act, 1995, lay down safeguards for persons with disabilities in the matter of recruitment and retention in the Service. However, keeping in view the nature of duties performed by the Armed Forces personnel, all combatant posts have been exempted from the applicability of the relevant Sections by virtue of special Notifications issued by the Ministry of Social Justice and Empowerment.

15.42 **Department of Defence Production:** All Defence Public Sector Undertakings (DPSUs) under the Ministry of Defence have been following the provisions of the Persons with Disabilities (Equal Opportunities, Protection of Rights and Full Participation) Act, 1995 in order to enable persons with disabilities to avail the benefits of reservation. Several concessions and relaxations, in addition to those prescribed by the Government, are also extended to persons with disabilities.

15.43 **Defence Research and Development Organisation:** DRDO is committed to implement the Government policies and instructions relating to the welfare of Persons

with Disabilities. The 3% reservation in the recruitment and promotion is being provided to the persons with disabilities as per the Government instructions.

Department of Ex-Servicemen Welfare

15.44 **Special Medical Care for disabled Soldiers:** A number of soldiers become disabled during action or due to accident and other causes and are invalidated out from service. These Ex-Servicemen (ESM) are provided special medical care and training to become self-reliant. The care and rehabilitation of such personnel is undertaken in specialized institutions, viz. Paraplegic Rehabilitation Centres at Mohali and Kirkee and St. Dunstan's After Care Organization, Dehradun which are supported financially by Kendriya Sainik Board (KSB) Secretariat out of Armed Forces Flag Day Fund.

15.45 **Prosthesis Centres:** 53 Prosthesis Centres of Endolite and Ottobock Companies across 40 Cities have been approved for empanelment under Ex-Servicemen Contributory Health Scheme to provide latest prosthesis treatment to disabled ESMs on November 3, 2016.



ACTIVITIES OF VIGILANCE UNITS



Activities of Vigilance Units

16.1 The Vigilance Division in the Ministry of Defence has been entrusted with the task of dealing with complaints regarding corrupt practices, misconduct and irregularities in respect of employees of the Ministry of Defence and various units under it. It serves as a nodal point for interaction on behalf of the Ministry of Defence with the Central Bureau of Investigation (CBI), Central Vigilance Commission (CVC) etc. on vigilance related issues and complaints. The Vigilance Division inter-alia initiates measures with a view to combat corruption and review procedures.

16.2 For administrative convenience, vigilance wing of the Department of Defence also looks after the vigilance work of Department of Ex-Servicemen Welfare and Department of Defense Research and Development. The Department of Defence Production have a separate vigilance wing.

16.3 In accordance with the directives of the Central Vigilance Commission, all Departments/ Organisations/ Units viz. Army, Navy, Air Force, DRDO, DGBR, CGDA & DGAFMS etc., under Ministry of Defense, observed Vigilance Awareness Week from October 31 to November 5, 2016 with the theme "Public participation in promoting integrity and eradicating corruption" and wide range of activities like workshops, distribution of pamphlets, display of banners/posters, debates, lectures, essay/poster making competitions, quiz programmes etc. were

organized to spread vigilance awareness among their staff.

DEPARTMENT OF DEFENCE

16.4 In keeping with the need to ensure transparency, fair play, accountability and integrity, efforts are being made continuously in the Ministry of Defence for sensitization of all the stakeholders against corrupt practices.

16.5 The Chief Vigilance Officer maintains liaison with all concerned offices to ensure timely completion of various reports/ cases/ tasks relating to vigilance work.

16.6 The Ministry keeps a close watch over vigilance cases pending at different stages including cases pending in the concerned Wings/ Divisions so that such cases are disposed of in a time bound manner. The status of pendency is monitored by the CVO at regular intervals.

16.7 A total of 11 complaints and 3 CTE Paras were referred by CVC, on which action was initiated. Besides this, two more complaints were received including one from Cabinet Secretariat/ PMO and one from DoPT. Two complaints were received from CBI. During the period of Report, 15 cases were closed in consultation with CVC/ CVO. Prosecution sanctions were issued against 4 officers during 2016. During the year 2016, 16 disciplinary cases of Group 'A' officers were finalized – 5 officers were exonerated and penalty was

imposed in 6 cases. Charges were dropped in 2 cases and Recordable Warning was issued in another case. Two appeals against the penalty imposed in disciplinary cases were also decided during the year.

DEPARTMENT OF DEFENCE PRODUCTION

16.8 Ordnance Factory Board (OFB): Vigilance Awareness Week 2016 was celebrated at all OFB units across the country. Integrity pledge was administered by the Head of the Units to all employees. Various competitions viz. slogan writing, debates, essay writing in vernacular, Hindi and English on vigilance related topics were organised and awards were distributed to the winners. Vigilance officers at local units interacted with employees to sensitise them about vigilance matters. Banners/posters were also displayed in public places for the awareness of public.

16.9 OFB/Vigilance organized the interactive sessions of Deputy Secretary (Vig)/ DDP with officers of Ordnance Factories at five different locations to sensitise them about the vigilance angle in discharge of their official duties regarding procurement, purchase, labour contracts and dealing with contractors etc.

16.10 Training of personnel for their roles as Inquiry Officer and Presenting Officer was imparted by CVO/ OFB at NADP/ Ambajhari in November, 2016. In addition, interactive meetings on vigilance awareness were also held by CVO/ OFB in five zones.

16.11 69 Preventive Checks and 248 APR checks were conducted during the year.

16.12 CVO/ OFB suggested for revision of the SROs for effective plugging of loopholes. Amendments in different definitions of Established Vendors in Quality & Procurement

Manuals were suggested. Strict compliance of the existing norms for engagement of labours/ service contract was suggested.

16.13 During the period, 589 routine/ surprise checks on corruption prone areas were conducted out of which 14 cases were taken up for detailed investigation. During the period, 230 complaints were handled.

16.14 21 cases of investigation were concluded out of which 9 cases were referred for disciplinary action and 10 cases for administrative action.

16.15 Check of expenditure incurred on Welfare Measures such as PF Trust, CSR activities etc. was ensured. System studies were carried out and measures implemented to streamline procedure for issue of materials to sub-contractors, vendors' registration, RTGS payments and handling of Bank Guarantees. Several workshops were conducted with important functionaries/stakeholders.

16.16 Bharat Electricals Limited (BEL): Vigilance Awareness Week was observed across all the Units/ SBUs and Corporate Office from October 31, 2016 to November 5, 2016.

16.17 2850 Executives/ Non Executives completed the Certificate Programme in Public Procurement organised by Vigilance Study Circle (VSC), Bengaluru in association with the World Bank. VSC-Bengaluru meeting was held on July 28, 2016 at BEL and a talk was organised on "Technology crimes and strategy for Protection" by Director/ Financial Advisor, Deloitte Touche Tohmatsu India LLP. 9 Vigilance Officers were certified as Qualified Internal Auditors on ISO 9001:2015 standards.

16.18 ISO 9001:2015 Certification for the Vigilance function of BEL was received on June 3, 2016. Complaint Monitoring System was inaugurated at Bengaluru Complex on April, 12, 2016. Various manuals, policies

and procedures like Contract Manual, Purchase Procedure, Recruitment Policy, Security Manual etc. were revised and issued. Information booklet on "Guidelines for contract workers and useful information" was issued by BEL GAD Unit. 1550 regular and 604 surprise inspections were conducted during the year.

16.19 The 8th, 9th and 10th issues of in-house Vigilance Magazine 'Jagriti' were released. Vigilance awareness Gramasabhas were held at Ghantasala Village on 05.11.2016. Central Vigilance Commissioner was the chief guest. CTE type intensive examination was conducted in respect of 29 contracts.

