स्वच्छ भारत
एक कदम स्वच्छता की ओर

ANNUAL REPORT 2015-2016

सत्यमेव जयते

MINISTRY OF DEFENCE
GOVERNMENT OF INDIA

Armoured Thrust in Desert Terrain

Front Cover:
(Clockwise)

1) Artillery Guns Guarding the Frozen Frontiers at Siachen
2) An IAF "HAWK" on a routine Training Sortie
3) Indigenously Designed and Manufactured Artillery Gun "DHANUSH"
4) "INS KOLKATA" during International Fleet Review 2016
5) IAF Jaguars in Arrow Head Formation during Republic Day 2016
6) Artillery Barrage by "PINAKA" Multi Barrel Rocket Launcher

Annual Report
2015-16

सत्यमेव जयते

Ministry of Defence
Government of India

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1

SECURITY ENVIRONMENT

India's strategic location and its growing global interactions require engagement on a range of issues that impact on national security with a view to securing vital national interests.

1.1 India's security environment encompasses a complex matrix of regional and global issues and challenges. India's strategic location and its growing global interactions require engagement on a range of issues that impact on national security with a view to securing vital national interests. The need to enhance preparedness to address consequences of instability and volatility in parts of the immediate and extended neighbourhood remains a key priority. At the same time, there are renewed and successful efforts to build stronger defence partnerships with a wide range of friendly foreign countries to enhance international peace and stability.

1.2 The security situation in India's immediate South Asian neighbourhood presents a mixed picture. While there was an improvement in the security and political situation in some countries, political developments caused a worsening of the internal security situation in others. Terrorism, insurgency and sectarian conflict increasingly threaten the stability of the region. Amidst ongoing efforts to impart fresh dynamism to strengthening relations with neighbours in a comprehensive manner, cooperative security approaches are of immediate relevance to the region. India is committed to build security co-operation with all partners in the neighbourhood on the basis of equality, mutual benefit and mutual respect.

1.3 The Indian Ocean Region (IOR) is central to India's growth and security. By virtue of its geo-physical configuration as well as its strategic and economic imperatives, India looks to the seas and Oceans surrounding it. India's peninsular projection into the Indian Ocean Region, astride the vital sea-lanes of the world stretching from the Suez Canal and the Persian Gulf to the Malacca Straits, also links India's ability to engage freely in maritime trade and commerce.

1.4 India is also impacted by developments beyond its immediate neighbourhood and the Indian Ocean region. Developments in West Asia, Central Asia and the Asia Pacific have a direct bearing on India's interests. In all these regions, we are witnessing major political and economic shifts with strategic implications. While many of these transitions are marked by growing volatility and violence, at the same time, inter-linkages of globalisation and deepening economic interdependence are also increasingly evident. Consequent re-calibrations and dynamics in the global balance of power, that are also driven by the rise of emerging economies and multi-polarity, have created further uncertainties in the strategic outlook. These factors are increasingly being manifested in competition and contestation between states.

1.5 The continuing economic slowdown in the West, Japan and China, combined with the rapid and sustained fall in energy prices directly affecting major oil producing countries such as Russia, have depressed the global economic outlook. The economies of other regions are also being adversely affected, as manifested through currency fluctuations, decline in exports and lower direct investment flows.

1.6 Though the possibility of a full-scale conventional war between states has comparatively receded as compared to the 20th Century, the rise of new threats and drivers of conflict, including proxy wars as part of continuing efforts by some states to destabilise other states, have created a regional and global security landscape that in some ways is even more challenging. Rising nationalism, increasing military spending, spiralling migration and refugee flows due to man-made and natural crises, easy availability of weapons and intense competition for natural resources provide added volatility to existing fault lines.

1.7 Terrorism and the activities of terrorist organizations are perhaps the most serious threat to peace and security. The use of terrorism as an instrument of policy by a few states has exacerbated intra and inter-State conflicts. Terrorist groups have leveraged new technologies, particularly in cyberspace, for trans-national mobilization and ideological radicalization, especially of the youth. They also continue to gain logistical and financial support for their activities from disparate sources, including some states, and are increasingly able to threaten regions well beyond their base areas. Notwithstanding the rise of more malevolent terrorist groups, the Af-Pak region in India's neighbourhood continues to be the epicentre of international terrorism. There is continuing concern over terrorist threats emanating from India's neighbourhood and the transnational linkages through which such groups are being sustained.

1.8 Peace and stability in various regions of the world are marred by the proliferation of weapons of mass destruction. In particular, the threat of nuclear terrorism continues to be a major international security concern, notwithstanding international efforts to strengthen nuclear security and to prevent non-State actors from acquiring nuclear materials.

1.9 Shifts in the global balance of power as reflected in recent developments in the Asia-Pacific region, have introduced new dimensions in military and diplomatic interactions among the major powers and regional states. This has been manifested in renewed maritime disputes, changes in military posture and great power rivalry, all of which have added to complexities of the security situation in the region. In particular, the on-going contestations over island territories in the Asia Pacific have fuelled regional tensions that could seriously strain the cooperative structures that have enabled a rapid growth of the Asia Pacific region as an engine of global growth. With North Korea conducting further nuclear and missile tests, the situation on the Korean peninsula also remains fraught.

1.10 India has major strategic interests as well as economic and commercial stakes in continued peace and stability in the Asia Pacific region. India's view is that all countries must exercise restraint and resolve

bilateral issues diplomatically and without recourse to the use or threat of use of force. India supports freedom of navigation in international waters and the right of passage, in accordance with international law. India believes that the current regional security landscape calls for a cooperative and inclusive approach. On its part, under the 'Act East' policy which places renewed emphasis on engagement with the Asia Pacific, India has been an active participant in various bilateral as well as multilateral fora with a focus on security matters such as the East Asia Summit, ADMM – Plus and ASEAN Regional Forum (ARF). There is also a need to further improve regional responses to challenges such as transnational crime, terrorism, natural disasters, pandemics, cyber security as well as food and energy security.

1.11 Central Asia continues to be of strategic interest, both due to its location and resources as well as in view of recent developments in Eurasia and West Asia. India has focussed on developing its political, economic and security partnerships with all Central Asian Republics. There are indications that the region is being targeted by radical terrorist groups that seek to undermine the secular regimes in these countries. India is also keen to expand its energy basket by deeper engagement in this sector with Central Asian countries that are major energy producers. There is also a mutuality of economic interest in respective markets as a destination of exports and investment, especially given efforts at consolidating the Eurasian economic space. The changes in Iran open up new avenues for establishing regional connectivity between Central Asia and India that would enable access to a wide range of natural resources in the region. Iran occupies a significant place in the economic and security calculus of the region. India has welcomed the nuclear agreement between the E3 + 3 and Iran.

1.12 The West Asian region has progressively become embroiled in violence and instability in the wake of the political transitions ushered in by the Arab Spring which promised to bring about fundamental political and socioeconomic transformations in many countries in the region. However, this has been accompanied by the mushrooming of a number of violent non-state actors, especially terrorist groups. Major sectarian fault-lines have also been thrown open, thereby fracturing the internal cohesion of several countries. India has vital stakes in the region, in terms of diaspora, trade, energy, remittances, and security. Continuing violence and instability in West Asia and the Gulf, which is part of India's extended neighbourhood, could impact India's diverse interests in the region. The situation in Syria has deteriorated into rivalry and competition between great powers and major regional actors. The scenario in Iraq remains of growing concern, especially the rise of non-state actors that threaten not just regional stability but have shown the capacity to radicalize individuals into carrying out terrorist attacks in other parts of the world. The fusing together of the Syrian conflict and the crisis in Iraq could pose a major challenge, with heightened extremist and sectarian overtones. India has expressed deep concern at the violence and loss of human lives in Syria and has consistently called for an inclusive and comprehensive political solution that takes into account the legitimate aspirations of the Syrian people. India has also expressed firm support to Iraq in its fight against international terrorism

and in its efforts to preserve its unity and territorial integrity. Tensions between Israel and Palestine are also a matter of concern. India supports a negotiated solution resulting in a sovereign, independent, viable and united State of Palestine, living within secure and recognized borders, side by side at peace with Israel as endorsed in the Quartet Roadmap and relevant UNSC Resolutions.

1.13 Several parts of Africa continue to be in turmoil, as violent insurgencies and terrorist actions have progressively made their presence felt in North, East and West African countries. Of particular concern is the growing influence of terrorist organizations. While, the threat from piracy in the Western Indian Ocean has diminished, the problem has resurfaced in the Gulf of Guinea in which a number of Indian seafarers have been affected. The activities of terrorist outfits in West Africa pose a growing threat to the stability of states in the region. The linkages between local groups and terrorist organisations outside the region are a matter of concern. India has historic ties with several African nations and has sought to deepen its bilateral ties with African countries through the strategic initiative of the India-Africa Forum Summit (IAFS) mechanism that seeks to promote regional and continent-level political and economic cooperation with African countries.

Internal Security Situation

1.14 The challenges to internal security in India can be categorized into four broad 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. The Government has been making systematic and unrelenting efforts to counter these threats and, as a result, the internal security situation in the country is firmly under control. There is steep decline in terror attacks in the hinterland and the violence perpetrated by LWE. However, developments in Jammu & Kashmir and Punjab have been a cause of concern, especially the cross-border terror attacks and trafficking of arms & narcotics.

1.15 The overall security situation in J&K remains stable in spite of the focused efforts of separatists and terrorist tanzeems to disrupt the prevailing peace. This was primarily due to the protracted operations of the Security Forces in the hinterland and effectiveness of the counter infiltration grid on the Line of Control/International Border. However radicalization and fresh recruitment in South Kashmir is a cause of concern. External factors, including the changing situation in Pakistan and Afghanistan, may also impact the internal situation in Jammu & Kashmir.

1.16 The security situation in the North Eastern States has been gradually improving in terms of reduction in number of violent incidents and lower civilian casualties. The number of violent incidents has come down from 1025 in 2012 to 574 in 2015 and the number of civilians killed has come down from 97 to 46 in the same period. The states of Tripura, Mizoram and Sikkim are by and large, peaceful. In Arunachal Pradesh, barring a few incidents, there is general atmosphere of peace. In Manipur and Nagaland there was increase in violence against Security Forces by the extremist groups in 2015 in the wake of unilateral abrogation of ceasefire by NSCN/K. In Meghalaya, security forces were able to contain the violent activities of the militant

groups. The signing of the Framework for Peace between the Government of India and the National Socialist Council for Nagalim (Issac-Muviah) [NSCN (I-M] in August 2015 was a positive step towards ending the country's oldest insurgency. The extradition of Anup Chetia, a prominent United Liberation of Front of Asom (ULFA) leader, by Bangladesh to India in November 2015 was an encouraging development that may help in the success of peace talks between the Government of India and ULFA (pro talk) leaders. Successful counter insurgency operations against the National Democratic Front of Bodoland – Songjibit [NDFB (S)] and the Garo National Liberation Army (GNLA) by the security forces have dealt a severe blow to the fighting capabilities of these insurgent groups. Talks are continuing with NDFB (P) and (RD) factions to resolve Bodo issues.

1.17 Left Wing Extremism (LWE) continues to be an area of concern to the internal security of the country. However, LWE violence has been declining over the years due to various efforts of the Government such as greater presence of security forces across the LWE affected States, loss of cadres/ leaders on account of arrests, surrender and desertions, better monitoring of development schemes and insurgency fatigue among Maoist cadres.

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2

ORGANISATION AND FUNCTIONS OF THE MINISTRY OF DEFENCE

Prime Minister onboard INS Vikramaditya during Combined Commanders' Conference-2015

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.

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.

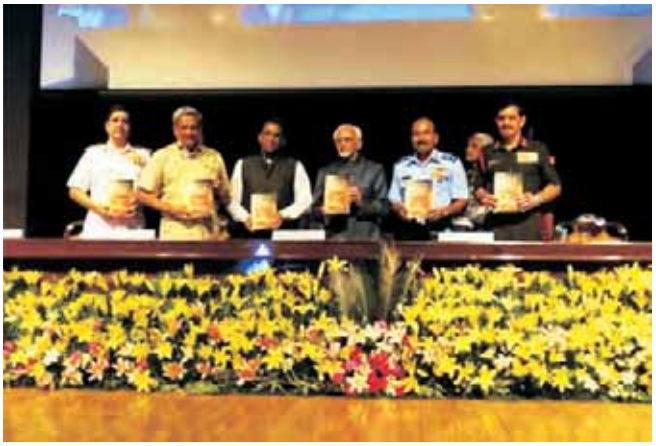
2.5 A list of subjects dealt with by various Departments and Finance Division of the Ministry of Defence is given in **Appendix-I** to this report.

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 Human Assistance and Disaster Relief (HADR) operations through DCMG and prioritising/ streamlining procurements. Salient achievements of HQ IDS, during the ensuing year, are enunciated in succeeding paras.

2.8 **Tri Service Seminar to Commemorate Golden Jubilee of 1965 War:** As part of celebrations to commemorate 50 years of the 1965 war, a national level Tri-Service Seminar was organised at Manekshaw Centre on September 1 & 2, 2015 under the aegis of HQ IDS to reminisce and analyse the events of the War. The Chief Guest for the seminar was the Vice President and the event was attended by senior dignitaries including Raksha Mantri, Service Chiefs, Ex Service Chiefs and senior veterans besides other distinguished personalities.



2.9 **Humanitarian Assistance and Disaster Relief (HADR) Operations:** HQ IDS played a pivotal role in coordinating the Armed Forces response during Humanitarian Assistance and Disaster Relief (HADR) Operations, both within and outside the country.

2.10 During the year, HQ IDS coordinated major HADR Operations to include Tamil Nadu floods in December 2015 wherein the Armed Forces rescued 23000 persons and distributed 70.2 Tons of food packets. The Indian Armed Forces under the aegis of HQ IDS won international accolades for HADR operation conducted during 'OP MAITRI' Nepal earthquake in April 2015 and 'OP RAHAT' the large scale evacuation of both Indian and foreign nationals from Yemen.

2.11 **Procedure for Integrated Disaster Relief Management:** With the view to render comprehensive support to the national effort in disaster relief operations, a procedure for centralising Disaster Relief Operations was formulated and incorporated in revised SOP of HADR by the Indian Armed Forces. This will further simply procedures to render support during disaster relief operations.

2.12 **Coordinated Patrol (CORPAT):** The Ships and Aircrafts of Andaman and Nocobar Command participated in coordinated Patrols "CORPAT' alongwith the Navies of Thailand, Indonesia and Myanmar. The aim is to enhance mutual under- standing and interoperability between the Navies and prosecute vessels engaged in unlawful activities by undertaking joint patrolling. During the reporting year five cycles of CORPAT were conducted.

Exercise with Friendly Foreign Countries

2.13 **ARF Disaster Relief Exercise (DIREX):** INS Saryu with Integral Helo (INCH) participated in ASEAN Regional Forum (ARF) Disaster Relief Exercises (DIREX) 2015 at Penang, Malaysia from May 24-28, 2015, co-hosted by Malaysia and PRC. The Exercise had a wide representation from 16 countries and representatives from NDRF, UN and Red Cross.

2.14 **Cyber Security Centre for Mongolian Armed Forces:** As a follow up of the training imparted to Mongolian Armed Forces in 2014 in the cyber domain, a MoU was signed between Mongolia and India for establishment

of a Cyber Security Centre for the Mongolia Armed Forces during the Honourable Prime Minister of India's visit to Mongolia in May 2015.

2.15 **Defence Band (DB) and Defence Interest Zone (DIZ):** The Union Cabinet approved the Defence Band (DB) and Defence Interest Zone (DIZ) on June 21, 2015. This will ensure faster spectrum allocation to the three Services and DRDO, thus bolstering information assurance and spectral efficiency in perspective planning and R&D project. This will also streamline National spectrum usage and provide clarity to all Government and Commercial stakeholders for their current utilisation and future planning of entire range of frequency bands.

2.16 **Ganga Swimming Expedition:** The Ganga Swimming Expedition led by Wg Cdr Paramvir Singh of DSSC comprising of 11 members, commenced its journey from Devprayag in Uttarakhand and terminated at Ganga Sagar, West Bengal, covering a total distance of 2,800 kms. Successful completion of the expedition contributed immensely towards highlighting the significance of adventure to the youth, rejuvenation of river Ganga and 'Swachh Bharat Abhiyan'. The event was 'Flagged-In' by RM on November 23, 2015 at New Delhi.

ARMED FORCES TRIBUNAL

2.17 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.

2.18 At present, the Principal Bench at Delhi and Regional Benches at Chennai, Jaipur, Lucknow, Chandigarh, Kolkata, Kochi, Guwahati and Mumbai are functional. As approved by the Cabinet permanent regional benches of AFT at Srinagar and Jabalpur, are being set up.

BORDER ROAD ORGANIZATION

2.19 Border Roads Organization (BRO) is a road construction Organisation, integral to and in support of Army. It started operations in May 1960 with just two Projects i.e. Project Tusker (renamed Project Vartak) in the East and Project Beacon in the West. It has now grown into an 18 Project Organisation.

2.20 BRO is mainly entrusted with 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.

2.21 Cabinet Secretariat has amended Government of India, Allocation of Business rules 1961 vide Notification dated January 9, 2015 to include all matter relating to Border Roads Development Board and Border Roads Organisation under Ministry of Defence.

2.22 BRO has earned a reputation of being the only road construction agency to maintain roads in difficult, isolated and inhospitable terrain in inclement climatic condition. BRO has constructed approximately 51,000 Km of roads, 488 major permanent bridges of 44,500 m length and 19 airfields in these areas of the country. At present BRO is working on 852 roads (30,118 Km), which include new construction, improvement from

single lane to double lane and maintenance of approximately 19,111 Km roads, 852 roads include 61 Indo-China Border Roads (ICBRs). BRO is also maintaining seven airfields. The Organisation carries out snow clearance on 95 roads (3,000 Km) every year to maintain trafficability to border regions.