16.20 Garden Reach Shipbuilders and Engineers Ltd. (GRSE): GRSE observed Vigilance Awareness Week from October 31 to November 31, 2016. GRSE took active part in the Vigilance Study Circle held on October, 2016.

16.21 Training was imparted to newly joined officers in Vigilance Department.

16.22 ID and digital signatures were provided to all officers of e-procurement cell to match them and to independently access the portal. Structured Meetings of CVO with CMD were held at regular intervals to apprise the status of vigilance cases. As a preventive measure regular and surprise inspections and verification of files were carried out.

16.23 Goa Shipyard Limited (GSL): As per directive of CVC, the Vigilance Awareness Week was observed at Goa Shipyard Limited from October 31 to November 5, 2016. During the week, Outdoor Elocution Competition programme for University students was organised. In addition to this, in-house competitions like Poster Competition, Slogan Competition, Essay Competition in Hindi/English were organised for GSL Employees, Apprentices

& GSL/ CISF Unit. Essay Competition for Secondary and Higher Secondary students was also organised at GSL Campus. Sensitization programme was conducted for recently posted CISF personnel to promote their involvement in eradicating corruption.

16.24 Orientation, Lecture and Presentations on Vigilance Awareness matter is being given to newly inducted officers, management trainees, supervisors and ministerial staff on an on-going basis. Two guest lectures were delivered- first by Secretary, Public Enterprises Selection Board on critical area of vigilance including disciplinary proceedings, imposition of penalties, suspension, sanctions for prosecution and vigilance clearances; and second guest lecture was delivered by Director (QA) of DGS&D on proposed introduction of GeM software being introduced by the Government and new initiatives by government of India for public procurement were highlighted.

16.25 The thrust during the year was on "Public participation in Promoting Integrity and Eradicating Corruption". A number of regular inspections, surprise checks and CTE (Type) inspections were carried out in various areas with the aim of intervening in time to preclude lapses/ violations of instructions and guidelines of CVC. Systemic improvements to streamline systems and procedures were also suggested.

16.26 Hindustan Shipyard Limited (HSL): Vigilance awareness week was observed during October 31 to November 5, 2016. Elocution competition was conducted for HSL degree college students, Essay writing and slogan writing competitions held for HSL Officers and a seminar for all officers was held on November 4, 2016 where the guest speaker was Joint Director, CBI, Hyderabad.

16.27 Three CTE type reports were done during the year. As a new initiative proposed

for proactive vigilance, various files relating to repairs of ramp on INS Kesari, Metal spraying of HT & LT Cooler plates on MV Nancowry, rate contract, procurement file of alarm panel of MV Nancowry and installation & integration of AK 630 Guns on 11184, were randomly verified.

16.28 Mazagaon Dock Shipbuilders Limited (MDL): During the Vigilance Awareness Week, the in-house Vigilance Journal 'SUCARITA-Volume XIX' was released; Integrity pledge was administered and Ex-CTE/ CVC spoke on procurement and CVO interacted with executives.

16.29 Vigilance coordination meeting with CBI was held on April 6, 2016. A vendors' meet was arranged. 204 Annual Property Returns were scrutinized.

16.30 Bharat Earth Movers Limited (BEML): Vigilance Awareness Week with the theme "Public participation in promoting integrity and eradicating Corruption" was observed in BEML Limited from October 31, 2016 to November 5, 2016. The highlight of the week was Integrity pledge and Citizens pledge which were administered to all the Executives and Employees of the Organisation. In addition, as an outreach activity, 3217 Students and 124 Staff of various Schools and Colleges where BEML Limited had organised events as a part of Observance of vigilance awareness week, were administered Integrity pledge and Citizens pledge. Further, 190 firms associated with BEML Limited also Participated in vigilance awareness week and took Integrity pledge and citizens' pledge. Street Plays and Skits were also organised for Employees/ Officers of BEML and also for public in general.

16.31 As a part of preventive vigilance, all tenders above ₹ 1 crore have been brought under the purview of Integrity Pact. During the year, 228 Annual Property Returns (APRs) were

scrutinized as also 281 surprise checks, 283 periodic checks, 504 Purchase Orders checks, 637 reimbursement claims and 2CTE type checks were carried out. System improvements in receipt of tenders; store & issue of medicines in Medical Centre, booking of transport vehicles and processing of their claim etc. were recommended and implemented. Further, CVC circulars on Tendering categorised under different stages have been uploaded in SRM platform, Vigilance Portal and BEML bulletin Board for the benefit of all.

16.32 Mishra Dhatu Nigam Ltd. (MIDHANI): Vigilance Awareness Week was observed from October 31 to November 5, 2016 focusing on the theme "Public Participation in Promoting Integrity and Eradicating Corruption". Hon'ble High Court Judge was the chief guest. Various competitions were held on the eve. "Hand Book on RTI Act" was distributed to participants and employees on the eve of Vigilance Awareness week for information and sensitization. Fourth issue of the in-house magazine "JAGRUTI" was released on the occasion.

16.33 CVO attended CVC sponsored vigilance related training programme at Laxenburg, Austria from February 1 to 12, 2016 at International Anti-corruption Agency (IACA). CVO, Midhani, as president, actively coordinated the 13th Anniversary celebrations of Vigilance Study Circle, Hyderabad on July 8, 2016. CVC graced the event as chief guest and addressed the gathering. A panel discussion on "Use of Science and Technology to Combat Corruption" was held during the event.

16.34 About 14 system improvement advisories have been given to Management on issues such as, procurement, recruitment norms, protection of confidential information while tendering, Revision of Manuals, ESI/ PF remittances of casuals etc. Scrutiny of high value procurement

files, low tender response files and others based on the area of operation, intelligence etc. was done during the year. Procurements above ₹1.0 crore have been brought under the Integrity Pact (IP). IP agreements were signed for 47 contracts during the year. Rotational transfer of 18 officials from sensitive posts/area was done. About 60 routine/ surprise checks and examination of annual property returns of 130 executives were carried out during the year.

16.35 Bharat Dynamics Ltd. (BDL): The main focus of the BDL/ Vigilance has been on preventive/ pro-active/ predictive vigilance. In order to achieve this, various vigilance reports along with systemic improvement/ suggestions were sent to the Management.

16.36 IMM Manual and Works Manual were revised and target of 90% of the procurements through e-procurement was achieved. Online system for clearance of bills of contractors was introduced for effective bill tracking. Computerized File Tracking System (FTS) was also introduced. Threshold value for integrity pact has been revised to ₹ 2 crore. e-Recruitment system has been implemented.

16.37 Directorate General of Quality Assurance (DGQA): Vigilance Awareness week was observed from October 31 to November 5, 2016 in all Units/ Establishments as well as at Head Quarter office of DGQA, Technical Directorates/ Administration Directorates.

16.38 Study on system improvement was ordered on the subjects "TA/ DA claims on temporary duty" and "trade inspections" during the year to find out the areas prone to or susceptible to corruption and to give suggestions/ recommendations on measures to be adopted to prevent any scope of corruption.

16.39 Directorate General of Aeronautical Quality Assurance (DGAQA): As a part of vigilance awareness activities, banners with appropriate slogans were displayed and in-house talks were organised during the Vigilance Awareness Week celebrated from October 31 to 5 November 5, 2016.

16.40 The Inspection Notes issued by Field Establishments of DGAQA are constantly monitored at HQs as a proactive and preventive measure. An officer of SAG level at HQ and sufficiently senior level officers at field establishments monitor the vigilance related matters. As per CVC instructions, Field Establishments and officers in HQ were identified as sensitive and the officers holding such postings are rotated every two/ three years to avoid developing of vested interest.

16.41 Action taken by Department of Defence Production: To increase the level of transparency in various activities of Defence PSUs and Ordnance Factory Board, Actionable Points were identified and circulated to all the DPSUs and OFB for necessary action which includes Inter Organisation Audit, Covering 90% contracts under Integrity Pact (IP), reduction in proportion of limited/ single tenders through gradual vendor development, 90% of procurements (by value) through e-Procurement, streamlining the mode of procurement in DPSUs and updation of all Works and Procurement manuals.

16.42 Structured meeting of CVOs of all DPSUs/ OFB was held with Secretary, DP on February 29, 2016. During the meeting, the progress made in implementation of actionable points and other Vigilance related issues was reviewed. The existing threshold value for signing integrity pact was also reviewed to achieve the target of 90% and revised threshold

value for I.P. in respect of each DPSU/ OFB was suggested for covering 90% contracts under Integrity Pact which has been adopted by most of the DPSUs.

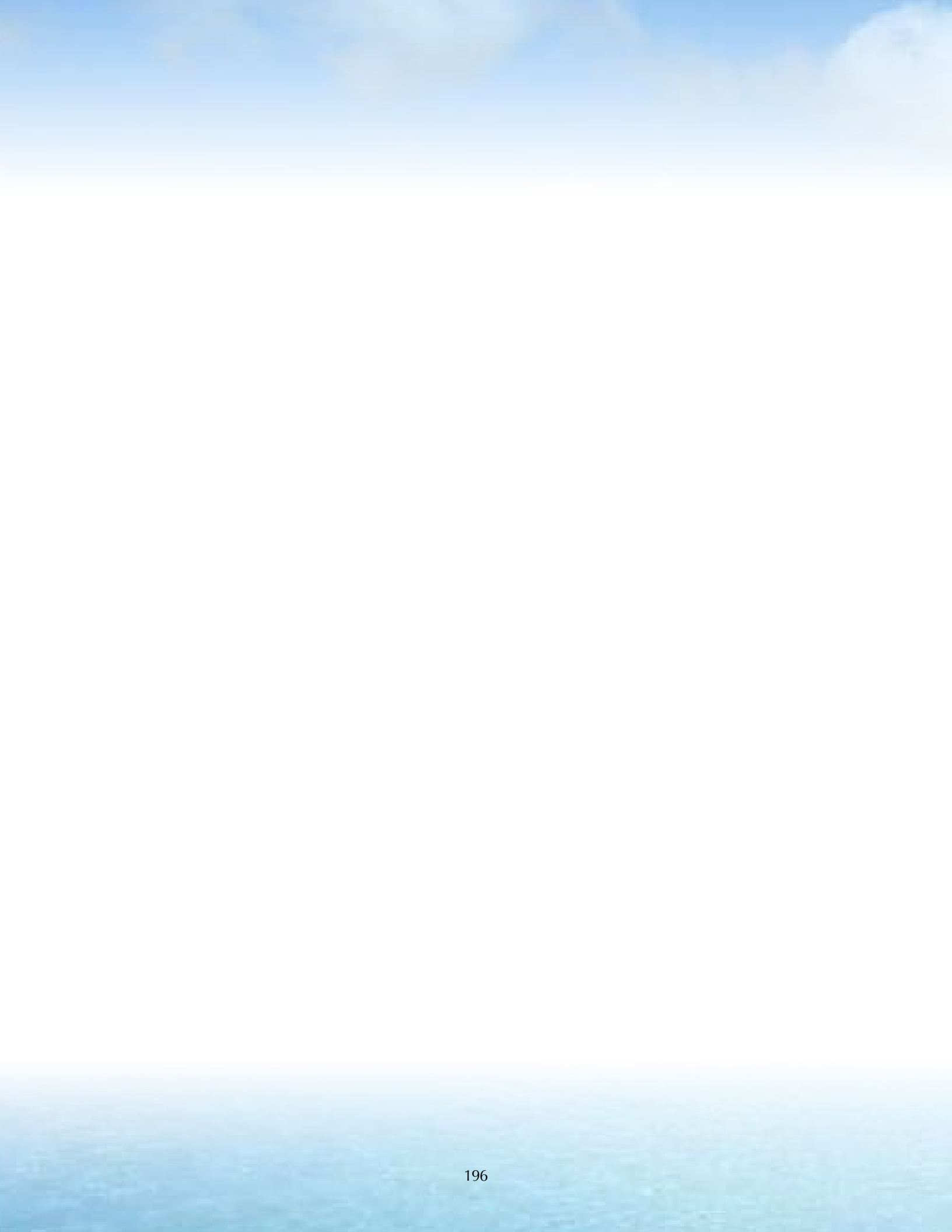
16.43 Interactive sessions were held by DS (Vig)/ DDP with the officers of OFB at five different locations i.e. at Chennai, Kanpur, Kolkata, Nagpur and Pune to sensitise them of the vigilance angle and importance of applicability of rules/ guidelines in the discharge of their duties relating to procurement, purchase and labour contract etc. About 117 officers put together, participated in the interactive sessions.

16.44 During the Year 2016, the DDP/ Vigilance has undertaken following actions in respect of Group 'A' officers of OFB/ DGQA

and Board Level officers of DPSUs under the punitive vigilance:

S. No.	Action Taken	Number of Officers involved
1	Major Penalty imposed	14
2	Minor Penalty imposed	6
3	Warning issued	0
4	Major Penalty Charge Sheet issued	10
5	Minor Penalty Charge Sheet issued	1





EMPOWERMENT AND WELFARE OF WOMEN



Empowerment and Welfare of Women

17.1 The role of women has been increasing steadily in the field of national defence. Women are employed in Defence Production Units, Defence Research & Development Laboratories and in the Armed Forces. With the induction of women in various branches of the Armed Forces like flying, logistics and law, a larger role is envisaged for them.

INDIAN ARMY

17.2 **Women Officers in the Army:** Women officers have been serving in the Armed Forces for about 80 years and have served with competence and distinction. They were inducted in the Military Nursing Service in 1927 and in the Medical Officers cadre since 1943. In the Armed Forces Medical Services, there are both permanent and Short Service Commission Officers (SSCOs).

17.3 In a significant step which would attract more women in the Army, the tenure of Women Officers in Short Service Commission has been increased from 10 years to 14 years. Besides, their promotional avenues have been substantially enhanced. Earlier, they were eligible for only one promotion, viz., to the rank of Major after 5 years of service. They are now granted time-scale substantive promotions to the rank of Captain, Major and Lt. Colonel Rank after 2, 6 and 13 years of reckonable service respectively. This is at par with the promotions available to the Permanent

Commission Officers. In addition, with a view to ensuring gender equality, the training period of women officers in the Army in Short Service Commission has been increased from 24 weeks to 49 weeks, to be at par with male Short Service Commission Officers.

17.4 Keeping in view the role and responsibility of the Armed Forces in defending the nation and protecting the territorial Integrity of the country, the future policy on induction and employment of women in Armed Forces has been enunciated in November, 2011, as under:

- (i) Women Officers may continue to be inducted as Short Service Commission Officers (SSCOs) in Branches/ Cadres where they are being inducted presently in the three Services;
- (ii) Women SSCO's will be eligible for consideration for grant of permanent commission alongwith Men SSCO's in specific Branches in the three Services viz. Judge Advocate General (JAG) and Army Education Corps (AEC) of Army and their corresponding branches in Navy and Air Force; Naval constructor in Navy and Accounts branch in Air Force.
- (iii) In addition to the above, in the Air Force, women SSCO's will be eligible alongwith male SSCO's, for consideration for grant of permanent commission in

Technical, Administration, Logistics and Meteorology Branches.