DEFENCE (FINANCE)

2.23 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.

2.24 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.

2.25 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 2013-14 and 2014-15, as also the Revised Estimates for 2015-16 and Budget Estimates for 2016-17 in respect of Defence Services Estimates are given in Table No. 2.1 and the relevant graph/chart at the end of this Chapter.

2.26 A 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.

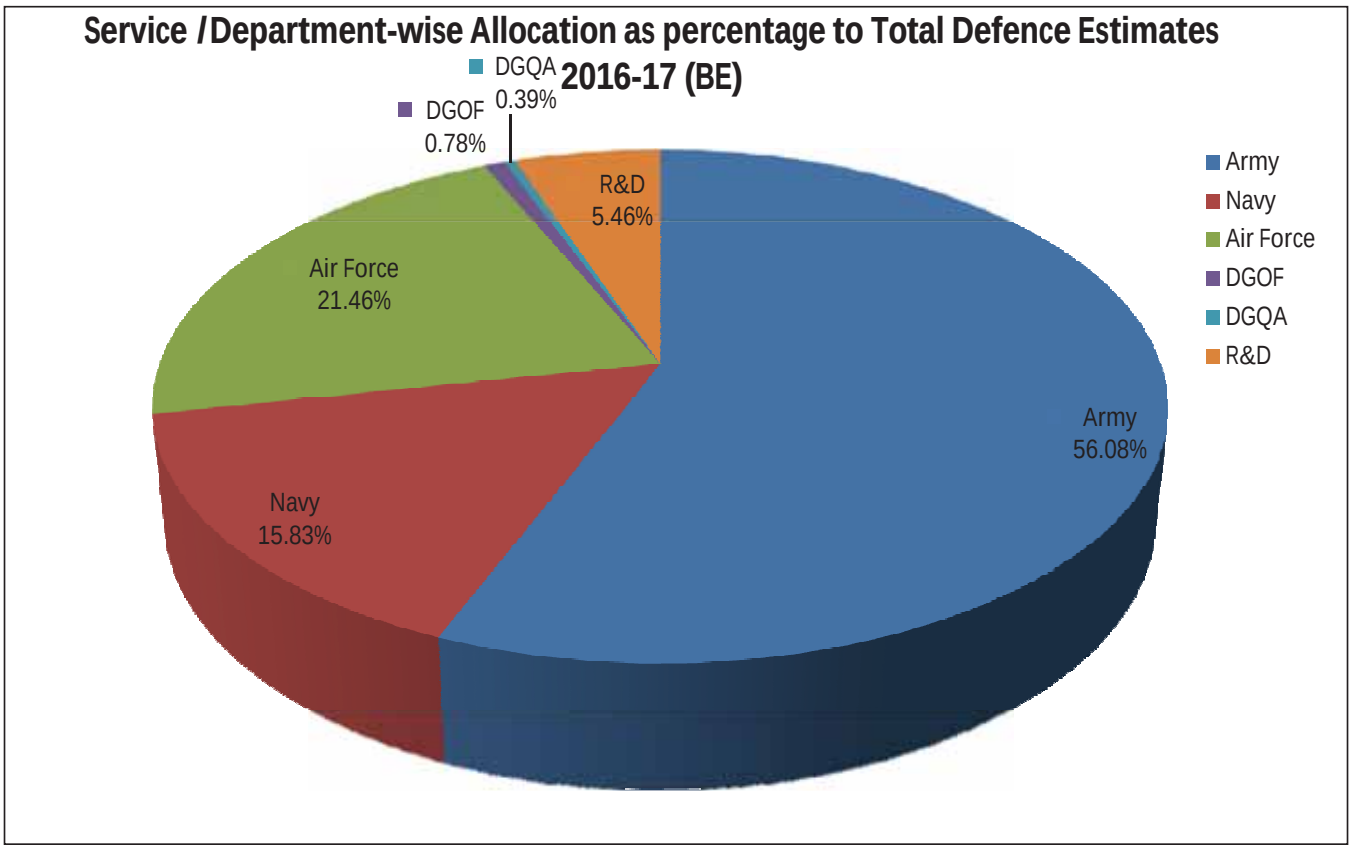
2.27 The position of Action Taken Notes (ATNs) as on 31.12.2015 in respect of observations made in the C&AG Reports/ PAC Reports is given as **Appendix-IV** to this Annual Report.

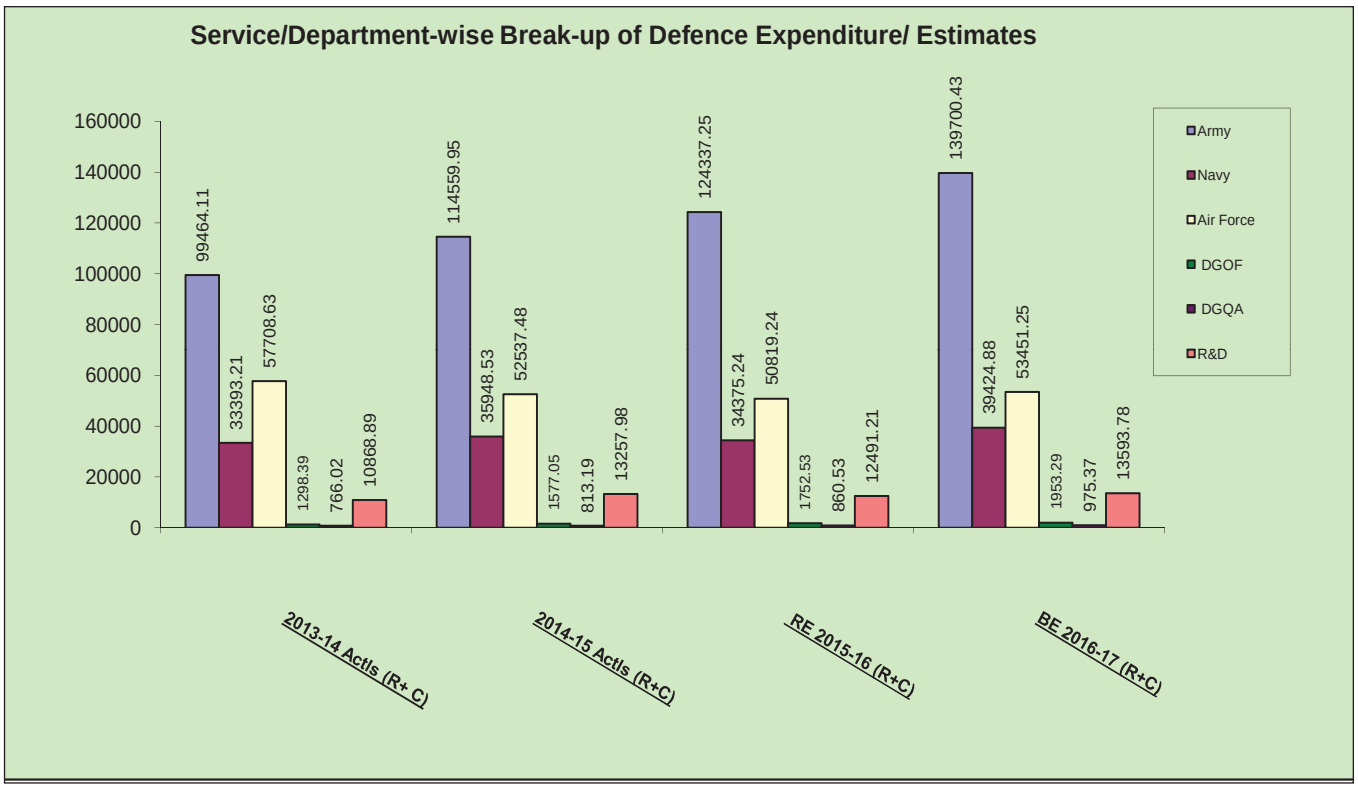
Table 2.1
Service /Department-wise break up of Defence Expenditure/ Estimates

(` in crore)

Service/ Department	2013-14 Actuals (Rev + Cap)	2014-15 Actuals (Rev + Cap)	RE 2015-16 (Rev + Cap)	BE 2016-17 (Rev + Cap)
Army	99,464.11	1,14,559.95	1,24,337.25	1,39,700.43
Navy	33,393.21	35,948.53	34,375.24	39,424.88
Air Force	57,708.63	52,537.48	50,819.24	53,451.25
DGOF	1,298.39	1,577.05	1,752.53	1,953.29
DGQA	766.02	813.19	860.53	975.37
R&D	10,868.89	13,257.98	12,491.21	13,593.78
Total	2,03,499.25	2,18,694.18	2,24,636.00	2,49,099.00

DGOF – Directorate General of Ordnance Factories
DGQA- Director General of Quality Assurance
R&D- Research & Development


Service /Department-wise Allocation as percentage to Total Defence Estimates 2016-17 (BE)
DGQA 0.39%
DGOF 0.78%
R&D 5.46%
Air Force 21.46%
Navy 15.83%
Army 56.08%
Army
Navy
Air Force
DGOF
DGQA
R&D


Service/Department-wise Break-up of Defence Expenditure/ Estimates
160000
140000
120000
100000
80000
60000
40000
20000
0
99464.11
33393.21
57708.63
1298.39
766.02
10868.89
114559.95
35948.53
52537.48
1577.05
813.19
13257.98
124337.25
34375.24
50819.24
1752.53
860.53
12491.21
139700.43
39424.88
53451.25
1953.29
975.37
13593.78
2013-14 Actls (R+ C)
2014-15 Actls (R+C)
RE 2015-16 (R+C)
BE 2016-17 (R+C)
Army
Navy
Air Force
DGOF
DGQA
R&D

3

INDIAN ARMY

Combat Demonstration during Army Day Parade

The Indian Army (IA) is committed to the defence of the country from external and internal threats across the entire spectrum of warfare.

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 of J&K is at an important cross road of transcending from conflict stabilisation to conflict resolution domain. The relentless efforts put in by security forces helped the 'Awaam' gain confidence which led to a high voter turnout in the Parliamentary and Assembly elections. People have entrusted faith in the Indian democratic system, shunned violence and are yearning for peace and stability.

3.3 **Ceasefire Violations (CFVs):** The ceasefire along the Actual Ground Position Line (AGPL), Line of Control (LC) and International Border (IB) Sectors in Jammu and Kashmir has generally held. In the year 2014, there were 153 CFVs along the LC and the year 2015 witnessed 152 CFVs. Appropriate and effective retaliation, where required, was carried out to the CFVs initiated by Pakistan. The incidents of CFVs are taken up through the established mechanisms of hotlines, Flag Meetings and DGMO's talks. Overall, Pakistan continues to calibrate violence to keep the LC alive and to showcase issue of unresolved/ unsettled borders in J&K.

3.4 **Infiltration:** Pakistan, despite its recent peace overtures, has left no stone unturned to internationalise the Kashmir issue. The terror infrastructure remains intact across the border. While infiltration bids, CFVs have been on a decline in the last three months of 2015, this may just be a temporary phase of tiding over the internal security issues which are on a rise within Pakistan.

(a) **Infiltration Bids Eliminated:** During the year 2015, the Army eliminated 18 infiltration bids resulting in killing of 30 terrorists whereas in 2014, the Army had eliminated 23 infiltration bids resulting in killing of 36 terrorists.

(b) **Successful Infiltration:** As per assessment, in 2015 till December 31, 2015, 33 terrorists infiltrated successfully out of the 121 who attempted whereas in 2014, 65 terrorists were successful out of 222 who attempted to infiltrate.

Situation in the Hinterland

3.5 **Counter Terrorist Operations:** During the year 2015, relentless and surgical people friendly operations based on a credible intelligence network have resulted in the elimination of 67 terrorists in the hinterland. In 2014, the Army had killed 68 terrorists in the hinterland of Jammu and Kashmir.

3.6 **Terrorists Initiated Incidents (TIIs):** In 2015, there have been 48 terrorists initiated incidents in the hinterland including suicide attacks in Samba and Rajbagh. A number of these terrorist incidents were initiated against the mobile communications infrastructure, surrendered terrorists and Hurriyat affiliates. These incidents, in 2015, have led to the martyrdom of 18 CAPF personnel and 16 civilian fatalities.

3.7 **Exploitation of Social Media, Local Recruitment and Rise of Radicalisation:** Social media and its blatant use by terrorists groups and Separatists alike to target impressionable minds is emerging as a challenge from the security point of view. The widespread application of digital media has been able to provide an impetus to local recruitment, radicalisation and has been used extensively by Separatists to mobilise masses for protest.

NORTH EAST

3.8 The overall security situation in North East remained fluid and dynamic. There was spurt in violent activities against Security Forces (SF) post abrogation of ceasefire by NSCN (K) in March 2015. To effectively counter the development, Border Guarding & Counter Insurgency Posture in Nagaland and Manipur were strengthened. In 2015, 1504 terrorists have been neutralized (Killed - 103, Apprehended -1359 and Surrendered - 42) along with recovery of 1111 weapons.

3.9 **Assam:** The security situation in the State remained largely peaceful and under control. Relentless operations by Security Forces did neutralize important commanders of NDFB (Songbijit) thereby paralysing the Chain of Command of the group. Resultantly, the morale of NDFB (Songbijit) cadres was adversely affected.

3.10 **Nagaland:** The security situation in the State deteriorated post abrogation of Ceasefire (CF) by NSCN (Khaplang) on March 27, 2015. As a result of renewed attacks on SF by NSCN (K) insurgents in Nagaland, Manipur and Arunachal Pradesh and the outfit was declared 'Unlawful Association' on September 28, 2015. Concerted and relentless operation by SF along India - Myanmar border has severely dented the outfit physically and psychologically forcing the group to move majority of its cadres to Myanmar.

3.11 Signing of "Framework Agreement for Naga Peace Accord" between Government of India and NSCN (IM) on August 3, 2015 was a very significant development and will probably lead towards achievement of a solution to the oldest insurgency in the region having pan North East effect. There is also a growing public disenchantment against NSCN factions, increasing assertiveness of Against Corruption and Unabated Taxation (ACAUT) and consolidation of Nagas of Nagaland under Naga Tribal Council (NTC) which are positive developments.

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 61% of the violence in Manipur. Politics of Blockades and Bandhs continued to prevail and led to increasing fissures amongst the three major communities namely; Meiteis - Nagas - Kukis.

3.13 Inter-tribal rivalry and insider-outsider divide was prominently visible throughout 2015 wherein demands of implementation of Inner Line Permit and its opposition were the main factors for protests.

3.14 **Arunachal Pradesh:** Longding, Tirap and Changlang districts of the State are affected by the presence of Naga insurgents groups which continue their attempts to establish their writ. The State is used as a transit route for illegal movement of weapons, ammunition, narcotics etc from Myanmar to Assam and Nagaland. Synergised operations by SF have reduced the operational space of insurgents.

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

Situation Along the Border

3.16 **Bilateral Relations with China:** India desires peaceful and cordial relations with all neighbors. To this end, a policy of constructive engagement and maintaining peace and tranquility along the Line of Actual Control (LAC) is ensured along our Northern Borders. Relations between the two nations have improved over the past few years. Constructive engagement at the political, diplomatic and military level is continuing with regular military exchanges from time to time. Year 2015 has been declared as the Visit India Year. The visit of Indian Prime Minister to China in May 2015 has further strengthened the bonds of friendship and enhanced bilateral cooperation between both the countries.

3.17 **Situation along the Line of Actual Control (LAC):** 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 and due to this transgressions do occur. Specific cases of transgression by Chinese patrols into such areas across LAC are taken up with relevant Chinese authorities through the established mechanism of Hot Lines, Flag Meetings and Border Personnel Meeting. However there has been increase in assertiveness during routine patrolling by PLA.

3.18 **Implementation of Border Defence Cooperation Agreement (BDCA):** During this year both countries have had wide ranging discussions on implementation of BDCA. Towards this the scope of the Border Personnel Meetings (BPM) has been increased to include conduct of non contact games and joint celebration of festivals. Recently two new BPM sites have been made operational.

3.19 **Fifth Joint Training Exercise:** The Fifth Joint Training Exercise was successfully conducted in Kunming (China) in October this year aimed at building and promoting positive military relations, inter-operability and undertaking joint operations in Counter Terrorism (CT) environment. These exercises provided valuable opportunity for greater professional military interaction and enhanced confidence in each other.

Defence Cooperation with Neighbouring and Other Selected Coutnries

3.20 **Nepal:** As part of bilateral co-operation some military hardware has been provided to Nepal during the year 2015-16. The 12th Nepal India Bilateral Consultative Group on Security (NIBCGS) has been delayed due to the ongoing political situation in Nepal.

3.21 A Need Assessment Team visited Nepal from January 27 to 30, 2015 to discuss the natural disaster, vulnerability profile of Nepal and deliberate upon modalities to upgrade Disaster Management equipment and procedures of Nepal Army.

3.22 A hotline between the DGMOs of the two countries has been made functional with effect from October 2015.

3.23 **Bhutan:** In keeping with the traditional close ties with Bhutan, the Indian Military Training Team has been actively pursuing defence cooperation. 575 vacancies were assigned to Royal Bhutan Army and Royal Bhutan Guards personnel in our training institutions in the year 2015-16.

Combined Exercise/ Activities with Friendly Foreign Countries (FFCs)

3.24 Combined Military Exercises with FFCs are an important part of defence cooperation. These involve sharing of experience, understanding the changing dynamics of military operations, developing inter-operability and streamlining the procedures for combined operations including Humanitarian Assistance and Disaster Relief.