17.5 The grant of permanent commission is subject to the willingness of the candidate and service specific requirements, availability of vacancies, suitability, merit of the candidate as decided by each Service.

INDIAN NAVY

17.6 The Indian Navy is committed to the welfare, well-being and dignity of the women. It is a constant endeavour of Indian Navy to provide maximum support to women employees and women family members in order to maintain high morale and motivation at all times. IN has taken concerted efforts to ensure empowerment of women employees and their active participation in activities/ work at respective units. The following measures have been implemented to ensure women empowerment and safe working environment for women employees:

- (a) Creation of positive environment by giving freedom for women at workplace and equal status with men which enables development of women by realising their full potential.



All Women Crew of IN Sailing Vessel Mhadei at Mauritius

- (b) Equal participation/ involvement of women employees in decision making or activities of the unit/ establishment at all levels.
- (c) Sensitisation of all employees to acquire equal rights with men and congenial atmosphere at workplace.
- (d) Elimination of violence/ all forms of harassment of women employees, whether physical or mental, at workplace.

17.7 **Women Officers:** Women are being inducted into the Navy, as Short Service Commission (SSC) officers in the Executive Branch (Observer, ATC, Law & Logistic), Education Branch and the Naval Architecture of the Engineering Branch. The Government also approved grant of Permanent Commission prospectively to the Short Service Commission officers, for both men and women, of the Executive Branch (Law Cadre), Education Branch and Engineering Branch (Naval Architecture). In March 2016, approval has been accorded for induction of women Short Service Commission (SSC) officers as Pilots in Maritime Reconnaissance (MR) stream and in the Naval Armament Inspectorate (NAI) cadre. The inductions are planned commencing mid-2017.

17.8 "Visakha Guidelines" and "The Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013" have been implemented at IHQ MoD (Navy), all Commands and outlying units. Committees have been constituted at the three Commands to inquire into complaints of sexual harassment of women employees at workplace.

Welfare Activities

17.9 **Naval Regimental System (NRS):** In keeping with the traditional camaraderie and

brotherhood that is prevalent in the Defence Services, a Naval Regimental System (NRS) was established in January 2011 to institutionalise the support system in providing proactive and extended support to Widows/ NoK of deceased naval personnel. Under this system, seven Command Regimental System Officers (CRSOs) and their teams reach out to every family after the demise of a naval colleague, immaterial of whether the individual died in harness or after retirement and ensure that their welfare and accrual of all entitled dues reach them in time.

17.10 Reaching Out to Widows: The Directorate of Ex-Servicemen Affairs (DESA) at IHQ MoD (N) is tasked with resettlement and rehabilitation of widows of naval personnel, who have died in harness or post-retirement. At present, assistance in the form of various scholarship schemes, employment opportunities, finances and legal matters is being provided on a case to case basis.

17.11 Resolution of Impending Issues: To facilitate easy resolution of issues impending on the well-being of Naval fraternity, the following have been instituted:

- (a) Directorate of Ex-Servicemen Affairs (DESA) has established a 24x7 Toll Free Helpline to enable Veer Naris to reach out to Navy at any time. It has an Integrated Voice Recording Facility for access during off working hours.
- (b) Commodore Bureau of Sailors' Tool Free Help Line to resolve pension related issues.
- (c) Dissemination of important issues through IRFC website.
- (d) E-mail IDs for interaction with DESA over Internet.

INDIAN AIR FORCE

17.12 Induction of Women Pilots in the Fighter Stream: The IAF has been at the vanguard of providing greater opportunities to women, and has pioneered the entry of women as officers in the flying and ground duty branches. Since 1993, women are being inducted as Short Service Commissioned officers in all branches and streams of the IAF except the fighter stream. The IAF has recently revised Short Service Commission (SSC) scheme to induct women into the fighter stream on an experimental basis for a period of five years. The first batch of three women officers have been commissioned into the fighter stream on June 18, 2016.



IAF Women Pilot in cockpit

17.13 The performance of women pilots on fighter aircraft is to be assessed to ascertain any factors that may be considered restrictive for future employment of women in the fighter stream, with specific reference to the following:

- (a) Impact on Future Combat Employment Philosophies.
- (b) Aero medical issues.
- (c) Cockpit Ergonomics and Aircrew Clothing.

17.14 This scheme is initially aimed at facilitating an examination of IAF's future combat employment philosophies and policies for employability of women in the flying

branch, based on results of this experiment. With implementation of this scheme, women are now eligible for entry into all branches and streams of the IAF, a first amongst the Armed Forces.

INDIAN COAST GUARD

17.15 Indian Coast Guard had started induction of Women Officers from 1997 as permanent appointee Assistant Commandant in General Duty (GD) and Aviation cadre (Pilots). A total of 130 women officers have been inducted till date which also includes women officers as Short Service Appointees (SSA) in General Duty and aviation cadre. It may be noteworthy to mention that the strength of women officers in ICG approximates to about 10% of the total strength.

17.16 The service has taken proactive steps towards empowerment and welfare of Women Officers. They have been employed in combat roles which include Pilots, Observers and aviation support services. They are also employed in equally responsible task in coastal security mechanism. At par with male officers, the women officers are also posted in remotely located stations. In addition, Command appointments in Coast Guard Store depots are also offered to type specialized women officers. All these measures have offered equal opportunities to women officers for career progression and profiling in the service.

17.17 In line with the policies of the Prime Minister for empowering the women, Indian Coast Guard (ICG) has commenced deputing Women Officers for International Maritime Operations. In this regard, an ICG women officer (Deputy Commandant) was part of the Coast Guard Dornier aircraft crew despatched to Male, Maldives for undertaking surveillance of the Maldivian EEZ from October 16 to 21, 2016.



ICG Women Officer, part of ICG Aircraft crew at Maldives towards Empowerment of Women

DEFENCE RESEARCH AND DEVELOPMENT ORGANISATION

17.18 DRDO as an employer is committed for creating a healthy, safe work environment that enables employees to work free from unwelcome, offensive and discriminatory behaviour, which enable them to deliver their best at work without fear of prejudice, gender bias and sexual harassment. It is ensured that women employees are accorded equal opportunities for enhancement of their skills and knowledge and fulfilment of their potential. This has resulted in many women scientists having top positions in DRDO and achieving organizational objectives.

17.19 Every year, DRDO commemorates International Women's Day at national level across the country. A one day national level workshop on "Scientific Women and DRDO - Harnessing Research and Management (SWADHARM-2016)" was hosted by NSTL at Visakhapatnam where more than 250 women scientists, technologists, officers and staff from different laboratories/establishments of DRDO from all over the country participated.

DEPARTMENT OF DEFENCE PRODUCTION

17.20 Ordnance Factory Board (OFB): Ordnance Factory Board has already implemented the Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013. All OFs ensure availability of basic amenities like proper working area, separate toilets, restrooms, crèche etc. for women employees.

17.21 Hindustan Aeronautics Ltd. (HAL): The strength of women employees as on December 31, 2016 in HAL is 2445. All Women employees are provided with equal opportunities for advancement in their career. All statutory welfare amenities are being extended to women employees of the Company. HAL is a Member of the Women in Public Sector (WIPS) Forum. The Company extends financial assistance to the Forum by way of advertisement etc.

17.22 Bharat Electronics Ltd. (BEL): BEL has 2100 women employees including in critical leadership positions who play vital roles in business growth. Fair opportunities are provided to women in Recruitment, Career Progression, Learning and Development. "Complaints Committee" constituted towards Prohibition of Sexual Harassment of Women at Work Place and awareness was created to make BEL a safe place.

17.23 Garden Reach Shipbuilders & Engineers Ltd. (GRSE):

- Women representation 4.75%
- Women recruited 6.38%
- GRSE WIPS chapter established
- Common Email-ID created
- Projects Under CSR
 - 21 girls toilets under construction in local schools

- Adopted women ITI Kolkata for upgrading training equipments and infrastructure
- Adopted 3 classes comprising 50% girls child at IICP, Taratala
- 304 disabled women to be given assistive aids / appliances
- Adopted 20 Anganwadi centers of Kolkata, Metiabruz area covering minority community

17.24 Goa Shipyard Ltd. (GSL): An Internal complaints committee for prevention of sexual harassment at workplace and redressal of complaints has been constituted at GSL, with more than 50% women representatives and one independent local NGO representative. Women employees are regularly deputed for training and developmental programs.

17.25 Hindustan Shipyard Ltd (HSL): An internal Complaint Committee has been constituted on prohibition of sexual harassment against women in workplace. A 'Gender Budgeting Cell' has already been constituted with four women officers to act as Nodal Agency for all gender responsive budgeting initiatives. Women officers at appropriate levels are included as members of selection committees and DPCs.

17.26 Mazagon Dock Shipbuilders Ltd. (MDL): During the year, MDL has undertaken following initiatives for empowering women employees:

- (a) Women employees were imparted training on awareness on sexual harassment at work place; work life balance for women employees; stress management at workplace; tailor made MDP programme at IIM Indore; and fire fighting, health & safety.

(b) Internal Complaint Committee has been formed to deal with and redress complaints on sexual harassment.

17.27 BEML Limited: BEML provides equal opportunity in selection, recruitment, promotions, career development and decision making to women employees. All applicable statutory provisions are being complied with. Internal Complaints Committee (ICC) including the Officers under their control exists in all Complexes as per the Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act 2013. The strength of women employees including officers in BEML as on December 31, 2016 is 276.

17.28 Bharat Dynamics Ltd. (BDL): There are 341 women employees working in BDL as on December 1, 2016. The Company amended its Standing Orders, CDA rules and incorporated a chapter on "Prohibition of Sexual Harassment of Women Employees at Work Place". 'Complaints Committee' headed by a senior woman officer also constituted to inquire into complaints. Executive and non-executive women employees are nominated in Trade Union and Officers Association. Company provides necessary facilities for participation in WIPS.

17.29 Mishra Dhatu Nigam Limited (MIDHANI): MIDHANI has extended all facilities as per the statutes for the welfare of all its women employees. At present, there are 72 women employees in the Company consisting of 26 Executives, 2 Non-Unionized Supervisors and 44 Non-Executives.

17.30 Directorate General of Quality Assurance (DGQA): All opportunities and benefits as per the guidelines and policies issued by the Government of India and other statutory authorities from time to time with regard to women empowerment and welfare are being extended.

DEPARTMENT OF EX-SERVICEMEN WELFARE

17.31 Department of Ex-Servicemen Welfare deals with the rehabilitation and welfare of about 30 lakh ex-servicemen including widows of former Armed Forces personnel and their dependent family members. Financial assistance is being provided to the girls and women under various schemes. Kendriya Sainik Board (KSB) provides financial assistance for education and marriage of daughters of ESM, widow re-marriage and vocational training of widows. Widows are also eligible for dual family pension subject to conditions.

17.32 Higher Education scholarship amount is provided to girls under Prime Minister's Scholarship Scheme (PMSS). The number of scholarships under PMSS has been increased from 4000 to 5500 to be divided equally between boys and girls.

17.33 Widows of ESM are eligible for Resettlement Training under Directorate General of Resettlement (DGR). A number of DGR Employment Schemes like Coal Tipper Scheme, Oil Produce Agencies, Surplus Vehicles, Safal Booths, etc. give priority to certain categories of widows of ESM. War widows are exempted from payment of contribution under ECHS.





Matters Dealt with by the Departments of The Ministry of Defence

A. DEPARTMENT OF DEFENCE (Raksha Vibhag)

1. Defence of India and every part thereof, including preparation for defence and all such acts as may be conducive in times of war to its prosecution and after its termination to effective demobilization.
2. The Armed Forces of the Union, namely, Army, Navy and Air Force.
3. Integrated Headquarters of the Ministry of Defence comprising Army Headquarters, Naval Headquarters, Air Headquarters and Defence Staff Headquarters.
4. The Reserves of the Army, Navy and Air Force.
5. The Territorial Army.
6. The National Cadet Corps.
7. Works relating to Army, Navy and Air Force.
8. Remounts, Veterinary and Farms Organisation.
9. Canteen Stores Department.
10. Civilian Services paid from Defence Estimates.
11. Hydrographic Surveys and preparation of navigational charts.
12. Formation of Cantonments, delimitation/ excision of Cantonment areas, local self-government in such areas, the constitution and powers within such areas of Cantonment Boards and authorities and the regulation of house accommodation (including the control of rents) in such areas.
13. Acquisition, requisitioning, custody and relinquishment of land and property for defence purposes. Eviction of unauthorized occupants from defence land and property.
14. Defence Accounts Department.
15. Purchase of food stuffs for military requirements and their disposal, excluding those entrusted to Department of Food and Public Distribution.
16. All matters relating to Coast Guard Organisation, including :-
 - (i) Surveillance of maritime zones against oil spills;
 - (ii) Combating oil spills in various maritime zones, except in the waters of ports and within 500 metres of off-shore exploration and production platforms, coastal refineries and associated facilities such as Single Buoy Mooring (SBM), Crude Oil Terminal (COT) and pipelines;
 - (iii) Central Co-ordinating Agency for Combating of Oil Pollution in the

- coastal and marine environment of various maritime zones;
 - (iv) Implementation of National Contingency Plan for oil spill disaster; and
 - (v) Undertaking oil spill prevention and control, inspection of ships and offshore platforms in the country, except within the limits of ports as empowered by the Merchant Shipping Act, 1958 (44 of 1958).
17. Matters relating to diving and related activities in the country.
 18. Procurement exclusive to the Defence Services.
 19. All matters relating to Border Roads Development Board and Border Roads Organisation.

B. DEPARTMENT OF DEFENCE PRODUCTION (Raksha Utpadan Vibhag)

1. Ordnance Factory Board and Ordnance Factories.
2. Hindustan Aeronautics Limited.
3. Bharat Electronics Limited.
4. Mazagon Dock Limited.
5. Garden Reach Shipbuilders and Engineers Limited.
6. Goa Shipyard Limited.
7. Bharat Dynamics Limited.
8. Mishra Dhatu Nigam Limited.
9. Defence Quality Assurance Organizations including Directorate General of Quality Assurance and Directorate General of Aeronautical

Quality Assurance.

10. Standardisation of defence equipment and stores including Directorate of Standardisation.
11. BEML Limited.
12. Hindustan Shipyard Limited.
13. Development of aeronautics industry and co-ordination among users other than those concerned with the Ministry of Civil Aviation and the Department of Space.
14. Production of aircraft and aircraft component for civil use.
15. Indigenisation, development and production of defence and defence equipment and participation of the private sector in the manufacture of defence equipment.
16. Defence exports and international cooperation in defence production.