3.25 Indian Army is continuously engaging in combined training/ exercise with friendly foreign countries. The following combined training/ exercises have been conducted since January 2015:

(a) The 10th Indo-Mongolia Combined Training/ Exercise (Exercise Nomadic Elephant 2014) at Gwalior from January 23 to February 6, 2015.

(b) The 8th Indo-Nepal Battalion Level Combined Training/ Exercise (Exercise Surya Kiran VIII) from February 23 to March 8, 2015.

(c) The 6th Indo-Maldives Joint Training/ Exercise (Exercise Ekuverin-VI) from August 31 to September 13, 2015.

(d) The 3rd Indo-Sri Lanka combined Training/ Exercise (Exercise Mitra Shakti 2015) from September 29, 2015 to October 12, 2015.

(e) **UN Peace Keeping Operations (UNPKO) and Demining Training at Cambodia:** A training team comprising of five officers, two JCOs and four ORs ex SD Directorate and Bombay Engineer Group (BEG), Kirkee conducted the training capsule on Demining and Explosive Ordnance Device (EOD) clearance at Cambodia from September 21 to October 4, 2015 in coordination with Royal Cambodian Armed Forces (RCAF) and UNPKO.

(f) **Training of Afghanistan National Army (ANA) Personnel:** ANA personnel are being imparted training on Counter Improvised Explosive Device (CIED) and Field Engineering(FE) subjects at College of Military Engineering and Regimental Centres. 58 Officers and 157 NCOs of ANA have been trained till date.

(g) **Indo US Joint Exercise Yudh Abhyas-15:** The Indo-US Joint Exercise Yudh Abhyas was conducted from September 9-23, 2015 at Joint Base Lewis, McChord, Washington, USA. The aim of the Exercise was to promote military relations between India and US Army and consisted of Command Post Exercise, Expert Academic Discussions and Field Training Exercise.

(h) **Indo-UK Joint Exercise Ajeya Warrior-15:** The Indo-UK Joint Exercise was conducted from June 7-28, 2015 at Westdown Camp, Salisbury Plains, UK. The aim was to promote military relations between Indian Army and UK Army. A strength of 120 personnel from Indian Army contingent participated in the Exercise.

(i) **Indo-Thailand Joint Exercise Maitree-15:** The Indo-Thailand Joint Exercise Maitree-15 was conducted from May 25 to June 7, 2015 at Bakloh Training Node under the aegis of Head Quarter Northern Command, India to build and promote positive relations between the armies of India and Thailand. A strength of 45 personnel from Indian Army participated in the Exercise.

(j) **Indo-Bangladesh Joint Exercise Sampriti-15:** The Indo-Bangladesh Joint Exercise Sampriti-15 was conducted from October 26 to November 8, 2015 at Counter Insurgency and Jungle Warfare School (CIJWS), Vairengte and Binnaguri under Eastern Command to build and promote positive relations between the armies of India and Bangladesh and consisted of Command Post Exercise and Field Training Exercise.

(k) **Cambrian Patrol Competition-15:** Ghatak Patrol of 3/4 GR participated in the prestigious International Patrolling Competition at Wales, UK from October 16-25, 2015. The team won the Silver Medal and projected a professional image of our Army.

MODERNISATION AND EQUIPMENT

3.26 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 (QRs), Request for Proposal (RFP) formulation and evolution of novel methods of field evaluations.

The changes made would result in making the acquisition process more efficient.

3.27 **Mechanised Forces:** Upgradation of in-service equipment by night enablement, modern fire control systems and better power packs has been the thrust area. Concurrently, the indigenous development of future combat vehicle platforms is also being progressed. Indigenous solution for Infantry Combat Vehicle (BMP) upgrades and Wheeled Armoured Personal Carrier is also being explored. Improvements on the indigenous Arjun Tanks are underway with trial validations being carried out on Mk-II versions, which have enhanced automotive and weapon systems. Development of Future Ready Combat Vehicles and Futuristic Infantry Combat Vehicles has been initiated for a planned replacement of the existing fleet. Several upgrade programmes on the existing fleet of T-90 and BMP-II are underway which includes enhanced communication, night fighting capability, transmission systems and weapon platforms.

3.28 **Artillery:** The procurement of Artillery equipment is focused on conversion of equipment to 155 mm calibre with improved towed, self-propelled and mounted gun system, enhancing surveillance capabilities and acquisition of long range vectors. The proposals for procurement of Tracked Self Propelled Guns, BrahMos and Pinaka artillery systems are nearing fruition. The induction of the indigenous artillery gun 'Dhanush' would also commence post successful trials. Advanced munitions with improved precision and enhanced destructive power are being procured.

3.29 **Guns:** Modernisation of Artillery has been on since 2012. Both global and indigenous routes are being adopted to hasten the progress of modernisation. Major projects of 155 mm Towed Gun, Indigenously developed 155 mm 'Dhanush' and 155 mm Tracked (SP) Gun are at final stages of evaluation. Government has recently given a go ahead for the procurement of 155 mm Mounted Gun System. Upgunning of the existing 130 mm Guns to 155 mm/ 45 Cal Gun System is also currently under progress as 'Buy & Make Indian'.

Upgraded 155mm/45 Cal Electronically Upgraded Gun System "Dhanush"

155mm/52 Cal Tr (Sp) Gun

3.30 **Ammunitions:** Bi-modular Charge System (BMCS) is being procured through

the Global and Indigenous route. Indigenous capability in development and manufacturing of charge system is an important step towards self-reliance. To this extent evaluation of the BMCS produced by Ordnance Factory Nalanda has been completed. Electronic fuzes for all calibers are being procured through revenue and capital route. A contract has been signed in January, 2016 for capital procurement of ammunitions for 84 MM Rocket Launcher with transfer of technology for Ordnance Factory Board (OFB)

3.31 **SATA Equipment:** Self-reliance in production of Indigenous Weapon Locating Radar (WLR) has been achieved and a contract for WLR signed in December, 2015 is currently at an advance stage. To improve the accuracy of Artillery fire, procurement of Inertial Navigation System (INS) too is being undertaken.

WLR (Swathi)

3.32 **Infantry:** Modernisation of the infantry soldier is aimed at enhancing lethality and providing individual protection. The proposals for procurement of 3rd Generation Anti Tank Guided Missiles, Modern Ballistic Helmets and Light Machine Guns are being progressed.

3.33 **Army Air Defence:** A contract for the upgrades of L-70 guns has been concluded and that of Zu-23 guns is in advanced stages of finalisation. The proposal for Medium Range Surface to Air Missile Regiment (MRSAM), is also nearing fruition. In addition, schemes for replacements of Short Range Surface to Air Missile systems, Successor for L-70 and Zu-23 Guns, Air Defence Fire Control Radar, Very Short Range Air Defence System (VSHORADS), are in the pipeline.

3.34 **Miscellaneous Equipment:** In addition to acquisitions specific to different arms, procurement and manufacture of Reconnaissance and Surveillance Helicopters-Kamov 226T, Air Cushion Vehicles, Tactical Communication System, 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, retrieval and accounting system is also underway. Much has also been achieved in exploiting alternate and indigenous sources for procurement of HMVs (High Mobility Vehicles) and Light Vehicles for the Indian Army.

3.35 **Procurement of New Generation Rolling Stock for the Indian Army:** The Additional Directorate General of Strategic Movement has started taking deliveries of new generation rolling stock. These include specialist wagons for carriage of military equipment and vehicles as well as coaches for conveyance of troops. New generation AC-II, AC-III and Military Pantry coaches incorporate modifications which make them efficient, feature rich and more comfortable.

New Generation Bogie Open Military Wagon

RASHTRIYA RIFLES

3.36 Rashtriya Rifles since its raising has rendered invaluable assistance towards the security as well as socio-economic development of J & K. During the period under review, Rashtriya Rifles has successfully carried out relentless operations. The continued presence of Rashtriya Rifles has been a major factor in maintaining peace and tranquility in the state of J&K. The waning levels of terrorism are evident from the number of terrorist initiated incidents occurring in 2015.

3.37 The 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. The force is always prepared to effectively deal with any increase in threat levels.

3.38 **Operational Achievements of Rashtriya Rifles:** The Rashtriya Rifles Force has neutralised 68 terrorists during the period under review (fifty two killed and sixteen apprehended) and has also recovered significant caches of warlike stores.

TERRITORIAL ARMY

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

3.40 **Territorial Army Day Parade:** On the occasion of TA Day, TA Day Parade was held at Army Parade Ground, Delhi Cantt on October 9, 2015 and was reviewed by Raksha Mantri. Ten marching contingents comprising of Infantry (TA) units and Home & Hearth (TA) units, ten Infantry (TA) unit Pipe Bands and three tableaus of Dept (TA) units participated in the parade.

Raksha Mantri reviews TA Day Parade

3.41 **Calling on the President of India by TA Fraternity:** As part of The TA Day Celebrations, as is customary, Officers, JCOs, ORs and families of the Territorial Army, called on the President of India, at Rashtrapati Bhawan on October 6, 2015.

Calling on the President of India by TA Fraternity

3.42 **Contribution of Territorial Army Units in CI/ CT and Internal Security:** Presently approx 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.

3.43 **Raising of Three Engineers TA Battalions:** Three Engineer Regiment of Territorial Army (TA) for the Repair of LC (Line of Control) Fence in Northern Command are under raising and will be operationally effective from May 2016. As on January 1, 2016, 93% of raising process of these three Regiments of TA has been completed.

3.44 **Arboriculture:** 130 Infantry Battalion (TA) ECO, KUMAON located at Pithoragarh (Uttrakhand) is known for its contribution towards ecology. The unit, on the occasion of World Environment Day on June 5, 2015, planted a total of 1 lakh saplings of 13 different species in a record time of 19 minutes in Districts Pithoragarh. A team comprising of over 6000 students and civil dignitaries participated in the mass plantation drive. The achievement has been acknowledged in the "Limca Book of Records".

3.45 **Plantation Update ETF Battalions (TA):** 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 approx 6.62 crore saplings and covered an area of approx 66,662 hectares. The efforts of ETF Bns (TA) have been appreciated by one and all.

3.46 **Recruitment into TA:** During the year 2015 the following number of TA personnel were recruited in TA as per existing vacancy:

1. Infantry (TA) - 2303
2. Engineer (TA) - 1345
3. Ecological (TA) - 440
4. Departmental (TA) - 1615

UN MISSIONS

3.47 India has contributed a sizeable strength of troops to the UN Peacekeeping operations. Presently we have approximately 6800 personnel in eight UN missions. Since 1950 India has participated in 48 UN missions out of the total of 69 UN missions, across the globe contributing more than 2.10 lakh Indian troops till date.

3.48 The most significant contribution of the Indian Army in this field has been to ensure peace and stability in Africa and parts of Asia. It has demonstrated a unique capacity of sustaining large troop commitments over prolonged periods. Towards the fulfillment

of India's commitment to the UN and peace, 150 Indian Army soldiers have so far made the supreme sacrifice.

3.49 India at present is the third largest troop contributor in UN PKO. Presently, Indian Army is deployed in the UN peacekeeping missions including UNDPKO, as per the following details:

S No	Mission	No of personnel
1	MONUSCO (Congo)	3388
2	UNMISS (South Sudan)	2289
3	UNIFIL (Lebanon)	899
4	UNDOF (Golan Hts)	192
5	UNOCI (Ivory Coast)	09
6	UNISFA (Abeyi)	06
8	UNDPKO (New York)	7
9	MINURSO (Western Sahara)	03
	Total	**6793**

CENTRE FOR UNITED NATIONS PEACEKEEPING (CUNPK)

3.50 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. As part of its overall schedule of activities for the year, it undertook the following important activities:

(a) Special Female Military Officer's Course (SFMOC-1) in which 31 Female Officers from across the Globe participated.

(b) United Nations Military Observers Course (UNMOC)-15) from June 29 to July 17, 2015 with a participation of 53 Peacekeepers.

(c) International Humanitarian Law Seminar with ICRC from September 9-10, 2015.

(d) United Nations Military Contingent Officers Course (UNMCOC-15) from November 9-27, 2015 with a participation of 23 Officers from Friendly Foreign Countries.

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4

INDIAN NAVY

INS Sumitra during Anti-Piracy Patrol at Gulf of Aden

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.

4.1 India is a maritime nation and the country sits astride a very large number of busy International Shipping Lanes, that criss-cross the Indian Ocean. More than 90% of our 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 The last decade has witnessed India's dependence on his maritime environment expanding substantially as his economic, military and technological strength grew, his global interactions widened and his national security imperatives and political interests stretched gradually. It can thus be assumed that the 21st century will be the 'Century of the Seas' for India and that the seas will remain a key enabler in his global resurgence.

4.3 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 to India, at and from the seas. These threats and challenges require the Indian Navy to remain effective across the full spectrum of combat operations, and constantly reshape itself to meet future challenges.

4.4 IN is the key enabler and guarantor of the country's maritime sovereignty and myriad use-of-the-sea activities. This is discharged by the Indian 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 our 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.

4.5 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 maritime infrastructure development of friendly nations. IN initiatives are also geared up for contributing towards developing operational and technical skills of maritime practitioners. Material assistance in terms of providing spares,

AIS equipment, Ship Handling Simulators, ammunition, communication equipment, coastal surveillance radars, boats, etc. to the navies/ maritime forces in the region has gone a long way in strengthening India's stature and bilateral ties.

4.6 One frontline Fleet ship has been continuously deployed in the Gulf of Aden region since October 2008 to prevent piratical attacks and provide safe escort to merchant ships of Indian and foreign nationalities.

4.7 Protection to offshore assets including Offshore Development Areas (ODAs) has been augmented with deployments by 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.

OVERSEAS OPERATIONS

4.8 **Langkawi International Maritime Aerospace Exhibition (LIMA–15):** INS Kamorta participated in Langkawi International Maritime Aerospace (LIMA-15) at Langkawi, Malaysia in March 2015.

4.9 **International Maritime Defence Expo (IMDEX) Asia – 2015:** IN ships Satpura and Kamorta participated in the 10th Edition of IMDEX Asia in May 2015 at Singapore. The highlight of the event was the setting up of a 'Make in India' pavilion represented by Indian DPSUs, which included M/s GSL and GRSE.

4.10 **ARF Disaster Relief Exercise:** INS Saryu participated in ASEAN Regional Forum (ARF) Disaster Relief Exercise (DIREx) 2015 at Penang, Malaysia in May 2015.

4.11 **Eastern Fleet Overseas Deployment (OSD):** IN ships Satpura, Kamorta, Ranvir and Shakti were deployed in South China Sea, Sea of Japan and Java Sea in May and June 2015. The Indian Navy participated in SIMBEX-15 in the South China Sea with the Singapore Navy and also carried out PASSEX with the navies of Indonesia, Australia, Thailand and Cambodia.

IN Ships Manoeuvring in LOMBOK Strait during OSD

4.12 **International Fleet Review (IFR) at Sagami Bay, Japan:** INS Sahyadri participated in the IFR hosted by Japan at Sagami Bay, Japan in October 2015. The ship also visited Vietnam, Republic of Korea and the Philippines enroute.

INS Sahyadri at IFR Sagami Bay – Japan

4.13 **Western Fleet Overseas Deployment (OSD):** IN ships Delhi, Deepak, Tabar and Trishul were deployed to Persian Gulf as part of Western Fleet OSD in September 2015. In addition, IN ships Beas and Betwa undertook a deployment to Iran in August- September, 2015.

4.14 **OSD of Training Squadron:** IN ships of 1st Training Squadron (1 TS) visited Indonesia, Singapore, Malaysia, Bangladesh, Sri Lanka in March 15 and, Mauritius and Seychelles from September – November 2015 as part of sea training of cadets. During the visit of 1 TS to Mauritius, INS Sujata also participated in the Aprawasi Diwas held at Mauritius on November 2, 2015.

4.15 **Lokayan 15:** INS Tarangini, a Sail Training Ship of the Indian Navy, was deployed overseas for eight months from April-December 2015. Lokayan 15 signifies Indian Navy's extensive reach across the globe for the sole purpose of a safe and secure maritime environment.

MAJOR EXERCISES

4.16 **TROPEX 15:** The Indian Navy's annual Theatre Level Operational Readiness Exercise (TROPEX) was conducted from end January to February 2015. A total of 42 ships, three submarines and 51 aircraft, including newly inducted P8I aircraft participated in the exercise. The exercise saw participation of units from the Indian Air Force and Coast Guard. In addition, a large scale Humanitarian Assistance and Disaster Relief exercise was conducted during TROPEX off the L&M Islands.

IN ships in formation during TROPEX-15

Flying Operations from the Aircraft Carrier during TROPEX

4.17 **Defence of Gujarat Exercise (DGX 15):** The Defence of Gujarat exercise was conducted from end October to November, 2015, on the Western Seaboard. 33 ships, 3 submarines and 29 aircraft from Navy, IAF and ICG participated in the exercise.

EXERCISES WITH FOREIGN NAVIES

4.18 **MALABAR-15:** IN and USN have been regularly participating in bilateral exercise 'MALABAR' since 1992. The 19th edition of MALABAR was held in the Bay of Bengal in October 2015, and also included participation by Japanese Maritime Self Defence Force (JMSDF).

4.19 **VARUNA-15:** Indo - French naval exercise 'VARUNA' is being conducted since 1993. VARUNA-15 was held in the Arabian Sea from end April to May 20, 2015 with the French Navy.

4.20 **SIMBEX-15:** Singapore India Maritime Bilateral Exercise (SIMBEX) is held each year, alternately in the Bay of Bengal and in South China Sea. SIMBEX-15 was held in the South China Sea in May 20, 2015 with Singapore Navy.

4.21 **KONKAN-15:** The annual bilateral naval exercise KONKAN with the Royal Navy is an operational interaction being conducted since 2004. KONKAN-15 was held in September 2015 off the coast of the UK.

4.22 **AUSINDEX-15:** The inaugural bilateral maritime exercise AUSINDEX between IN and Royal Australian Navy (RAN) was conducted off Visakhapatnam in September 2015.

4.23 **SLINEX-15:** The IN - SLN exercise was conducted for the first time in 2005 and in 2010, it was decided to hold the exercise every alternate year. SLINEX-15 was held in end October - early November 2015 off Sri Lanka.

4.24 **INDRA-15:** Indo - Russia naval exercise named 'INDRA' is being conducted since 2003. INDRA-15 was conducted in the Bay of Bengal in December 2015.

Coordinated Patrol (Corpat) with Indian Ocean Region Littoral Navies

4.25 **IN – MN CORPAT:** IN and Myanmar Navy have conducted Coordinated Patrols (CORPAT) annually since 2013. The 3rd CORPAT was conducted from March 16-22, 2015, with the opening ceremony being held at Yangon and the closing ceremony at Great Coco Islands, Myanmar.

4.26 **INDO – THAI CORPAT:** Indo-Thai Coordinated Patrols are being conducted regularly since 2005. Two CORPATs are held each year and a total of 21 CORPATs have been conducted till date. In 2015, the 20th CORPAT was conducted from April 3-9, 2015, and the 21st CORPAT was conducted from November 14-24, 2015.

4.27 **IND-INDO CORPAT:** 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. A total of 26 CORPATs have been undertaken till date. In 2015, CORPATs were conducted in April/ May 2015 and September/ October 2015.

Anti-Piracy

4.28 IN has deployed 55 ships to the Gulf of Aden since October, 2008 for anti-piracy escort duties. During these deployments, IN ships have escorted over 3,195 merchant vessels (359 Indian flagged) with over 23,200 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 12.

4.29 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.

4.30 The IN remains committed to ensuring good order at sea in the Indian maritime zones, and towards ensuring freedom of navigation in the high seas, including off Somalia.

4.31 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.

COASTAL SECURITY

4.32 Coastal 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. IN is actively engaging with multiple agencies involved in coastal security by providing training assistance, conducting trials of equipment and by providing technical expertise. The IN also continues to actively engage with the fishermen and coastal communities through community interaction programmes towards integrating them into the security matrix. IN is strengthening existing mechanisms and increasing the complexity of such exercises, with the involvement of all stakeholders. In November 2015, for the first time, Coastal Security Exercise Sagar Kavach off Gujarat was conjoined with the major maritime exercise 'Defence of Gujarat Exercise' (DGX) 2015, thereby providing substantial impetus to the Coastal Security matrix. In addition, numerous coastal security exercises were conducted on both the Western and Eastern seaboards, as well as in the Andaman and Nicobar Islands throughout the year.

4.33 Towards strengthening coastal and offshore security, Fast Interceptor Craft (FICs) and Immediate Support Vessels (ISVs) are being inducted into the IN. With the commissioning of 13 ISVs in 2015, IN has inducted all 23 ISVs envisaged for offshore security and they are being deployed regularly for security of offshore installations. IN has inducted 67 out of 95 FICs into the Sagar Prahari Bal, with the balance being planned to be inducted by 2017. These FICs are being employed optimally for coastal security missions.

4.34 The National Command Control Communication Intelligence (NC^3I) 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.

FOREIGN COOPERATION

4.35 **Hydrographic Survey for Myanmar:** INS Darshak was deployed off Sittwe, Myanmar, in early March 2015, for survey tasking on the request received from the host government. The ship successfully completed 6700 nm of survey runs and 325 nm of side scan operations, apart from tidal observations. The Fair Sheet produced as consequence of

the survey was presented to the Myanmar government on May 13, 2015.

4.36 **Hydrographic Survey for Seychelles:** INS Darshak undertook hydrographic survey of Port Victoria and its approaches from October 27 to December 18, 2015.

4.37 **Hydrographic Survey for Kenya and Tanzania:** INS Jamuna was deployed to Kenya for the conduct of hydrographic surveys of Manda Bay and Mkokoni, based on requests received from the Government of Kenya. INS Jamuna was also deployed to Tanzania for the conduct of hydrographic survey off Zanzibar Port, based on requests received from the Government of Tanzania.

4.38 **Continental Shelf Claim Survey for Mauritius:** INS Sarvekshak was deployed to Port Louis, Mauritius for conduct of Commission for claiming Legal Continental Shelf (CLCS) survey based on requests received from the Mauritian government. The continuous cooperation in the field of Hydrography has led to establishment of a Hydrographic Survey Unit and conduct of 24 surveys of Mauritian waters.

4.39 Hydographic assistance to Sri Lanka and Maldives is being progressed and India has agreed to survey their areas in 2016.

4.40 **Assistance in Hydrography Taining:** In addition to the assistance provided in Hydrographic surveys, IN also trains officers and sailors of foreign navies/ concerned organisations in hydrography related subjects.

4.41 **34th Indian Scientific Expedition to Antarctica:** A hydrographic survey team consisting of one Hydrographic Officer and one Survey Recorder participated in the 34th Indian Scientific Expedition to Antarctica from January to April 2015 to pursue the survey requirement of the India Bay area.

4.42 **Material Assistance to Vietnam Peoples Navy (VPN):** An IN Technical Team was deputed to Vietnam in November 2015 for undertaking defect rectification of various VPN equipment based on request from the host Government. In addition, training on yard processes, upkeep and maintenance of shipborne systems was also conducted for VPN personnel.

NAVY-TO-NAVY INTERACTION

4.43 **IONS (Indian Ocean Naval Symposium):** IONS Working Group Meeting on Humanitarian Assistance and Disaster Relief (HADR) was conducted at HQWNC, Mumbai in August 2015. The event witnessed participation of six member navies, which included Australia, Bangladesh, India, Indonesia, Maldives and Oman. The draft IONS Guidelines on HADR was discussed and validated during the meeting. Further, a Table Top Exercise (TTE) was also conducted based on a HADR contingency (cyclone) in an island nation in the IOR.

4.44 **Commissioning of an OPV for the Mauritius Coast Guard (MCG):** MCG OPV, 'Barracuda', constructed by M/s GRSE, Kolkata was delivered to Government of Mauritius (GoM) on December 20, 2014. The ship was commissioned at Port Louis, Mauritius on March 12, 2015 by the Mauritian Prime Minister Aneerod Jugnauth in the august presence of Prime Minister of

India. 'Barracuda' is the first foreign warship constructed and delivered by an Indian Shipyard.

PM during Commissioning Ceremony of MOPV 'Barracuda'

4.45 **Refit of MNDF Ship Huravee:** Indian Navy undertook the Medium Refit (MR) of Maldives Navy Ship 'Huravee' at Naval Dockyard, Visakhapatnam w.e.f. May 1, 2015. The refit of the ship was completed on January 21, 2016 and post Refit, the ship participated in IFR 2016. The ship has left Visakhapatnam harbour on February 23, 2016 for onward passage to Maldives.

4.46 **International Fleet Review 2016 (IFR-16):** Indian Navy hosted the International Fleet Review (IFR) at Visakhapatnam from February 4 to 8, 2016. A total of 100 ships, including 24 foreign warships and delegation from 48 countries participated in the event. The President reviewed the fleet of participating Indian and foreign warships on February 6, 2016. The Prime Minister was the Chief Guest during the Operational Demonstration and International City Parade on February 7, 2016. IN had designed the logo for IFR which depicts the three operating dimensions of the Navy, with a ship, submarine and an aircraft, and also letters I-F-R forming an integral part of the logo. The Dolphin has been chosen as the

United through Oceans

mascot depicting friendship across oceans and the theme is 'United through Oceans'.

COMMISSIONING

4.47 **Commissioning of INS Kochi:** INS Kochi, the second ship of the Kolkata class guided missile destroyer, was commissioned by the RM on September 30, 2015 at Mumbai. Designed by the Indian Navy's in-house organisation, Directorate of Naval

Commissioning of INS Kochi

Design, and constructed by Mazagon Dock 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.

4.48 **Commissioning of INS Astradharini:** INS Astradharini, Torpedo Launch Recovery Vessel (TLRV), built at M/s Shoft Shipyard Pvt Ltd, was commissioned on October 6, 2015 at Visakhapatnam. The ship would be used to undertake trials of indigenous underwater weapon systems being developed by Naval Science and Technological Laboratory.

4.49 **Commissioning of ISVs of 82nd, 83rd and 84thImmediate Support Vessel (ISV) Squadrons:** 13 ISVs belonging to the 82nd, 83rd and 84th Immediate Support Vessel (ISV) Squadrons were commissioned in 2015 for patrolling the Offshore Development Areas (ODA) off India's Coast.

4.50 **Commissioning of INS Sardar Patel:** An Indian Naval base at Porbandar, INS Sardar Patel, was commissioned on May 9, 2015 by the CM of Gujarat. The commissioning of Sardar Patel would greatly enhance the facilities for naval operations in the state of Gujarat.

4.51 **Commissioning of INS Vajrakosh:** The Missile Technical Position set up at Karwar in March 2009 was commissioned as INS Vajrakosh on September 9, 2015 by Raksha Mantri.

4.52 **Commissioning of INS Vishwakarma:** The Shipwright School at Visakhapatnam was commissioned as INS Vishwakarma on November 14, 2015.

NAVAL AVIATION

4.53 Naval Aviation is at a crucial juncture on its path towards modernisation. The significant expansion of Naval Aviation requires concomitant attention to various aspects of perspective planning, operations, HR, training and flight safety, as also augmentation of infrastructure at our existing and planned Naval Air Stations and Naval Air Enclaves. Numerous initiatives have been undertaken in our quest towards ensuring a potent, professionally competent and operationally ready Air Arm of the future. Towards this, induction of modern, state-of-the-art aircraft such as P8I, AJTs and MiG-29K fighters is in progress.

4.54 **MiG 29K Fighters:** MiG 29K is a multirole ship-based fighter aircraft designed for destroying aerial targets as well as surface ships and shore objects of the adversary. 26 out of 45 contracted aircraft have been inducted in the IN, with the balance due for delivery by end 2016. The training squadron of MiG 29K fighters is scheduled to be commissioned by mid 2016. A Training Simulator facility was commissioned on July 2, 2015 to train personnel in operation of MiG 29K aircraft.

4.55 **P-8I LRMRASW:** 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. A 'Dedication to the Nation' ceremony was held on November 13, 2015 with RM as the Chief Guest.

RM dedicating the P-8I Squadron to the Nation

4.56 **LCA (Navy):** The first two Naval Prototype aircraft (NP1 and NP2) of Light Combat Aircraft (LCA) are presently undergoing flight testing. The first flight of NP1 aircraft was successfully undertaken in 2012 and maiden ski-jump launch was undertaken in December 2014. NP2 has flown its first sortie in February 2015 and has flown 10 sorties since then. The aircraft will be utilised for Carrier Compatibility Trials towards development of LCA (Navy) Mk II.

4.57 **AJT:** The Hawk AJT squadron, based at Visakhapatnam, conducts training of fighter pilots and also undertakes other tasking for fleet units. Of the 17 aircraft due for induction, 11 have been delivered.

IMPORTANT EVENTS OF INTEREST

4.58 **Combined Commanders' Conference:** The Combined Commanders' Conference was conducted off Kochi onboard INS Vikramditya at sea on December 15, 2015 with Prime Minister as the Chief Guest. The RM, all the three Service Chiefs and Cs-in-C from the Army, Navy and Air Force participated in the conference onboard Vikramaditya. The conference also included an Operational Demonstration by the IN. A total of 23 ships, five submarines (including Chakra) and over 60 aircraft participated in the Op Demo.

4.59 **Visit by Raksha Mantri onboard INS Vikramaditya:** The Raksha Mantri embarked INS Vikramaditya along with Rajya Raksha Mantri, and other Ministry of Defence officials on February 13, 2015. The Distinguished Visitors witnessed combined fleet operations including MiG 29K flying, practice missile firing, submarine operations and air power demonstration during the visit onboard. The Raksha Mantri also released a commemorative stamp on the IN's indigenous communication satellite.

4.60 **Visits of the Standing Committee on Defence (SCOD):** The Standing Committee on Defence (SCOD) visited Goa from February 4 to 6, 2015. The delegation was airlifted to INS Vikramaditya on February 6, 2015. The SCOD undertook a walk around the ship and, thereafter, witnessed flying operations by MiG-29K, Kamov and Chetak aircraft from the ship. On completion of the visit on Vikramaditya, the delegation visited National Institute of Hydrography, Goa. The SCOD delegation also visited Kochi from May 31-June 1, 2015, wherein they were briefed on the training activities of the Southern Naval Command.

4.61 **Release of Important Documents:** The Indian Navy, in its effort to evolve as a potent, capable and progressive force to meet current and future challenges in the maritime domain has released various important documents in 2015 to provide a clear road map

for the future Indian Navy. These include the following:

(a) **Indian Maritime Security Strategy 2015:** IN has promulgated the 'Indian Maritime Security Strategy 2015', in October 2015, which provides strategic guidance for the growth, development and deployment of the Navy in the coming years.

(b) **Strategic Guidance for Transformation:** IN has promulgated the 'Strategic Guidance for Transformation', in October 2015, which provides the updated contextual framework for the transformation in the IN, including the concept, vision and transformation strategy.

(c) **Maritime Infrastructure Perspective Plan 2015-27:** IN has promulgated the 'Maritime Infrastructure Perspective Plan (MIPP) 2015-27', in May 2015, which charts a roadmap for creation of operational, maintenance, training and administrative support capability/ infrastructure, in consonance with augmentation of force levels and manpower, envisaged in the Maritime Capability Perspective Plan (MCPP) and Human Capital Strategy.

(d) **Science and Technology Roadmap 2015-35:** IN has promulgated the 'Science and Technology Roadmap 2015-35', in May 2015, which serves to identify key technologies required to be developed in the next 20 years. The document seeks to harness national capabilities and focus coordinated efforts amongst the IN, DRDO, public sector and private industry to develop technologies for the future Navy.

(e) **Indian Naval Indigenisation Plan 2015-30:** IN has promulgated the 'Indian Naval Indigenisation Plan 2015-30', in July 2015, which attempts to formulate the requirements of the IN towards indigenous development of equipment and systems, over the next 15 years. The document identifies capability gaps for indigenisation and lists out the equipment which can be taken up for indigenisation in the coming years.

4.62 **Night Landing at Port Blair Airport:** Port Blair is one of the three 'joint-user aerodromes' controlled by IN (in addition to Goa and Visakhapatnam). In order to enhance the number of civil flight operation and thereby connectivity of Port Blair with the mainland, the Indian Navy was ready to undertake night flight operations since end 2014. IN's efforts have borne fruit, when the maiden trial landing of a civil flight at night at Port Blair was carried out on September 11, 2015 in dark hours.

4.63 **Seminar on 'Innovation & Indigenisation':** The IN has been at the forefront of indigenisation and has aligned itself with various initiatives taken by the Government. In keeping with the 'Make in India' initiative of Government of India, an Indigensiation Seminar was held in July 2015 with active support of the Confederation of Indian Industries (CII). The seminar also saw large participation from academia and Medium, Small and Micro enterprises. The highlight of the seminar was the promulgation of the Indian Naval Indigenisation Plan 2015-30 by the Raksha Mantri. The document gives the requirements of Indian Navy for indigenous development for the period 2015-

30. The document has been uploaded on the Indian Navy website and CII website for access by the Indian industry.

4.64 **Innovation and Indigenisation Pavilion:** IN has instituted 'Innovation Trophies' for its personnel, aimed at motivating them for innovatively solving problems and enhance the momentum towards 'Self Reliance through Indigenisation and Innovation'. Some of the initiatives were demonstrated to the PM on December 4, 2015, during the Navy Day Reception at Navy House. The PM presented the newly instituted awards during the event.

4.65 **Golden Jubilee of 1965 Indo-Pak War:** To commemorate the Golden Jubilee of 1965 Indo-Pak War, IN had set up a Naval pavilion at India Gate Lawns in September 2015, where various facets of the War along with models of ships and aircraft, photographs and 3D CAD layout were displayed. A commemorative stamp was released to mark the occasion, wherein INS Mysore, the Flagship during the war was depicted. In addition, Motor Cycle Expeditions to commemorate and spread awareness about the 1965 war were undertaken by Commands in September 2015. The expeditions routed through various locations which saw action during the war.

4.66 **Participation in National Days – Mauritius and Seychelles:** IN ships Delhi and Teg participated in the National Day celebrations of Mauritius and Seychelles respectively. INS Delhi was also present at Port Louis during handing over ceremony of Indian built OPV 'Barracuda' to Mauritius by the Prime Minister.

4.67 **SAR Assistance to Merchant Vessels:** IN provided assistance to the crew of Merchant Vessel Jindal Kamakshi, anchored 40 nm North West of Mumbai on June 21, 2015, which was listing heavily due to ingress of water. On receipt of the distress message, a Seaking helicopter was launched and 19 crew members were safely evacuated to Mumbai by the helicopter. In another incident, an IN helicopter rescued 14 personnel from Merchant Vessel Coastal Pride on June 23, 2015.

4.68 **SAR of Pawan Hans Helicopter:** Following the crash of a Pawan Hans helicopter at sea on November 4, 2015, IN Ships and helicopters were immediately deployed to provide assistance in locating the wreckage and survivors. Based on search carried out by IN, diving operations were undertaken by vessels deployed by ONGC and debris of the helicopter, the Black Box and mortal remains of one of the pilots were recovered.