C. DEPARTMENT OF DEFENCE RESEARCH & DEVELOPMENT (Raksha Anusandhan Tatha Vikas Vibhag)

1. Apprising, assessing and advising Raksha Mantri on the influence on National Security of emerging developments in Science and Technology.
2. Rendering advice to Raksha Mantri and to the three services and inter-services organizations on all scientific aspects of weapons; weapon-platforms; military operations; surveillance; support and logistics in all likely theatres of conflict.
3. To function, with the concurrence of the Ministry of External Affairs, as the nodal co-ordinating agency of the Ministry of Defence on all matters relating to

- Instruments of Accord with foreign Governments relating to the acquisition of technologies whose export to India is the subject of national security related controls of foreign Governments.
4. Formulation and execution of programmes of scientific research and design, development, test and evaluation, in fields of relevance to national security.
 5. Direction and Administration of agencies, laboratories, establishments, ranges, facilities, programmes and projects of the Department.
 6. Aeronautical Development Agency.
 7. All matters relating to certification of the design air worthiness of military aircrafts their equipment and stores.
 8. All matters relating to the protection and transfer of technology generated by the activities of the Department.
 9. Scientific analysis support and participation in the acquisition and evaluation proceedings of all weapon systems and related technologies proposed to be acquired by the Ministry of Defence.
 10. To render advice on the technological and intellectual property aspects of the import of technology by production units and enterprises manufacturing, or proposing to manufacture, equipment and stores for the Armed Services.
 11. To deal with reference made under section 35 of the Patents Act, 1970 (39 of 1970).
 12. Financial and other material assistance to individuals, institutions and bodies corporate, for study and for the training of manpower on aspects of Science and Technology that bear on national Security.
 13. In consultation with the Ministry of External Affairs, international relations in matters connected with the role of Science and Technology in national security, including :
 - (i) matters relating to relations with Research Organizations of other countries and with Inter-governmental agencies, particularly those which concern themselves, inter alia, with the scientific and technological aspects of national security.
 - (ii) Arrangements with Universities, educational and research-oriented institutions or bodies corporate abroad to provide for foreign scholarships and the training of Indian scientists and technologists under the administrative control of the Department.
 14. Execution of works and purchase of lands debitable to the budget of the Department.
 15. All matters relating to personnel under the control of the Department.
 16. Acquisition of all types of stores, equipment and services debitable to the budget of the Department.
 17. Financial sanctions relating to the Department.
 18. Any other activity assigned to, and accepted by, the Department through understandings or arrangements with any other Ministry, Department, Agency of the Government of India whose activities have a bearing on the scientific and technological aspects of national security.

D. DEPARTMENT OF EX-SERVICEMEN WELFARE (Poorva Senani Kalyan Vibhag)

1. Matters relating to Armed Forces Veterans (Ex-Servicemen), including pensioners.
2. Armed Forces Veterans (Ex-Servicemen) Contributory Health Scheme.
3. Matters relating to Directorate General of Resettlement and Kendriya Sainik Board.
4. Administration of :
 - a) the Pension Regulations for the Army 1961(Parts I and II);
 - b) the Pension Regulations for the Air Force, 1961 (Part I and II);
 - c) the Navy (Pension) Regulations 1964; and
 - d) the Entitlement Rules to Casualty Pensionary Awards to the Armed Forces Personnel, 1982.

E. DEFENCE (FINANCE) DIVISION (Raksha Vitta Vibhag)

1. To examine all Defence matters having a financial bearing.
2. To render financial advice to the various

functionaries of Ministry of Defence and the Services Headquarters.

3. To act as integrated Finance Division of Ministry of Defence.
4. To assist in the formulation and implementation of all schemes/proposals involving expenditure.
5. To assist in the formulation and implementation of Defence Plans.
6. To prepare Defence budget and other estimates for the Defence Services, Civil Estimates of Ministry of Defence, estimates in respect of Defence Pensions and to monitor the progress of the scheme against the budget.
7. To exercise post-budget vigilance to ensure that there are neither considerable shortfalls in expenditure nor unforeseen excesses.
8. To advise heads of branches of the Armed Forces Headquarters in the discharge of their financial responsibility.
9. To function as the accounting authority for the Defence Services.
10. To prepare the Appropriation Accounts for the Defence Services.
11. To discharge the responsibility for payments and internal audit of Defence expenditure through the Controller General of Defence Accounts.



Ministers, Chiefs of Staff and Secretaries who were in Position from January 1, 2016 onwards

RAKSHA MANTRI

Shri Manohar Parrikar

From November 9, 2014 onwards

RAKSHA RAJYA MANTRI

Rao Inderjit Singh

From May 27, 2014 to July 5, 2016

Dr. Subhash Ramrao Bhamre

From July 5, 2016 onwards

DEFENCE SECRETARY

Shri G. Mohan Kumar

From May 25, 2015 onwards

CHIEF OF ARMY STAFF

General Dalbir Singh

PVSM, UYSM, AVSM, VSM, ADC

From January 1, 2014 to December 31, 2016

General Bipin Rawat,

UYSM, AVSM, YSM, SM, VSM

From January 1, 2017 onwards

SECRETARY DEFENCE PRODUCTION

Shri Ashok Kumar Gupta

From May 25, 2015 onwards

CHIEF OF NAVAL STAFF

Admiral R.K. Dhowan,

PVSM, AVSM, YSM, ADC

From April 17, 2014 to May 31, 2016

Admiral Sunil Lanba,

PVSM, AVSM, ADC

From June 1, 2016 onwards

SECRETARY EX-SERVICEMEN WELFARE

Shri Prabhu Dayal Meena

From November 1, 2014 onwards

CHIEF OF AIR STAFF

Air Chief Marshal Arup Raha,

PVSM, AVSM, VM, ADC

From January 1, 2014 to December 31, 2016

Air Chief Marshal B.S. Dhanoa,

PVSM, AVSM, YSM, VM, ADC

From January 1, 2017 onwards

SECRETARY (DR&D)

Dr. S. Christopher

From May 29, 2015 onwards

SCIENTIFIC ADVISOR TO RAKSHA MANTRI

Dr. G. Satheesh Reddy

From June 5, 2015 onwards

SECRETARY DEFENCE FINANCE

Shri S.S. Mohanty

From October 1, 2015 to May 31, 2016

Ms. Shobhana Joshi

June 1, 2016 to August 31, 2016

Shri S.K. Kohli

September 30, 2016 onwards

Summary of Important Audit Observations - Ministry of Defence

REPORT NO. 17 OF 2016

1. Performance Audit on Construction of Indigenous Aircraft Carrier

Project approval for construction of the Indigenous Aircraft Carrier had been accorded by the Cabinet Committee on Security in May, 1999, with revisions in October 2002 and July 2014. The requirement for a ship of 37,500 tons was identified in 1990. However, Preliminary Staff Requirements was promulgated in August, 2004, after 14 years. Delays in conclusion of external design contracts and supply of major pre-launch equipment stretched the phase-I contract timelines. Incorrect estimation of man-hour per ton to be utilised for fabrication and outfitting in the Phase-I contract led to undue benefit to the shipyard to the tune of ₹ 476.15 crore. The Ministry and the shipyard are not able to assess the physical state of construction of the ship due to non-inclusion of essential formats of progress reporting in the shipbuilding contracts. MiG 29K, the chosen aircraft for the carrier, continues to face operational deficiencies due to defects in engines, airframe and fly-by-wire system. The delivery of the option clause aircraft scheduled between 2012 and 2016 is much ahead of the delivery schedule of the IAC, in 2023 as projected by Cochin Shipyard Limited. With INS Vikramaditya in service and INS Viraat likely to be de-commissioned in 2016-17, continuous shifting of timelines of delivery of the Indigenous Aircraft Carrier will adversely impact naval capabilities.