4.69 **International Day of Yoga:** IN celebrated the International Day of Yoga on June 21, 2015 to promote the cause of Yoga, under the theme, 'Yoga across the Oceans'. Multifocal activities were organised for the benefit of all Naval Personnel and their families across all Naval stations and units including onboard IN ships/ submarines on deployment in the South China Sea, Mediterranean Sea, Bay of Bengal and Arabian Sea.

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5

INDIAN AIR FORCE

IAF Su-30 MKI and IL-78 with RAF Typhoon II

Indian Air Force (IAF) has been modernising its inventory as per its long-term perspective plan. To maximise the operational potential, IAF is also creating modern and efficient operational and technical infrastructure.

5.1 On October 8, 2015 Indian Air Force (IAF) celebrated the 83rd anniversary of its service to the Nation. IAF has been modernising its inventory as per its long-term perspective plan. The focus is on "Make in India" to give impetus to indigenous development and manufacturing, including participation of private sector in defence manufacturing. Modernisation process involves new inductions, as well as upgradation of the existing weapon platforms and support systems as a part of the capability build up.

5.2 The on-going modernisation plan spans the entire spectrum of IAF's capability including fighters, transport aircraft, helicopters, combat support assets and air defence network. Net centricity, cyber security and ensuring enhanced visibility of entire battle space for seamless operations are part of this capability build up. To maximise the operational potential, IAF is also creating modern and efficient operational and technical infrastructure. IAF's recently acquired airborne assets have been effectively utilised in Humanitarian Assistance and Disaster Relief (HADR) missions, most noticeably in J&K, Nepal and Yemen.

OPERATIONS

Acquisitions and Upgrades

5.3 **LCA:** Light combat aircraft Tejas is designed and developed by Aeronautical Development Agency (ADA), Bangalore. The Initial Operational Clearance (IOC) of LCA was achieved in December 2013. The first series production aircraft in IOC configuration was handed over to IAF in January 2015.

5.4 **Mirage-2000 Upgrade:** IAF contracted for the upgrade of Mirage 2000 aircraft to advance standards of improved radar, avionics, electronic suite, weapons and a modern generation glass cockpit. On March 25, 2015, first upgraded aircraft was handed over to the IAF. The induction of the aircraft has added the much needed teeth to Air power and keeps the IAF ahead of its adversaries. This multirole fighter aircraft has achieved enhanced operational life.

5.5 **MiG-29 Upgrade:** The series upgrade of MiG-29 aircraft is currently underway at a Base Repair Depot of IAF.

5.6 **Rafale Aircraft:** Procurement of 36 Rafale aircraft through Inter Governmental agreement between the Indian and French Government is being progressed.

5.7 **Additional C-130J:** The first C-1307J Squadron has been fully operationalised. Procurement of additional aircraft is also being undertaken. Contract was finalized in December 2013. Procurement of these

additional aircraft would give boost to special operations, airborne assault and air mobility potential of the IAF.

5.8 **AN-32 Upgrade:** AN-32 fleet was inducted into IAF between 1984 and 1991. Total Technical Life Extension (TTLE)/ Re-Equipment (RE) project is concurrently underway at Kyiv, Ukraine and No.1 Base Repair Depot (BRD) at Kanpur. This project will extend the aircraft's life by 15 years besides enhancing its operational potential and safety.

5.9 **Helicopters:** The rotary wing capabilities of the IAF are poised to undergo a paradigm growth. IAF has already inducted some of the latest machines. Mi-17 V5, is a quantum jump in capability in terms of the avionics, weapon systems as well as its hot and high altitude performance. Process is underway to upgrade existing Mi-17s and Mi-17 IVs with the latest avionics and glass cockpits.

5.10 **Attack Helicopters:** A contract was signed in September 2015 for procurement of state of the art AH-64E Apache attack helicopters. The Attack Helicopters are critical combat assets utilised for employment in Anti-Tank Guided Missile role, Counter Insurgency operations, Suppression of Enemy Air Defences, Unmanned Aerial Vehicle neutralization operations, Combat Search and Rescue operations and Low Intensity Conflict Operations. Attack helicopters offer unique offensive capability including support to Army Strike Corps and these capabilities are also required at high altitudes in the mountainous terrain on our Northern borders, not available hitherto.

Apache Attack Helicopter

5.11 **Heavy Lift Helicopters (HLH):** A contract was signed in September 2015 for procurement of Chinook CH-47F (I) Heavy Lift Helicopters (HLH). The delivery of these helicopters will be in a phased manner. The HLH are required to conduct strategic and tactical airlift missions in support of the armed forces and undertake humanitarian assistance and disaster relief missions during calamities. HLH are critically required to support infrastructure build-up in mountainous regions. Heavy bridging and road construction equipment can be airlifted only by this class of helicopters.

Chinook Heavy Lift Helicopter (HLH)

5.12 **Pilatus Induction:** Delivery of all Basic Trainer Aircraft (PC-7 MK II) from M/s Pilatus Aircraft Limited to IAF has been completed in October 2015 as per the procurement contract signed between Government of India and the Swiss company on May 24, 2012. Aircraft is currently in use for ab-initio pilot training. However, utilisation of aircraft is further planned to increase to Stage II flying training also. This state of art aircraft is helping newly recruited pilots to prepare them for exacting requirement of combat flying.

Pilatus PC-7 MK II

5.13 **Microlight:** A contract was signed in October 2015 with Pipistrel, Slovenia for supply of microlights. It will be used in IAF for enhancement of flight safety by monitoring bird activity in the vicinity of airfields and directing bird controlling measures.

5.14 **Restoration of Vintage Flight:** IAF has several vintage aircraft of World War-II era. These aircraft represent an important part of world aviation and IAF heritage. In 2008, after undertaking detailed survey of expertise available across the globe on restoration of vintage aircraft, a decision was taken to restore these aircraft with assistance from vendors within and outside the country. One Tiger Moth and one Harvard aircraft were sent to UK for Phase-I restoration. These aircraft have flown on Air Force day displaying the rich heritage of IAF.

Air Defence Network

5.15 **Air Defence Radars:** To strengthen the existing air defence radar cover over Indian airspace, variety of new sensors are being inducted in IAF. Recent inductions include the following:

(a) **MPR :** Medium Power Radars from Israel have replaced legacy radars of 80s' technology.

Medium Power Radar

(b) **LLTR:** To fill the low level radar gaps along the border, new Low Level Transportable Radars (LLTRs) are being inducted in IAF from M/s Thales, France with transfer of technology. M/s BEL will produce few of these state of the art radars in India. These radars are mobile and can be deployed anywhere as per operational requirements.

Low Level Transportable Radars

(c) **LLLWR:** Low Level Light Weight Radars (LLLWRs) are being inducted to provide electronic eye to our Mobile Observation Flights (MOF). These radars scan for low level aerial threats and provide extended early warning.

Low Level Light Weight Radar

Missile Systems

5.16 **Akash Missile System:** IAF is inducting Akash Missile System (AMS) in its inventory. A formal induction ceremony of AMS was conducted on July 10, 2015 at Air Force Station Gwalior. Raksha Mantri formally handed over the Akash Missile System to IAF during the ceremony.

5.17 **Harpoon:** Letter of Agreement for procurement of Harpoon Anti-ship operational missiles and associated equipment was signed in August 2010. Training of the aircrew has been completed for carriage and delivery of these weapons. Integration of these weapons would enhance the capability of the IAF in neutralizing threats emanating from the maritime domain and thereby providing greater support to the Indian Navy in its operations at sea.

5.18 **MICA Air to Air Missiles:** The delivery of MICA air to air missiles for upgraded M-2000 aircraft has commenced and these missiles will further increase the capability of the M-2000 aircraft as a potent platform.

5.19 **SPICE-2000 Bombs:** IAF has acquired precision guided bombs with increased accuracy and penetration for use against fortified and underground command centres. This weapon has been tested and its capabilities have been validated at an IAF firing range.

5.20 **Indigenous Pechora Combat Simulator (IPCS)**

(a) Pechora missile system is one of the vital elements of Air Defence setup of IAF. The system was procured from Russia during the period from 1974 to 1989 to provide Air Defence cover to assets of national importance. Pechora system has been provided with simulators for conduct of training for the missile combat crew.

(b) In order to facilitate extended utilisation, IAF has indigenized the class room version Pechora combat simulator for training of combat crew. The simulator has been indigenized in-house at a cost of ` 2.3 lacs against the cost of ` 55 lacs quoted by the vendor. A certificate of excellence has been awarded for indigenisation of simulator on October 8, 2015 by the Prime Minister of India.

5.21 **Pechora Missile Refurbishment:** To augment the missile inventory, IAF made in-house efforts to refurbish the Pechora missiles, with a fresh lease of life by another 10 years. Half of the missiles have already been refurbished and the rest are under refurbishment. The Prime Minister of India has awarded a certificate of excellence on October 8, 2015 for refurbishment of Pechora missile.

Metereology

5.22 **Award of 'Certificate of Excellence' by Hon'ble Prime Minister:** The importance and utility of current weather information lies in its currency and availability in real-time to operators and decision makers. To meet this requirement, the Directorate of Meteorology has conceptualised and implemented the on line portal – Mausam on Line (MoL). The ultimate aim was to provide real time weather observation and forecasts to the commanders and operators towards efficient planning and execution of Air operations. Directorate of Meteorology was awarded Certificate for excellence in innovation by the Prime Minister on October 8, 2015.

Joint Exercises and Operations

5.23 Joint operations are the key to success in any future conflict and thus form an important part of the training/ exercises. Indo-US Joint Exercise "Yudh Abhyas", Indo-UK Jt Ex "Ajeya Warrior", India-China joint Ex "Hand-in-Hand", Indo-Thailand joint training "Ex Maitree", Indo-Maldives combined Training "Ex Ekuverian" are the joint exercises which have already been conducted by the Indian Army this year with friendly Foreign countries along with IAF air assets. IAF C-17 aircraft were used for induction and de-induction of Indian Army troops and IAF Medium Lift Helicopters and attack helicopters were extensively used in these exercises.

Establishment of New Formation/ Units

5.24 **Suryakiran Aerobatic Team:** 52 Squadron has been resurrected in aerobatic role w.e.f. February 16, 2015 at AF Station Bidar using Hawk aircraft. Squadron has been allotted with six aircraft to perform

Hawk Aircraft

aerobatic displays. These aircraft have been painted with an approved colour scheme. The Squadron recently performed its first aerobatic display on October 8, 2015, on Air Force day at AF Station Hindan.

6

INDIAN COAST GUARD

Synergy through Operational Optimization

Indian Coast Guard 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.

6.1 Indian Coast Guard (ICG) came into being on February 1, 1977 on approval of the Cabinet Committee on Political Affairs to set up an interim Coast Guard Organisation. 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 ICG 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 **Organisation:** The Command and Control of the Coast Guard lies with the Director General of Indian Coast Guard, 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) [CGC(WS)] has been established w.e.f. March 4, 2015 at Mumbai. In addition, there are 42 Stations, 2 Air Stations, 6 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.

(e) Lead Intelligence Agency for maritime borders.

6.5 **Existing Force Level:** At present, the Indian Coast Guard has a force level of 55 Ships, 64 Boats/ Hovercraft and 62 Aircraft to carry out regular surveillance of the Maritime zones of India. 1 Offshore Patrol Vessel (OPV), 01 Pollution Control Vessel (PCV), 7 Fast Patrol Vessels (FPVs) and 11 Interceptor Boats (IBs) have joined the Coast Guard fleet in 2015 (January 1 to December 31, 2015).

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 patroling and surveillance of the entire coastline. Since 2009, a total of 129 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. A total of 200 Coastal Security operations have been conducted since 2009, in coordination with all stake holders.

6.9 **Community Interaction Programmes:** Indian Coast Guard conducts regular interaction with fisher folks through Community Interaction Programmes. Since 2009, a total of 4097 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 **Commissioning of Offshore Patrol Vessel (OPV):** One OPV namely Indian Coast Guard Ship (ICGS) Samarth has been commissioned on November 10, 2015.

6.11 **Induction of Pollution Control Vessel (PCV):** One PCV namely ICGS Samudra Pavak has been inducted on December 9, 2015.

6.12 **Commissioning of Fast Patrol Vessels (FPVs):** Seven Fast Patrol Vessles, namely ICGS Amogh, ICGS Anagh, ICGS Ankit, ICGS Anmol, ICGS Apoorva, ICGS Rani Durgavati and ICGS

Arinjay have been commissioned during the year 2015.

6.13 **Commissioning of Interceptor Boats (IBs):** 11 Interceptor Boats(IBs) namely, C-414, C-415, C-430, C-416, C-417, C-155, C-418, C-419, C-420, C-421 and C-422 have been commissioned during the year 2015 .

INTERNATIONAL COOPERATION

6.14 **Ninth Annual Meeting of Governing Council of ReCAAP:** Indian Coast Guard continued to support and actively participate in the Regional Cooperation Agreement on Combating Piracy and Armed Robbery Against Ships in Asia (ReCAAP) organization. The Director General Indian Coast Guard (DGICG) attended the Ninth Annual Meeting of Governing Council of ReCAAP from March 16 to 19, 2015 at Singapore.

6.15 **High Level Meeting between DGICG and DG, BCG:** A high level delegation led by Rear Admiral Mohammad Makbul Hossain, OSP, NDU, PSC, Director General, Bangladesh Coast Guard (BCG) was on visit to India from April 5 to 10, 2015. The DG, BCG visited Coast Guard Headquarters (CGHQ), New Delhi on April 6, 2015 to participate in the High Level Meeting with Director General, Indian Coast Guard.

6.16 **Visit of DGICG to Bangladesh:** Director General, Indian Coast Guard visited Bangladesh to attend a High Level Meeting with Director General Bangladesh Coast Guard from December 7 to 11, 2015. The meeting focused on developing operational and training linkages between the two Coast Guards.

6.17 **High Level Meeting between Indian Coast Guard (ICG) and Maritime Border Command Australia:** The high level delegation meeting between Indian Coast Guard (ICG) and Maritime Border Command (MBC), Australia was held on August 21, 2015 at CGHQ, New Delhi. The Austrailan delegation was headed by R Adm Michael Noonan, Commander, MBC. The visit was in continuation of the various efforts by the Governments of the two countries towards cooperation between the ICG and MBC and pursuance of the discussions on feasibility of co-operation on mutually relevant issue.

6.18 **High Level Meeting (HLM) between Indian Coast Guard (ICG) and UAE Critical Infrastructure & Coastal Protection Authority (CICPA):** The high level delegation meeting between Indian Coast Guard (ICG) and UAE CICPA was held on December 14, 2015 at Conference hall, Coast Guard Headquarters, New Delhi. The UAE CICPA delegation was headed by Colonel Khamis Shames Al Wehacbi, MA, UAE. The delegation came to acquaint themselves with the organizational structure and training facilities available with Indian Coast Guard.

6.19 **Permanent transfer of ICGS Varaha to Sri Lanka:** ICGS Varaha, which was earlier given to Sri Lanka on lease w.e.f April 25, 2006 has been permanently transferred to Govt of Sri Lanka on August 27, 2015.

6.20 **Overseas Deployment of Indian Coast Guard Ships:** The details of overseas visits undertaken by Indian Coast Guard Ships during year 2015 are as follows:

Sl.	ICG Ship	Duration	Country
(a)	ICGS Vaibhav	January 28 to February 2, 2015	Sri Lanka
(b)	ICGS Vishwast	February 4 to 7, 2015 February 10 to 13, 2015	Malaysia, Myanmar
(c)	ICGS Sangram	March 26 to April 1, 2015	Maldives
(d)	ICGS Sarang	July 23 to September 5, 2015	Singapore, Hong Kong, Korea, Vietnam
(e)	ICGS Samrat	October 21 to November 15, 2015	Indonesia, Thailand, Cambodia, Malaysia

6.21 Signing of MOU

(a) **Vietnam Coast Guard (VCG):** A Memorandum of Understanding (MoU) for the establishment of collaborative relationship to combat transnational crime and develop mutual cooperation between ICG and Vietnam Coast Guard (VCG) was signed on May 25, 2015 during the visit of HE Gen Phung Quang Thanh, Minister of National Defence of Vietnam (VDM) to India from May 23-26, 2015.

(b) **Bangladesh Coast Guard (BCG):** An MoU between ICG and BCG was signed on June 6, 2015 during the visit of Prime Minister to Bangladesh for the establishment of collaborative relationship to combat transnational illegal activities at sea and develop regional cooperation between the two Coast Guards.

Achievements of ICG

6.22 The significance of the Indian Coast Guard can be derived from the purpose for which it has been created, and comparing it with its achievements. Some of the important 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 to December 31, 2015	
(i)	Value of Contraband seized	` 618.370 Crore
(ii)	Poachers Apprehended	18 Boats & 160 Crew
(iii)	Smugglers Apprehended	4 Boats & 46 Crew
(iv)	Total Search and Rescue (SAR) Missions	191
(v)	Search and Rescue (SAR) Sorties	438
(vi)	Lives Saved	356
(vii)	Medical Evacuations (Number of persons evacuated)	29

6.23 SEARCH & RESCUE

(a) **XIVth National Maritime Search and Rescue (NMSAR) Board Meeting:** The XIVth Meeting of the National Maritime Search and Rescue (NMSAR) Board was held at Coast Guard Regional Headquarters (North West), Gandhi Nagar on July 17, 2015. The meeting was chaired by DGICG. Various issues related with improvement of Search and Rescue (SAR) system in Indian Search and Rescue Region (SRR) were discussed.

(b) **Mass Rescue Operation for Passengers Stranded off Elephanta Island:** On February 17, 2015, Maritime Rescue Coordination Centre (MRCC), Mumbai received an information from Police Station Navi Mumbai regarding rescue assistance to stranded passenger boat 'Navrang' with 78 passengers (34 Males, 33 Females and 11 Children), off Elephanta Island near Mumbai. On receipt of information, ACV H-194 was deployed on February 17, 2015 to carry out mass rescue operation. On February 17, 2015, ACV arrived on scene, evacuated all the 78 passengers and disembarked them at hoverport Belapur safely.

Rescue Operation for Passengers Stranded off Elephanta Island

(c) **SAR for Pawan Hans Helicopter ditched near Offshore Development Area (Op Sahayta):** 'Ops Sahayata' was executed by Coast Guard Regional Headquarters (West), Mumbai. The extensive search over a period of 7 days for the missing helicopter of Pawan Hans was undertaken and finally yielded result on November 9, 2015 when Furgo Mapper (Survey Vessel) reported debris in position close to last AIS position reported by Coastal Surveillance Network. Diving was undertaken by DSV Samudra Sevak in position ½ cable east (unit of maritime distance) of old datum. Salvage of cockpit alongwith body of one pilot was undertaken by DSV Samudra Sevak.

(d) **Rescue of Crew from Grounded Vessel MV Coastal Pride-off Mumbai:** On June 23, 2015, MRCC Mumbai received information from M/s New Era Shipping Pvt. Ltd. regarding loss of propulsion of MV Coastal Pride in position 255-Umargam Lt- 13 nm during the night of June 22-23, 2015. The vessel had anchored in position 15 nm NNW of Dahanu Light at a depth of 22 metres but could not sustain view prevailing weather and dragged her anchor. The vessel drifted landward and grounded in position 303-Umargaon Lt-7.4 nm with 14 crew onboard. On receipt of the information, CG helo ex-Daman was launched on June 24, 2015 and it evacuated 8 crew progressively in three details and transferred them to the Umargaon. Remaining 6 crew were rescued by IN Seaking and transferred to Umargaon. All crew were escorted to Daman by Bus for medical treatment and handed over to local agent.

6.24 MEDICAL EVACUATION

(a) **Medical Evacuation from MV St. Gregory:** On January 1, 2015, MRCC Mumbai received a request from master of

MV St Gregory regarding medevac of a crew member suffering from unstoppable bleeding due to a deep wound on right hand in position 192-Porbandar-52 n miles. Upon receipt of information, CG ALH CG 851 from Porbandar was launched at 1532 on January 1, 2015 and patient was evacuated.

Medical Evacuation from MV St. Gregory

(b) **Medical Evacuation from LNG Mubaraz:** On January 4, 2015, MRCC Mumbai received a request from master of LNG Mubaraz regarding medevac of a crew member off Goa who was suffering from dislocated left elbow. The ship arrived off Goa on January 6, 2015. ICG helo 806 was launched from 800 Sqn (CG) Goa. The crew

Medical Evacuation from LNG Mubaraz

was evacuated from the ship and handed over to local agent for further care/ treatment.

(c) **Medical Evacuation from MT Bunga Angsana off Beypore:** On February 7, 2015, Maritime Rescue Coordination Center (MRCC), Mumbai received a request from MT Bunga Angsana (Flag – Malaysia) for medical evacuation of a crew member (Mr. Khan Muhammad Riaz, aged – 55 Yrs, Pakistani Nationality) suffering from appendicitis in position 300-Beypore Lt- 57 n miles. On receipt of information, ICG Interceptor Boat (IB) ICGS C-404 was deployed from Beypore on February 7, 2015 with medical team embarked for evacuation of the patient. ICG ship arrived datum on February 7, 2015 and evacuated the patient.

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7

DEFENCE PRODUCTION

First 105M Offshore Patrol Vessel (OPV) of the Project delivered by Goa Shipyard Limited to Coast Guard

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.

7.1 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) and
- 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	2012-13	2013-14	2014-15	2015-16 (up to Dec, 2015)
HAL	14202	15867	16289	10228
BEL	6290	6127	6659	4466
BEML#	2879	2814	2599	1840
BDL	1177	1804	2770	2446.70
GRSE	1529	1611	1651.31	1030.95
GSL	507	509	569.55	465.09
HSL	484	453	294.16	340.16
MDL	2291	2865	3592.60	2174.64
MIDHANI	537	572	640.04	477.77
OFB	11975	11123	11364	7526
Total	**41871**	**43745**	**46428.66**	**30995.31**

#Figures indicated are Net to fall in line with the current MoU Guidelines.

TABLE-7.2

Profit after Tax of DPSUs

(` in Crore)

Name of DPSU	2012-13	2013-14	2014-15	2015-16* (up to Dec, 2015)
HAL	2997	2693	2388	1005
BEL	890	932	1167	563.16
BEML	-80	5	6.76	-102
BDL	288	346	419	318
GRSE	132	121	43.45	47.22
GSL	16	-61	78.24	32.26
HSL	-55	-46	-202.84	-60.34
MDL	413	398	491.59	388.74
MIDHANI	83	83	102.13	66.26
Total	**4684**	**4471**	**4493.33**	**2258.3**

* Provisional

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. 12(2015 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% on case to case basis wherever it is likely to result in access to modern and 'state of the art' technology in the country.

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 the one of becoming partners in the manufacture of complete advanced equipment/ systems.

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 319 Industrial Licences (ILs) covering 190 companies till January, 2016 for manufacture of a wide range of defence items to private companies. 50 licensed companies covering 79 industrial licences have so far reported commencement of production.

7.11 After opening up of the Defence Industry Sector for Indian Private sector Participation, so far 34 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 ` 24.84 crore (US$ 5.02 millions) has been received in the Defence

Industry Sector from April 2000 to September 2015 (Source: FDI Statistics on htpp://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 licences for a period of 15 years, further extendable upto 18 years to be granted by administrative ministry. Both Press Notes are available on DIPP websitehtpp://www.dipp.nic.in.

7.13 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.

7.14 To promote the participation of private sector, particularly SMEs for defence manufacturing, Outsourcing and Vendor Development Guidelines for DPSUs and OFB have been formulated and circulated to them. The guidelines mandate that each DPSU and OFB to have a short-term and long-term outsourcing and vendor development plan to gradually increase the outsourcing from private sector including SMEs. The guidelines also include vendor development for import substitution.

Export Profile of Indian Defence Industry

7.15 Standard Operating Procedure (SOP) for issue of NOC for export of Military Stores by Public/ Private Defence Industry has been revised and placed in the public domain in August, 2015. Further, online system for accepting applications for No Objection Certificates (NOCs) which was introduced in November, 2014 is working satisfactorily.

7.16 The value of defence export by DPSUs, OFB and the Private Sector Companies (based on the NOCs issued), for the financial year 2015-16 (upto December, 2015) is ` 1379.42 crore as compared to ` 994.04

crore during the financial year 2014-15. The trend in export shows phenomenal growth by the industry. The export by private defence industry has shown accelerated growth. About 12-14 companies in the private sector have contributed to defence exports.

7.17 Some of the major export destinations for defence products have been Algeria, Afghanistan, Israel, Ecuador, Russia, UK, Indonesia, Nepal, Oman, Romania, Belgium, Vietnam, Myanmar, South Korea and Sudan. The major defence items being exported are Personal Protective Items, Offshore Patrol Vessels, Spares for Radar, Cheetal Helicopters, Turbo Chargers and Batteries, Electronic Systems (EOPOD ALH System), Light Engineering Mechanical Parts etc.

ORDNANCE FACTORIES ORGANISATION

7.18 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.

7.19 **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.

7.20 **Production achievement:** The turnover during the financial year 2014-15 was ` 11,364 crore. The projected turnover for 2015-16 is ` 13,514 crore. Nearly, 80% of the supplies by OFB are for the Indian Army.

7.21 **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. In this regard, a Comprehensive Modernisation Plan for the XIIth five year Plan has been prepared. Under this plan, expenditure of ` 2927 crore has been made.

7.22 **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 rep as a Member.

7.23 Achievements and Awards:

- Successful trials of indigenously designed and manufactured 155 mm X 45 Caliber Artillery Gun (Dhanush).
- Successful proof firing of 155 mmX52 cal gun systems developed by OFB at PXE Balasore on August 13, 2015 for the first time in the country.
- Development of fuze for anti-submarine rocket RGB-60 and RGB-12 by Ammunition Factory Khadki. First out-turn lot of the Fuze issued to Indian Navy in September, 2015.
- In house developed 7.62mm Trichy Assault Rifle trial evaluated by Indian Coast Guard in August 2015 and recommended for induction for Indian Coast Guard operations.
- Indigenous development of Bi-Modular Charge System (BMCS) modules.
- Vehicle Factory, Jabalpur (VFJ) selected as an honorary entrant to the CNBC-TV18 OVERDRIVE Hall of Fame for the current year.

Trichy Assault Rifle (TAR)

7.24 **Swatchh Bharat Mission:** Nearby villages have been adopted by O.F. Badmal, O.F. Khamaria, O.F. Ambajhari, O.F. Itarsi, O.F. Katni, O.F. Medak for the purpose of basic medical care and improving hygiene, sanitation etc.

DEFENCE PUBLIC SECTOR UNDERTAKINGS (DPSUs)

HINDUSTAN AERONAUTICS LIMITED (HAL)

7.25 Hindustan Aeronautics Limited (HAL), a Navratna Company, is the largest DPSU under the Department of Defence Production. HAL has 20 Production Divisions, 11 R&D Centres and one Facility Management Division spread across the Country. It has so far produced 15 types of aircraft from in-house R&D and 14 types under license. Major aircraft/ helicopters in the current production range are SU-30MKI Multi-role Fighter, Hawk – Advanced Jet Trainer, Light Combat Aircraft (LCA), Dornier-228 Light Transport Aircraft, Dhruv- Advanced Light Helicopter and Cheetal- helicopters.

7.26 **Important Events/ Achievements in 2015-16:**

(i) HAL is celebrating Platinum Jubilee on completion of 75 years of existence in 2015. Coinciding with the Platinum Jubilee Celebration, the major achievements in 2015-16 include core engine run of 25 KN turbofan engine (HTFE-25), Design and Development initiation of 1200 KW Turbo shaft engine, Inauguration of structural repair shop for

Su-30 MKI ROH, Renovated heritage centres across HAL, New campus of HAL Management Academy and 2nd line of ALH production at TAD, Kanpur.

(ii) Prime Minister laid the foundation stone for Hindustan Aeronautics Limited (HAL)'s new Helicopter Manufacturing Facility at Biderehalla Kaval, Gubbi Taluk, Tumakuru, about 100 km from Bengaluru, on January 3, 2016.

(iii) Desired stall characteristics of Intermediate Jet Trainer (IJT) achieved, various types of trials completed. 17 spin test flights carried out and further spin trials are under process.

(iv) 1st Flight (Tethered Flight) of Unmanned Aerial Vehicles (RUAVs), which are remotely controlled by ground control stations, carried out on December 16, 2015. In future these R-UAVs can be used for all kinds of missions deemed Dull, Dirty and Dangerous.

(v) Transport Aircraft Division, Kanpur, has been awarded 'Production Organization Approval' by DGCA for manufacture and ROH of Dornier Do -228 aircraft for civil sector. This will supplement HAL's efforts to diversify into civil aviation sector.

(vi) HAL has delivered the Orbiter Craft Module Structure to ISRO Satellite Centre (ISAC) on June 10, 2015 for the Mars Orbiter Mission (Mangalyan).

7.27 **Awards Received During 2015-16:**

(i) HAL bagged Raksha Mantri's Award for Excellence in Performance, Innovation and Indigenisation for the year 2012-13 on January 28, 2016.

(ii) HAL has been honoured with the 'Infosec Maestro Award 2015' for the project 'HAL Single Sign-On', a single web portal for all the applications of HAL for innovative and talented information security initiatives across India.

(iii) HAL has been conferred with 'National Export Award for Star Performance' for the year 2013-14 on September 3, 2015 by Engineering Export Promotion Council.

(iv) HAL has bagged 'BT–Star PSU Excellence Awards 2015'.

7.28 **Environment Protection:** All the Divisions have certificates from Pollution Control Boards of respective States for operation as per statutory requirements. Sewage Treatment Plants (STP) have been built for Factories and Townships. Two plants of 500 Kg per Day capacity Organic Solid Waste Converters have been installed at Bengaluru. The Company has adopted Energy saving products like LED Lamps and Energy star rated equipment with energy saving of 25 Lakh units of Electricity by the Divisions based at Bengaluru alone. The Company has Plan of setting up Renewable Energy Plants with capacity of 50 MW over the next five years. So far, Solar Power Plants with total power generation of 0.5 MW have been commissioned. Orders for setting up 6.3 MW Wind Power Plant and 3.5 MW Solar Power Plant have been awarded.

PM being briefed by Chairman HAL on features of LCH at HAL Stall during Aero India 2015

RM pays a visit to HAL Stall during Aero India 2015

BHARAT ELECTRONICS LIMITED (BEL)

7.29 BEL, a Navratna Company, established in 1954 under MoD has nine Units across India. BEL has core competencies in Defence sector 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, ICs, Hybrid Microcircuits, Semiconductor devices, solar cells etc.

7.30 **Research & Development:** BEL has set up 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 8% of its turnover on R&D.

7.31 **Major achievements/ awards in 2015-16:**

(i) Indigenously Developed Surface-to-Air-Akash Missile System was inducted into IAF in July 2015.

(ii) Foundation stone of 'Defence Systems Integration Complex' at Palasamudram in Anantapur district was laid by Raksha Mantri on September 30, 2015 aimed at strengthening Defence capabilities in Surface-to-Air Missile System area.

(iii) BEL was conferred with 'Dun & Bradstreet India's Top PSUs Award 2015' in Electrical & Electronics Sector.

(iv) BEL bagged ELCINA-EFY awards for Excellence in Electronic Hardware Manufacturing & Services for 2014-15 in Quality and Exports categories.

7.32 **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 Processes, Practices & Infrastructure etc.

7.33 **Indigenisation:** BEL has achieved around 80% of its turnover from indigenously developed products. Some of the major ones developed in recent past include Schilka Air-Defence System (Army), Software Defined

Radio (Navy), Communication Network (Link II Mod III), Unit Level Switch Board Mk-III, Advanced Composite Communication System (Navy), Ship Data Network for P16A, Simulator for Akash Weapon System, Missile Warning System (Army), New Generation Sonars (Navy) etc. To bridge the Technology gaps, BEL is systematically indigenizing the components & sub-assemblies of ToT products in a phased manner.

7.34 **Modernization:** BEL has been consistently investing in modernisation of facilities which is essential for successful indigenization efforts. The recent major investments include Image Intensifier Tube Manufacturing & Testing facilities, Near Field Test Range Facility, Antenna Test Facility, EMI/ EMC Test Chambers, Super components Assembly& Test facility, Indoor/ Outdoor Test Platforms for Radars& Missile Systems etc. BEL will be investing around ` 500 Crore towards CAPEX for 2015-16 through internal accruals.

BHARAT DYNAMICS LTD. (BDL)

7.35 Bharat Dynamics Limited (BDL), a Mini Ratna Category-I Company was incorporated in the year 1970 under the Ministry of Defence. A pioneer in the manufacture of Anti-Tank Guided Missiles (ATGM) in the country, BDL is now involved in manufacturing ATGMs of new generation, Surface-to-air weapon systems, strategic weapons, launchers, underwater weapons, decoys and test equipment. BDL is fully geared up to meet the demands of the Armed Forces by capacity augmentation of all Major projects including ATGMs and SAMs by establishing new units at Amravati, Maharashtra and Ibrahimpatnam, Ranga Reddy District, Telangana State.

7.36 BDL's three Units at Kanchanbagh, Bhanur and Visakhapatnam have ISO 14001 Certification. BDL's Production Divisions, Design & Engineering and Information Technology Divisions have obtained ISO 9001:2008 accreditation.

7.37 BDL has integrated LRSAM missile for Indian Navy for which HOT (Home On Target) test has been conducted and two LRSAM Missiles have been test fired successfully from Indian Warship in December 2015. BDL is also the Lead Integrator for MRSAM (Army). Currently Akash Weapons System (AWS) is one of the major products indigenously produced by BDL with DRDO as designer, which is being supplied to Indian Army and Air Force.

AKASH SAM

7.38 BDL is putting constant and determined efforts towards indigenisation of ATGMs being manufactured with an objective of increasing self-reliance, reduction of foreign exchange and cost reduction. BDL has achieved indigenization upto 90%, 76.4% and 71% in respect of Konkurs-M

ATGM, Invar ATGM and Milan-2T ATGM respectively.

7.39 **CAPEX & Modernization:** ` 226 crore has been earmarked for the year 2015-16 on CAPEX. Out of this `110 crore will be spent on modernization of Plant & Machinery and other operational activities of the company.

BEML Limited

7.40 BEML, established in 1964, is a Mini-Ratna (Category-1) Public Sector Undertaking. The Company has nine manufacturing units located at Bengaluru, Kolar Gold Fields (KGF), Mysuru and Palakkad and subsidiary steel Foundry - Vignyan Industries Ltd, in Tarikere, Chikmagalur District and engaged in design, development, manufacturing, sales and after sales activities of a wide range of areas of Mining & Construction, Defence and Rail & Metro products. The Company's International Business covers over 58 countries in Asia, Africa, and Latin America.

7.41 **R&D initiatives and Development of New Products:** The Company has a focused approach on in-house R&D, spending around 3% of its turnover towards R&D. The in-house R&D developed products have contributed on an average of 50% of the total turnover in the last 3 years. During the current year SMERCH Project for 8 x 8 and 10 x 10 has been taken up. 7 patents have been filed since 2008-09 including 2 patents viz. Forged Design Tooth Point for Backhoe Loader in 2014-15 and Tooth Point for Walking Dragline Buckets in 2015-16.