2. Non-delivery of sewage barges

Acquisition of sewage barges initiated by Indian Navy is yet to fructify because of its failure to carry out the required capacity assessment of the shipyard resulting in non-achievement of core objective of prevention of sea pollution even after spending ₹ 25.97 crore.

3. Avoidable expenditure of ₹ 9.97 crore on the procurement of armament for an aircraft

The Ministry concluded a contract on March 8, 2010 with the firm for procurement of armament for MiG 29K/ KUB by providing price escalation to the firm although an option clause was valid till March 27, 2010 under an earlier contract, resulting in an avoidable expenditure of ₹ 9.97 crore

4. Extra expenditure in procurement of Magnetrons

Integrated Headquarter, Ministry of Defence (Navy) procured Magnetrons for the refurbishment of Transmitter Receiver Units (TRUs) of Radar System of Sea King helicopters from a particular firm at an extra expenditure of ₹ 8.68 crore. Even after refurbishment, only five TRUs were serviceable against a requirement of 17 TRUs resulting in limited exploitation of the Sea King fleet for local missions only.

5. Avoidable procurement of Radio Receiver Beacons for naval ships

Lack of coordination amongst various

Directorates/ Establishments and ships within Navy resulted in avoidable procurement of five Radio Receiver Beacons worth ₹ 6.19 crore.

6. Non-levy of liquidated damages in the procurement of pumps

Ministry of Defence accorded extension for delivery of pumps with levy of liquidated damages. However, Integrated Headquarters Ministry of Defence (Navy) failed to levy liquidated damages amounting to ₹ 1.56 crore on the firm for the delayed supplies.

7. Under Recovery of ₹ 6.18 crore due to non-revision of rates of landing charges

Indian Navy's failure to submit the details of capital expenditure and maintenance charges to Airports Economic Regulatory Authority of India (AERA), denied them the revised tariff rates for the landing charges for the Goa Airport since July 2013 resulting in under recovery of ₹ 6.18 crore.

8. Unfruitful expenditure of ₹ 5.73 crore on acquisitions of land for setting up an Air Enclave by Coast Guard

Failure of the Ministry of Defence/ Coast Guard/ Defence Estate Office (Visakhapatnam) to take cognizance of the Gazette notification entailing requirement of 'No Objection certificate' by the Navy resulted in non-setting up of Air Enclave for the Coast Guard on the land acquired from the Visakhapatnam Port Trust at a cost of ₹ 5.73 crore. This in turn affected the operational preparedness of the Coast Guard besides rendering the investment unfruitful.

REPORT NO. 18 OF 2016

About the Report

The Report of the Comptroller & Auditor General (C&AG) of India relates to matters arising from the test audit of transactions of IAF, Military Engineer Services, Hindustan

Aeronautics Limited and related records of the Ministry of defence. An amount of ₹ 11.20 crore was recovered after having been pointed out by Audit. Highlights of important findings included in the Audit Report are detailed in the subsequent paragraphs:

I. Audit of air HQ Communication Squadron (AHCS)

Utilization of current Very Important Persons (VIP) fleet was low and its low utilization observed in C&AG's Audit Report of 1998, was further reduced. Significant flying efforts went in training of pilots although for Embraer aircraft and Mi-8 helicopter the training was lower than that prescribed in Air Force Orders.

The controls designed to ensure that other entitled persons (OEPs) utilized the VIP fleet only in inescapable cases for routes connected by commercial air service were not working. Detention charges amounting to ₹ 32.25 crore were not raised/ levied.

Procedure for authorization of VIP flights for senior service officers was not followed. Further despite assurance given by MoD in Action Taken Note, Indemnity Bonds and Duty Flight Certificate were not being obtained from users of airlift.

II. Acquisition and operation of C-17 Globemaster III aircraft

IAF procured (June 2011) ten C-17 Globemaster III aircraft and associated equipment at a total cost of USD 4,116 million (₹ 18645.85 crore) from Government of United States of America (USG) under Foreign Military Sales (FMS) route. There was delay in completion of specialist infrastructure and setting up of simulators required for training to pilots and loadmasters was also delayed. There was under-utilisation of operational capabilities of C-17 aircraft partially due to non-availability of runway with

appropriate pavement classification number (PCN) and lack of ground equipment at various bases.

III. Procurement of 14 additional Dornier aircraft

Indian Air Force (IAF) worked out the requirement of Dornier aircraft at below the envisaged utilisation rate resulting in procurement of 14 additional aircraft costing ₹ 891 crore.

IV. Refurbishment of 'X' system

IAF failed to timely conclude contract which led to extra expenditure of ₹ 19.31 crore due to rate revision by OEM. The Total Technical Life (TTL) of 104 'X' systems expired in April, 2009, but even after lapse of over six years and incurring expenditure of ₹ 101.52 crore, efficacy of 'X' system was doubtful.

V. Excess provision of hangars resulting in avoidable expenditure of ₹ 24.28 crore

Incorrect projection of requirement resulted in excess provision of hangars at an avoidable cost of ₹ 24.28 crore.

VI. Irregularities in drafting tender resulting in excess payment

Insertion of irregular price adjustment clause in the contract for construction of infrastructure for Medium Light Helicopter (MLH) resulted in extra payment of ₹ 4.27 crore as the contractor was found using excess cement continuously.

VII. Excess provision of 200 seats capacity in an Auditorium

There was excess provision of 200 seats capacity in an Auditorium sanctioned in March 2013 for Air Force Station, Maharajpur in Gwalior due to deviation from Scale of Accommodation-Defence Services 2009, which resulted in an extra provision of ₹ 1.29 crore in sanction.

VIII. Avoidable creation of permanent assets at a cost of ₹ 1.10 crore

Air Force Station (AFS) Thanjavur created permanent infrastructure by using provisions meant for exceptional circumstances, for housing temporary unmanned Aerial Vehicle (UAV) squadron which operated only for two months at the AFS.

IX. In-effective usage of Access Control System

Access Control System (ACS) procured for 100 AF units at ₹ 13.65 crore had shortcomings. Further, in spite of procurement of add-on facilities to enhance its utility at additional ₹ 7.38 crore, the utilisation of the ACS was ineffective.

X. Irregular payment of Transport Allowance

Transport Allowance was paid even while AF officers/ Airmen were absent from their places of regular duty for full calendar month, which was in contravention to orders of the Ministry of Defence and Air HQ.

XI. Avoidable expenditure of ₹ 131.45 lakh due to payment of electricity tax

Despite provisions for exemption of electricity tax available under Article 287 of Constitution of India, Air Force Station New Delhi paid ₹ 131.45 lakh on account of electricity tax to New Delhi Municipal Corporation during April 2009 to December, 2014.

XII. Avoidable expenditure of ₹ 80.07 lakh on repair of an aero engine

Failure of the Indian Air Force (IAF) to ensure compliance to the contractual provisions against unauthorized trans-shipment led to avoidable payment on repair of the aero engine damaged in transit.