Smerch 10x10 Ammunition Carrier with Crane

Stainless Steel electric Multiple Unit (Ssemu)

BP100 TON – PIPE LAYER

7.42 **Indigenization:** Indigenization level is over 90% in respect of Mining & Construction products and Rail products and 50% for Metro cars. In case of Defence products, viz., PMS Bridge, ATT, Aircraft weapon loader, 50T trailer etc., the company achieved 100% indigenization.

7.43 **Environmental Protection:** The Company in association with the Forest

department of Karnataka has planted 2015 tree saplings in KGF, Mysuru and Bengaluru complex. It has set up a 5MW Windmill at Gadag district in Karnataka towards green energy initiative.

7.44 **Awards received:** BEML Limited has been awarded with Raksha Mantri Award for the year 2012-13 under 'Best Performance in Exports' category. BEML also received India's Top Challenger Company' in the category of Construction & Engineering in the 12th Annual Construction World Global Awards-2014 by ASAPP Media Information Group and has also bagged 'Silver Shield for Star Performer – Large Enterprise (Machinery for Mining, Quarrying and Construction & Parts thereof)' awarded by EEPC.

MISHRA DHATU NIGAM LIMITED (MIDHANI)

7.45 MIDHANI, a Mini-Ratna company, was established in 1973 under the administrative control of Department of Defence Production & Supplies, Ministry of Defence to achieve self reliance in the Manufacture of a wide spectrum of critical and complex alloys like super alloys, titanium alloys, special steels & stainless steels, soft magnetic alloys etc in variety of mill forms using state-of-art production facilities. MIDHANI caters to the needs of Defence, space, aeronautics, nuclear power, electronics, tele-communications and many other strategic sectors of the country. MIDHANI has developed, manufactured and supplied more than 105 grades of high performance alloys in different shapes, sizes, forms towards programmes of national importance in the Defence, Space and Atomic Energy sectors.

7.46 **Indigenization:** Most of the alloys/ products manufactured in MIDHANI are import substitutes. Some of the recently developed products such as Superni42, Supercast55, steering gear assembly for ARIHANT submarine, Titan 26 discs for Adour engines, C103 sheets for satellite propulsion, etc, were manufactured using innovative manufacturing technology.

7.47 **Financial Performance:** MIDHANI has achieved an impressive Compounded Annual Growth Rate (CAGR) of about 15% in sales over the past 10 years and has also continuously earned "Excellent" MoU performance rating.

7.48 **Environment Protection:** Solar Power plant has been set up at vacant lands of MIDHANI Township for utilizing renewable energy for power saving. Plantation of approx 1000 saplings of fruit bearing, aromatic & medicinal plants as part of Oushada Vanam & Haritha Vanam projects were also undertaken.

MAZAGON DOCK SHIPBUILDERS LIMITED (MDL)

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

7.50 **Deliveries and Launchings:** Y-702, "INS KOCHI", 2nd ship of P15A Class delivered on September 9, 2015, Scorpene class Submarine KALVARI, undocked on April

6, 2015 and launched on October 29, 2015, First Destroyer of P15B VISAKHAPATNAM launched on April 20, 2015.

Undocking of Scorpene Class Submarine Kalvari on April 6, 2015

Launching of First Destroyer of P15B Visakhapatnam on April 20, 2015

7.51 **R&D Initiatives:** During the current year an amount of ` 31 Crore has been spent on R&D activities as on December 31, 2015. Three In-house Projects- Development of methodology for lifting of 100 T to 250 T mega blocks, CFD analysis of plated mast structure for EOD camera and plume analysis, Technology adaptation for warship design optimization by leveraging virtual reality laboratory have been taken up by the R&D team at MDL.

7.52 **Modernization:** MDL has successfully completed the augmentation of its infrastructure through Mazdock Modernization Project (MMP). In the next phase of modernization, MDL plans to expand its Shipbuilding and Submarine facilities at Alcock Yard, Outfit Assembly Shop in Alcock Yard, Extension of Track of Goliath Crane, Deepening of Ritchie Dry Dock and Construction of the Submarine Section Assembly (SSA) Workshop.

7.53 **Indigenization:** MDL has already setup a dedicated Indigenization Department to boost the Government's "Make-In-India" initiative and to take up the task of progressively increasing the indigenization content in Warships and Submarines. MDL's commitment towards indigenization is evident from the fact that percentage of indigenization in the ships built by MDL has increased from 42% (Delhi Class) in the year 1997 to approximately 78% (Kolkata Class) in the year 2015-16.

7.54 **Awards:** Some of the major awards received by MDL during the year are -'Aerospace Award 2015' for Excellence in Innovation, 'Golden Peacock Award' for 2015 in Innovation Product/ Service Award etc.

GARDEN REACH SHIPBUILDERS AND ENGINEERS LTD. (GRSE)

7.55 Garden Reach Shipbuilders and Engineers Ltd (GRSE), a Mini-Ratna Category-I Company is a profit making & dividend paying DPSU for the last 22 years. It has kept pace with India's expanding maritime interests and is established as a leading Shipbuilding yard.

7.56 Presently, 14 warships are under construction in GRSE which include two Anti-Submarine Warfare Corvettes (ASWC), eight Landing Craft Utility (LCU) ships and four Water Jet Fast Attack Crafts (WJFAC). The Second ASW Stealth Corvette (INS Kadmatt) was delivered on November 26, 2015. GRSE also completed the Hull and 'Launched' five Warships during the current year.

Second Anti Submarine Warfare (Stealth) Corvette

Quality Leadership Award - 2015

7.57 **Modernization:** The Shipyard has been modernised to implement Modular Shipbuilding in construction of three (3) Stealth Frigates under Project 17A. The yard is undertaking first stage of Modular Shipbuilding on fifth ship of LCU Project.

7.58 **Awards:** GRSE has been conferred with following major awards during the year: (a) RM's Award for "Best Performing Defence Shipyard" for the years 2012-13 and 2013-14. With this, GRSE has won this award for four consecutive years (FY 2010-11, 2011-12, 2012-13 & 2013-14) in a row. (b) Rajbhasha Kirti Puraskar - 2nd Prize in 'C' Region for Excellence in Implementation of Official Language Policy for the year 2014-15 under PSU category.

7.59 GRSE has entered into a MoU with 'Indian Institute of Engineering, Science and Technology', (IIEST), Kolkata, for institutional collaboration in Education & Research in November, 2015.

GOA SHIPYARD LTD. (GSL)

7.60 Goa Shipyard Limited (GSL), a Mini-Ratna Group-I status company, is capable of indigenously designing and building sophisticated high technology ships for Indian Defence Forces and other varied clients including export markets. GSL is presently executing export orders worth `1200 Crore. New business development areas identified under diversification include construction of Hovercrafts for Indian Army. GSL prides itself in timely delivery of ships at 'fixed cost' and enjoys very strong execution skills.

7.61 **Deliveries/ Launchings during the Year:** GSL has delivered first 105M Offshore Patrol Vessel (OPV) of the Project to Coast Guard, as per contractual schedule, a major credit for any shipyard. Further, five Fast Interceptor Boats (FIB) for Government of Mauritius, were delivered ahead of schedule and three OPVs were launched in the year.

7.62 **Make in India Initiative:** GSL has been selected for indigenous construction of 12 Mine Counter Measure Vessels (MCMVs) under 'Make in India' initiative. Accordingly, Yard 'Infrastructure Augmentation Plan for MCMV' is being executed, on completion of which GSL will be able to build GRP Hull MCMVs with Transfer of Technology. Simultaneously yard has also worked out manpower augmentation plan to undertake the project.

Ongoing Modernisation for MCMV Project

7.63 **R&D Activities:** GSL is consistently investing in R&D activities and developing new generation platforms with improved features, like better fuel efficiency, higher endurance and higher speeds for varied operational roles and stealth features. GSL has successfully developed the design for 29 M, 50 Knots Interceptor Boats (IB) and delivery of first 105 M OPV (ICGS Samarth) has further validated the in-house design capability of GSL. Raksha Mantri's Award for Excellence in Design & Development of 50 knots Interceptor Boats was awarded to GSL during the year. Apart from this, GSL also bagged 'Rajbhasha Kirti' Award and 'Governance Now' Award during the year.

HINDUSTAN SHIPYARD LTD. (HSL)

7.64 HSL is the largest and a strategically located shipyard. The yard has built 174 vessels and repaired about 1940 vessels for Defence and Maritime Sector.

7.65 **Major Achievements:** The third of the series of five IPVs, "ICGS Rani Durgavati", for Indian Coast Guard, was handed over on June 1, 2015. It is a light armed surface vessel capable of operation inshore and around island territories. HSL has also completed the work on Medium Refit-cum-Modernisation of INS Sindhukirti, an EKM class submarine which is the most advanced platform ever to be retrofitted with a missile system in the country.

ICGS Rani Durgavathi

INS Sindhukirti

7.66 HSL has entered into a MoU with global ship building giant M/s Hyundai Heavy Industries Co Ltd. for transfer of technology for design and manufacture of submarines including its systems/ sub-systems on January 13, 2015.

7.67 **Proactive action to improve R & D:** HSL's design capability embraces a wide spectrum of general and special purpose vessels like the medium size Bulk Carriers of size up to 70,000 DWT, as well as product tankers, container vessels, dredgers, passenger ferries, survey vessels etc.

7.68 **Modernisation:** GoI has sanctioned ` 457.36 Crore for Refurbishment & Replacement of Machinery and Infrastructure under Landing Platform Dock Project on December 23, 2011 to prepare the yard for construction of warships. As on end December 2015, work orders worth ` 105.82 Crore have been placed.

DIRECTORATE GENERAL OF QUALITY ASSURANCE (DGQA)

7.69 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.

7.70 **Organisational Structure and Functions:** DGQA Organization 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.

7.71 Achievements:

(i) **Quality Assurance of Stores:** DGQA carried out inspection of defence stores of the total value of `15357.00 Crore during 2015-16 (up to November, 2015).

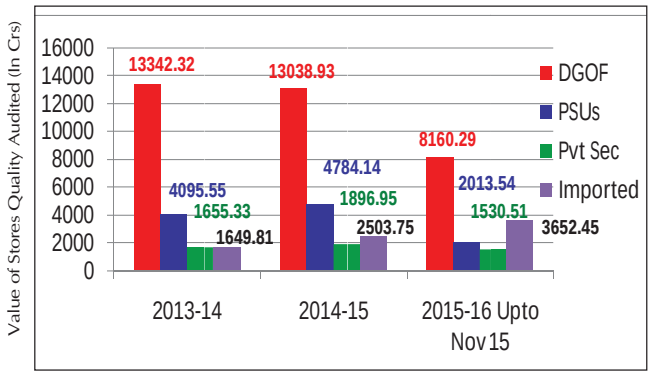
(ii) **DGQA Technical Evaluation:** During the year 2015-16(up to December 2015), DGQA has carried out a total of 52 Technical evaluations and attended 45 User Trials of various stores, ammunition and equipment, comprising of a number of complex sub systems. 23 PDIs and 51 JRIs of various equipment/stores were conducted during the year 2015-16 (Up to December 2015).

7.72 **Future Challenges:** The responsibility of Vendor Registration has been reassigned to DGQA. With the "Make in India" programme, it will give a boost to Indigenisation in the Defence Industry and result in growth in the number of new vendors. In order to maintain a uniform standard of Quality and strict evaluation norms, the concept of Configuration Management (CM) is being adopted to ensure technical integrity control of material throughout its life.

7.73 **Modernisation:** DGQA has upgraded its existing test facilities in line with NABL stipulations. It has also been providing Lab

Test facilities & Proof facilities to Private Vendors for Indigenization purposes. DGQA also plays a pivotal role in formulation of BIS standards and Joint Service Specifications besides Departmental specifications.

7.74 Manufacturer wise value of stores (` in Crore) inspected during last three years is as under:



DIRECTORATE GENERAL OF AERONAUTICAL QUALITY ASSURANCE (DGAQA)

7.75 DGAQA is the Regulatory Authority under Department of Defence Production 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 plays an important role in providing technical consultation to MoD, Service Headquarters, Defence PSUs & Main contractor during various stages of procurement and in-house manufacturing of Defence Aero stores. DGAQA is also the nodal agency for Missile Systems Quality Assurance Agency (MSQAA) and Strategic Systems Quality Assurance Group (SSQAG).

7.76 **Value of Stores Cleared:** Value of stores provided with QA coverage by DGAQA during the current year & previous three years is given below:

Value in ` (Crore)

2012-13	2013-14	2014-15	2015-16	
14,022	21,803	19,829	16,694*	15,583**

* upto 31.12.2015
** Anticipated from 1.1.2016 to 31.3.2016

7.77 Major projects under QA coverage of DGAQA

(a) **Development/ Manufacture Projects:**

(i) SU-30 (MKI) & AJT (Hawk MK-132): Manufacture under licence from Original Equipment Manufacturer (OEM).

(ii) Advance Light Helicopter (ALH) : Manufacture.

(iii) Light Combat Helicopter (LCH) : Development & Manufacturing.

(iv) Light Utility Helicopter (LUH) : Development.

(v) Light Combat Aircraft(LCA) : Manufacture.

(vi) Intermediate Jet Trainer (IJT) & Light Combat Helicopter (LCH): Development/ Manufacture.

(vii) Saras Transport Aircraft (Military Version) : Development.

(viii) Pilotless Target aircraft (PTA-Lakshya) : Manufacture.

(ix) Dornier (DO-228) aircraft : Manufacture.

(x) Parachutes (Brake, Pilot, Drogue, Anti Spin, Recovery etc) : Development/ Manufacture.

(xi) Air Armament Stores : Manufacture.

(xii) Indigenous Missiles : Development/ Manufacture.

(xiii) Airborne Early Warning Radar & Control System (AEW&C) : Development.

(xiv) Ground Radar Systems for Airborne applications : Development/ Manufacture.

(xv) Arrester Barrier Systems for aircraft : Manufacture.

(xvi) Flying Clothing for Air Crew : Development/ Manufacture etc.

(b) **Repair & Overhaul (ROH) Projects:** SU-30 MKI/MiG-21 BISON/ MiG-27 aircrafts, Jaguar/ Kiran Jet Trainer/ Mirage-2000 aircrafts, Dornier (DO-228)/ Avro (HS-748) aircrafts), Helicopters e.g. Cheetah, Chetak, ALH, Accessories & Aero Engines.

7.78 **Important Policy Decisions/ Achievements:**

(i) AQA Directives on "Guidelines for Qualification Test Procedure & Acceptance Test Procedure of Ground Equipment/ Test Equipment (Jigs) for Airborne Items (Electrical & Electronic)" and Environmental Stress Screening (ESS)" issued.

(ii) Guidelines document for LCA on "QA & Certification of Tools, Test Equipment & Ground support equipments" applicable during Design, Production and Deliverable Phase has been prepared and coordinated by RDAQA (LCA TEJAS), Bangalore.

(iii) Two DGAQA officers were awarded DRDO Agni Award for their contribution in providing effective QA coverage during Indigenous Development of Special Aluminium Alloys for LCA through DMRL Lab Hyderabad.

(iv) 144 Nos. of DGAQA officers have undergone different QA & Management related courses & trainings.

DIRECTORATE OF STANDARDISATION (DOS)

7.79 Directorate of Standardisation (DoS) was established in 1962 with an aim to control item proliferation within Defence Services. Foremost objective of DoS is towards establishing commonality in equipment and components among the three Services so that the overall inventory of the Defence Services is reduced to the minimum. These objectives are being progressively realised through:- (a) Preparation of various Standardisation documents, (b) Codification of Defence Inventory, (c) Entry Control.

7.80 **Targets & Achievements:** As per Roll on Plan (ROP) 2015-16, 89 new documents and 761 Revised documents have been completed upto December 2015. Approximately 5,500 Standardisation documents have been circulated upto December 31, 2015. Participation of

India in Main Group meetings of Allied Committee/135 (AC/135), the apex body of codification under NATO brought in new concepts towards codification and support to participation of Indian manufacturers in international logistic system.

7.81 In order to make the existing codification system effective and quantitative, platform centric codification has been introduced. In future, the codification target of AHSPs would be set according to the contracts finalised in previous years.

7.82 Bilateral agreement for sharing of codification information with NCB Germany was signed by Director DoS on November 18, 2015. The Bilateral Agreement to share information from USA is at an advance stage of finalization.

7.83 **Efforts for "Make in India" Project:** As a member of Allied Committee/135 (AC/135), Directorate of Standardisation is actively involved in facilitating Indian Industry to participate in International Defence Procurement System.

DIRECTORATE OF PLANNING & COORDINATION

7.84 The Directorate of Planning & Coordination, established in 1964, is entrusted to promote Indigenization and realize objectives of 'Make in India' initiative in defence sector by rendering advice on Capital Acquisition proposals of SHQs from DDP's perspective ; proposing amendments in defence procurement procedure; formulating enabling policy/guidelines; encourage private sector participation and enhancing international cooperation between Indian & foreign companies. These activities are carried out in close liaison with Users and other stakeholders keeping in view the overall objective of substantive self-reliance in defence requirement.

DEFENCE EXHIBITION ORGANISATION (DEO)

7.85 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.

7.86 **India International Trade Fair (IITF):** The Defence Pavilion had been participating in IITF held every year in Pragati Maidan, New Delhi from November 14 to 27, 2015. In IITF, the Defence Pavilion has been awarded 8 Gold, 4 Silver, 3 Bronze and one Special Appreciation during the last 28 years.

7.87 The 10th edition of Aero India-2015 was organized from February 18-22, 2015. The edition's theme was on Make in India in Aerospace, Defence, Civil Aviation, Airport Infrastructure and Defence Engineering. 317 Indian Companies and 324 foreign companies had participated in the show.

7.88 **DEFEXPO INDIA:** Conceived as a complementary exposition to Aero India, Defexpo India was launched in 1999. 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.