REPORT NO. 19 OF 2016

Functioning of Director General Resettlement

Director General Resettlement (DGR) was formed with the aim of empowering retiring/retired service personnel with additional skills through training and further assisting them in choosing second career through employment/self-employment schemes. We however observed that DGR was not able to meet these objectives in re-employing or rehabilitating the ex-servicemen and thereby expectations of nearly 60,000 service personnel retiring each year could not be fully met. After incurring an expenditure of ₹ 90.98 crore on training during last five years, there was no mechanism in place to ensure that the trained personnel could eventually find re-employment. The existing employment and self-employment schemes being run by DGR were more than 10 years old and had therefore lost their effectiveness in the changing work environment. We found no fresh employment or self-employment schemes were introduced in the last ten years.

(Paragraph 2.1)

Supply Chain Management of Rations in Indian Army-Follow up Audit

Ministry implemented only two out of 12 recommendations of PAC directly related to activities of Supply Chain Management of ration despite acceptance and assurance given in March 2013. As a result, activities related to provisioning/ procurement, testing, distribution of ration could not be improved and satisfaction level of the troops, particularly in Northern and Eastern Command remained low.

(Paragraph 2.2)

Procurement of Environmental Control Units found incompatible during exploitation

Despite persistent overheating of the engine, the user trial team recommended the procurement of Environmental Control Unit (ECU) for fitment in Infantry Combat Vehicles. Accordingly 2,077 ECUs worth ₹ 219.48 crore were procured in 2009 and 2010. The fitment of ECUs could not however be carried out due to overheating of ICV engines and reduction of its efficiency. The ECUs are therefore lying without any effective use.

(Paragraph 2.3)

Non-deduction of income tax on field allowances granted to Junior Commissioned Officers in the Army

Pay and Accounts Officers (Other Ranks) as Drawing and Disbursing Officers did not recover income tax on amount of field allowances in excess of exemption limit paid to Junior Commissioned Officer in the Army. The amount of such unrecovered tax worked out to ₹ 5.05 crore for the period from 2008-09 to 2012-13.

(Paragraph 2.4)

Unwarranted procurement of Radio Sets for trial purposes

Army HQ procured 322 radio sets valuing ₹ 21.90 crore in excess of the requirement for field trial in 2006. These sets procured for Armoured Fighting Vehicles were not used for the trials and require an up gradation to make them compatible with the Star V Mark II specification, which entails an extra expenditure of ₹ 11.27 crore.

(Paragraph 3.1)

Irregular attachment of service personnel with private institute

While Army College of Medical Sciences was in the process of establishing its own teaching facilities, Ministry sanctioned the use of part faculty from Government run hospitals, for a period of five years. Army Headquarters however, attached service personnel for clerical jobs from various Corps/ units, which were not covered under the Ministry's sanction.

(Paragraph 3.2)

Recoveries/ savings and adjustment in accounts at the instance of Audit

Based on audit observations, the audited entities had recovered overpaid pay and allowances, sundry charges, training charges cancelled irregular sanctions and amended annual accounts, having a net effect of ₹ 184.73 crore.

(Paragraph 3.4)

Inordinate Delay in completion of works sanctioned for operational military requirements

Inordinate delay of ten years in construction of an underground operation theatre (UGOT) by Military Engineer Services denied the facility to troops in operations. The work was sanctioned for operational military requirements of military Hospital (MH) and was completed at a cost of ₹ 1.54 crore, after the MH had already moved to a different location. The assets are now lying unutilized.

(Paragraph 4.1)

Improper selection of sites for bridges

Selection of sites without carrying out sub soil investigation (SSI) by Headquarters Director

General Border Roads resulted in subsequent foreclosure of work after the soil strata was found unfit for construction of bridges. Non compliance of specific instructions for carrying out SSI resulted in wasteful expenditure of ₹ 2.53 crore.

(Paragraph 5.1)

Procurement of Cranes without proper need assessment

Against a demand for two lattice cranes, Director General Border Roads procured seven cranes of the capacity more than double of what had been demanded and approved for various Border Road Projects. Due to sheer size and absence of adequate necessity, the cranes procured in 2012 at a cost of ₹ 6.81 crore remained underutilized to an extent of 86 per cent.

(Paragraph 5.2)

Infructuous procurement of material

Defence Research and Development Laboratory procured 1329 kg of C-103 material valuing ₹ 4.83 crore, for development of the scramjet project despite being aware that C-103 material would not resist the high temperature generated in the scramjet engine. The procurement was unwarranted and eventually proved wasteful.

(Paragraph 6.2)

Ordnance Factory Organisation

Extra expenditure due to delay in placement of order

Delay in finalization of the import order due to slippages at various levels of the factory and the Board resulted in extra expenditure of ₹ 4.58 crore in Gun Carriage Factory for procurement of 25 fully formed guns at a higher rate.

(Paragraph 7.2)

Loss of savings due to failure to procure and install equipments

Failure of OFBL to timely procure and integrate (i) Computed Radiography System and (ii) LINAC machines led to consumption of costly X-ray films and chemical towards X-raying of filled shells, resulting in loss of opportunity to effect savings to the tune of ₹ 4.62 crore.

(Paragraph 7.3)

Failure to operationalize a machine

Acceptance of a Machine valuing ₹6.32 crore by Vehicle Factory, Jabalpur without proving the machine for performance and subsequent neglect in preventive maintenance resulted in its breakdown since June 2012.

(Paragraph 7.4)

Blocking up of inventory due to non-replacement of rejected fuses

Failure of Ordnance Factory Chanda to invoke and follow-up on the remedial provisions of the contract on supply of fuses resulted in holding of rejected fuses worth ₹ 6.05 crore.

(Paragraph 7.6)

Defence Public Sector Undertakings

Delay in supply by Defence Public Sector Undertakings (DPSUs)

Inordinate delay in supply of critical weapons and equipment by Defence PSUs during XI Army Plan (2007-12), hampered the modernization and capability enhancement plan of Indian Army. Audit observed that contracts valuing ₹ 30098 crore which account for 63 per cent of the total value of DPSUs contracts concluded by the Ministry during XI Army Plan were delayed. Major reasons for delay were undue time taken in development, delay in successful evaluation of pilot sample, heavy dependence of DPSU on foreign vendors, ambiguity in contractual terms, etc. Besides impacting the Defence preparedness, the delay had financial implications towards loss of interest on payments made to DPSUs. The objective of self-reliance in defence production had also not been achieved.

(Paragraph 8.1)

Avoidable loss due to non-availing of Customs Duty Exemption- Mishra Dhatu Nigam Limited

Failure on part of Mishra Dhatu Nigam Limited to avail exemption and resorting to pay first and claim refund later which was unsuccessful resulted in avoidable extra expenditure of ₹1.30 crore.

(Paragraph 8.2)



Appendix-IV
Position of Action Taken Notes (ATNs) for the year 2016-17 in respect of observations made in the C&AG Reports/PAC Reports

Sl. No.	Year	Details of Para/ PA reports on which ATNs are pending as on 31.12.2016			
		No. of ATNs not sent to Audit by the Ministry even for the first time	No. of ATNs sent to Audit for vetting	No. of ATNs sent but returned with observations and Audit is awaiting their resubmission by the Ministry	No of ATNs which have been finally vetted by Audit but have not been submitted by the Ministry to PAC
1	1989			1	
2	1990	0		1	
3	1991	2			
4	1993	2			
5	1997				1
6	1998	1	1		
7	2001	2			
8	2003	1			1
9	2004	3			
10	2005	1	1		
11	2006	0		1	
12	2007	3			
13	2008	2			
14	2009	3			1
15	2010	0	1		
16	2011	11	1	5	2
17	2012	5	4		5
18	2013	9	5	5	3
19	2014	23	17	12	15
20	2015	23	13	18	3
21	2016	33	5	5	3
	Total	124	48	48	34