7.89 **International Exhibitions Abroad:** With a view to provide an impetus to export potential to Indian Defence Industry; DEO organizes "India Pavilion" in major defence international exhibitions abroad to develop market for defence products being manufactured by them. During the current financial year 2015-2016, India participated in the LAAD Defence and Security Exhibition – 2015, International Maritime Defence Industry Exhibition (IMDEX) – 2015, Paris Air Show – 2015, Maks Air Show – 2015, Defence and Security International Exhibition (DSEI) – 2015, Seoul Air Show – 2015, Defence and Security – 2015.

NATIONAL INSTITUTE FOR RESEARCH AND DEVELOPMENT IN DEFENCE SHIPBUILDING (NIRDESH)

7.90 NIRDESH, the National Institute for R&D in Defence Ship building has been set up as an autonomous society of the Ministry of Defence, Department of Defence production, with the vision of achieving complete self reliance in warship and submarine building. An interim head office has been set up at Calicut. The immediate, short term and long term goals have been defined, and operations have commenced in training and R&D, to meet the requirements of member organizations. Activities of collaborative projects, consultancy, design and data archiving are also in the pipeline as per the defined immediate roles.

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8

DEFENCE RESEARCH AND DEVELOPMENT

Handing over of Advanced Torpedo Defence System 'Maareech' by Raksha Mantri

DRDO has emerged as one of the premier scientific and technological organisations in the country and has played a major role behind the development of the state-of-the-art platforms, sensors and weapon systems.

BACKGROUND

8.1 DRDO has emerged as one of the premier scientific and technological organisations in the country and has played a major role behind the development of the state-of-the-art platforms, sensors and weapon systems. At the core of its technological strength is its expertise in system design, system integration and testing & evaluation built over the last five decades. Due to our efforts, India is today, one of only five countries in the world to have a multi-level strategic deterrence capability and its own Ballistic Missile Defence (BMD) program, one of only six countries of the world to have developed a nuclear powered submarine, one of only few select countries to have developed its own Main Battle Tank (MBT), fourth generation combat aircraft, Electronic Warfare (EW) and multi range radar program.

8.2 DRDO's mission essentially covers the following broad activities:

- Design, develop and lead to production of state-of-the-art sensors, weapon systems, platforms and allied equipment for our Defence Services.
- Provide technological solutions to the Services to optimise combat effectiveness and to promote well-being of the troops.
- Develop infrastructure and committed quality manpower and build strong indigenous technology base.

ORGANISATIONAL STRUCTURE

8.3 DRDO was traditionally headed by Director General (DG) DRDO who additionally holds the post of Secretary, Department of Defence R&D (DD R&D) and Scientific Adviser to Raksha Mantri (SA to RM). However, in June 2015, DRDO was placed under Secretary DD R&D who is also the administrative head as DG DRDO. A separate post of SA to RM was created to offer independent advice.

8.4 DRDO labs are grouped into seven technology clusters namely, Armament and Combat Engineering Systems (ACE), Aeronautical Systems (AERO), Missiles and Strategic Systems (MSS), Naval Systems and Materials (NS&M), Electronics and Communication Systems (ECS), Micro Electronic Devices and Computational Systems (MED & CoS) and Life Sciences (LS). Each of these clusters function under cluster DGs. The seven DG offices are located at Pune (ACE), Bangalore (Aero and ECS), Hyderabad (MSS), Vishakhapatnam (NS&M) and Delhi (MED & CoS and LS). The labs under each cluster DG which had minor re-alignment of a few labs in 2015 is given in Table No. 8.1.

Table 8.1
Technology Domain Based Clusters with Constituent Laboratories

DG (Clusters)	
DG (ACE)	ARDE, CFEES, HEMRL, PXE CVRDE, DTRL, R&DE(E), VRDE
DG (AERO)	ADE, ADRDE, CABS, CEMILAC, GTRE
DG (MSS)	ASL, DRDL, ITR, RCI, TBRL
DG (NS & M)	NMRL, NPOL, NSTL DLJ, DMRL, DMSRDE
DG (ECS)	CHESS, DARE, DEAL, DLRL, IRDE, LASTEC, LRDE
DG (MED & CoS)	ANURAG, MTRDC, SSPL, SITAR SOCIETY (STAR-C & GAETEC) CAIR, JCB, SAG
DG (LS)	DEBEL, DFRL, DIBER, DIHAR, DIPAS, DIPR, DRDE, DRL(T), INMAS

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). During the year, Military Institute of Technology (MILIT) was transferred from DRDO to HQ IDS. 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 not just for DRDO but other organisations of Government of India as well. Additionally, Regional Centers for Military Airworthiness (RCsMA) under the purview 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, one joint venture viz. BrahMos Aerospace and one Deemed university viz. Defence Institute of Advance Technology (DIAT).

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)	
CCR&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
CCR&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)
CCR&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
CCR&D (TM)	Extramural Research and Intellectual Property Rights (ER&IPR), Futuristic Technology Management (FTM), Research Boards, Research Innovation Center (RIC)
CCR&D (SAM)	Institute for Systems Studies and Analyses (ISSA), Simulation and Modeling Centre (SAM-C)

MANPOWER

8.8 DRDO has a total strength of 25,148 employees, out of which 7,549 are in Defence Research and Development Services (DRDS), 9,528 in Defence Research and Technical Cadre (DRTC), 6,090 are in Admin & Allied Cadre and 1,981 in others category.

BUDGET

8.9 During the current financial year 2015-16, DDR&D has been allocated ` 14358.49 Crore which is about 5.8% of the total Defence Budget. A total of ` 7788.40 Crore has been allocated under Capital head and ` 6570.09 Crore under Revenue head.

PROGRAMMES AND PROJECTS

8.10 During the year, 58 new projects have been sanctioned at a total cost of ` 1,591.10 Crore, 35 projects have been administratively closed and technical activities of 47 projects were completed.

8.11 DRDO currently has 278 ongoing projects amounting to approximately ` 46,840.76 Crore (including User share). Out of 278 ongoing projects, 41 large projects (cost ≥ `100 Crore) have a cost of ` 40,479.22 Crore.

8.12 There are 9 major programmes approved by Cabinet Committee on Security (CCS) amounting to ` 31,962.50 Crore (DRDO's share: ` 18,985.13 Crore). About 40.6% of the total cost of CCS programme is funded by the User. Out of these, two CCS projects are related to design and development of missiles: Long Range Surface-to-Air Missiles (LRSAM) and Medium Range Surface-to-Air Missiles (MRSAM). The CCS projects in the field of aeronautics are: Light Combat Aircraft (LCA) Air Force Mk-I, LCA Air Force Mk-II, LCA Navy Mk-I, LCA Navy Mk-II, Airborne Early Warning and Control (AEW&C) System, Kaveri Engine. Airborne Warning and Control System (India) programme has been in-principle approved.

8.13 The year 2015 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, single seat, single engine, supersonic, light weight, all-weather, multi-role, air superiority fighter designed for air-to-air, air-to-ground and air-to-sea combat roles. Four Tejas aircrafts (TD1, TD2, PV1 and PV2) were built in Full Scale Engineering Development (FSED) Phase-I programme which was completed on March 31, 2004. FSED Phase-II programme was envisaged for fabrication of two prototype vehicles Tejas PV3 and PV4 and one two-seater trainer variant prototype vehicle Tejas PV5. Tejas production phase has been initiated. IAF has approved induction of Tejas into operational service with the first Tejas squadron with Initial Operational Clearance (IOC) configuration and the second squadron with Final Operational

Cold weather trials of LCA Tejas

Clearance (FOC). Establishment of production facilities at Hindustan Aeronautics Limited (HAL) for production rate of eight aircrafts per annum is in progress. The first production LCA aircraft (LCA-SP1) was handed over to IAF on January 17, 2015 by Raksha Mantri. The landmark achievement this year was the cold weather/high altitude outstation trials at Leh in January 2015. Hot weather trials for Tejas trainer (PV6) aircraft were conducted in Jaisalmer during June 2015 in which flutter trials in drop tanks configuration at varying altitudes were carried out. This cleared the aircraft for low level high speed sorties. As on December 2015, a total of 3031 flight tests on 13 Tejas aircrafts have been completed.

LCA Navy: LCA Navy is designed to operate from the deck of aircraft carriers and incorporates stronger landing gears to absorb forces exerted during the ski jump ramp during take-off. FSED Phase-I programme is envisaged for fabrication of two prototypes (NP1 and NP2). A number of flights have been completed on the first LCA Navy prototype, a two seat trainer (NP1) aircraft. The system integration of second LCA Navy prototype, a single seat fighter (NP2) aircraft has been completed. Maiden flight of LCA Navy Aircraft

(NP2) was done successfully on February 7, 2015. NP2 aircraft also successfully completed engine ground run with hot refueling drill on March 24, 2015 (*first Indian fighter aircraft to undertake this activity*).

Airborne Early Warning and Control (AEW&C) System: The role of Indian Airborne Early Warning and Control (AEW&C) system is to detect, identify and classify threats in the surveillance area and act as a command and control centre to support air defence operations and communicate with ground segment and other fighters. All the three fully modified Embraer EMB-145-I aircrafts have been received in India. Two of these aircrafts will be delivered to the IAF after completion of user associated development trials and the third system will be retained at CABS, DRDO to enable future upgrades to the system. As on date, 408 sorties have been flown on the two deliverable aircrafts. Performance of most indigenous mission systems has been validated. The aircraft has been cleared and certified for operation under icing conditions, air-to-air refueling and high altitude operation. The final phase of flight trials of the self-protection suite (SPS) is under progress. The aircraft was demonstrated (both on static and flight display) in the Aero India 2015 during February 2015. AEW&C participated in Akraman exercises as observer and the operators reported that, no loss of situational awareness was observed.

Medium Altitude Long Endurance UAV 'Rustom': Rustom-1 is a surveillance and recce UAV designed to operate up to 15,000 ft above mean sea level altitude (AMSL) with an endurance of 12 hours from take-off to landing. Maiden flight of R1-2 (i.e. second Rustom-I aircraft) was carried out on June 12, 2015. During the year, 15 flights of Rustom-1 were carried out. Rustom-II is being designed to operate up to 30,000 ft AMSL with an endurance of 24 hours from take-off to landing with synthetic aperture radar and long range electro-optic payloads. It is designed to perform intelligence, surveillance and reconnaissance missions for Indian Army, Indian Navy and IAF. Ground vibration tests (GVT) and structural coupling test Phase-1 (SCT-1) has been completed for AF3. System

AEW&C System

integration on AF3 has been completed. First developmental flight of Rustom-II is scheduled for mid-2016.

UAVs 'Nishant' and 'Panchi': 'Nishant' is a battlefield surveillance system launched using a mobile hydro pneumatic launcher and at the end of the mission the aerial vehicle is recovered using parachute. During the year, training and technical support for Army was provided for 10 flights in three campaigns. 'Panchi' offers all the capabilities of UAV 'Nishant' already inducted with enhanced endurance. The system also offers conventional take-off and landing capability. Five high speed taxi trials of 'Panchi' were carried out in June 2015. Two flight trials were conducted with GPA assembly and enhanced power supply in July 2015.

UAV 'Panchi'

Medium Size Aerostat Surveillance System 'Nakshatra': 'Nakshatra' is an integrated medium size aerostat surveillance system for surveillance, communications broadcasting, airborne early warning & detection of low flying aircrafts & missiles, monitoring air traffic control and enhancing the operational range of UAV's by providing communication relay, airborne and sea shore applications. The system has completed 14 hrs endurance testing at 1.0 km altitude. Demonstration of the system for 14 hrs endurance at 1 km altitude will be done at IAF base.

Heavy Drop System (HDS): A 16 ton capacity HDS consisting of a platform and a highly advanced system of parachutes to drop loads consisting of military stores such as vehicles (including BMP class), supplies and ammunition from IL-76 heavy lift aircraft has been designed developed and demonstrated. The system is an extension of technology developed by DRDO for 'P-7 HDS', the seven ton capacity HDS developed earlier and already accepted by Indian Army for induction. During this year, maiden high altitude HDS trial was successfully carried out in April 2015 at Leh which demonstrated a unique capability of dropping heavy payload in high altitude for the first time in India. Before this trial, DRDO successfully completed performance evaluation by conducting 5 User Assisted Technical Trials (UATTs) including one high altitude (HA) simulated trial at Rajasthan in February 2015.

'Agni' Missile Series: The maiden canisterised trial of India's first intercontinental ballistic missile (ICBM) Agni-5 was successfully carried out meeting all mission objectives for its full range from the Dr APJ Abdul Kalam Wheeler Island off the Odisha coast on January 31, 2015. Successful flight tests of Agni-4 on November 9, 2015, Agni-3 on April 16, 2015 and Agni-1 on November 27, 2015 were carried out from Dr APJ Abdul Kalam Island test range.

Canisterised A5 trial

Surface-to-Surface Missile 'Prithvi': Prithvi-II surface-to-surface missile which has a strike range up to 350 km was successfully test fired in February 2015 and November 2015 as part of User trials from Integrated Test Range (ITR) at Chandipur.

Ship Launched Ballistic Missile 'Dhanush': Ship launched ballistic missile 'Dhanush' having a strike range 350 km was successfully test fired in April 2015 and November 2015. Dhanush, a naval variant of Prithvi missile has already been inducted into the Armed Forces and is under production.

Surface-to-Air Missile 'Akash': The medium range (25 km) surface-to-air missile 'Akash' is a very potent supersonic mobile multi-directional multi-target point/area air defence system and can engage several air targets simultaneously using sophisticated multi-function phased array and surveillance radars in fully autonomous mode. Missiles and missile related equipments are produced by Bharat Dynamic Limited (BDL), Hyderabad. Radars and radar related equipments for both (IAF and Indian Army) orders are produced by Bharat Electronics Limited (BEL), Bengaluru. Indigenous development of the system has given impetus to the Defence industrial base in the country and generated business of more than ` 20,000 Crore 'Akash' weapon system has been dedicated to Indian Army on May 5, 2015 and to the Indian Air Force on July 10, 2015 by Raksha Mantri.

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

Akash Missile System

Navy. During the year, Factory Acceptance Test (FAT) of Weapon Control System (WCS) and Multi-Functional Surveillance Threat Alert Radar (MFSTAR) for 3rd ship has been completed. LRSAM was successfully flight tested from the Israel Naval platform against a jet powered drone for the first time on November 26, 2015. Two operational flight tests were conducted from the Indian Navy Ship 'INS Kolkata' on December 29-30, 2015.

Medium Range Surface-to-Air Missile (MRSAM): MRSAM having a range of 70 km is a joint development programme of DRDO, IAF and IAI, Israel. During the year, Radar Cooling Unit (LRCU) AT unit 103 was delivered in Israel and integrated with Long Range Detection and Tracking Radar (LBMFSTAR). Acceptance testing (AT) of Identification Friend or Foe (IFF - 3rd unit) was completed and the equipment was successfully integrated in Israel. The missile system is expected to be ready for flight trials in 2016.

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. 'Astra' was successfully launched from Su-30 fighter aircraft on March 18, 2015 at ITR Chandipur, Odisha to evaluate high manoeuvring capability against a simulated target. The second launch was undertaken on March 19, 2015 from Su-30 fighter aircraft against a pilot-less target aircraft (PTA) target. The performance of the missile systems have been validated during these two launches. Three air-launched guided flights were successfully tested from Su-30 MKI in May 2015, meeting all the mission requirements. 'Astra' has completed 8 air-launch trials from Su-30 MKI till date proving safe separation, control and guidance in full configuration.

Astra

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.

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. Some of the major achievements of the project include: wind tunnel testing for force and moment characterization of NGARM configuration, static firing of Pulse-I rocket motor for evaluation of motor performance at nominal sea level conditions and mechanical integration trials on Su-30 MKI aircraft using a geometric NGARM missile at IAF Station, Pune. Captive flight trials are planned for early 2016.

Man-Portable Anti-Tank Guided Missile (MPATGM): The project was sanctioned in January 2015 towards design and development of MPATGM system comprising of 3rd generation anti-tank guided missile with launch tube, and launcher with command launch unit. During the year, design configuration has been finalized and reviewed. Eight static tests of rocket motor were conducted to achieve consistent ballistic performance. Control flight tests are scheduled in first half of 2016.

Third Generation Helicopter Launch Anti-Tank Guided Missile 'Helina': Helina is a 3rd generation helicopter lauch anti-tank guided missile with 7 km lock-on-before-launch (LOBL) range capability with imaging infra-red (IIR) for integration on ALH-WSI. Programme 'Helina' had successfully established the safe separation from ALH and programmed control performance over full range during earlier flight campaigns. Flight test campaign of 'Helina' was conducted in July 2015 at Chandan, Rajasthan wherein three missiles were test fired from ALH-WSI. During the flight trials, the complete Helina weapon system performance was successfully proven.

3rd Generation Anti-Tank Guided Missile 'Nag' (PROSPINA): 'Nag' having an operation range of 4 Km 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'. HOT test of 'NAG' and functional testing of safety arming mechanism in flight configuration were completed in October 2015.

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. All sub-systems are in final stages of realisation/ testing. Aerodynamic studies and Phase I Wind tunnel testing has been completed. Trial was conducted at Rail Track Rocket Sled (RTRS) test facility, TBRL Ramgarh to evaluate the 'wing opening mechanism' of SAAW in September 2015.

Glide Bomb: DRDO has indigenously developed 1000 kg glide bombs. Non-winged version of guided bomb has a range of 30 km and winged version of this weapon has a 100 km range. Trials of both the bombs were

ASB Glide

conducted successfully during 2015. Both versions are now being integrated for carriage and drop trials.

Supersonic Cruise Missile 'BrahMos': BrahMos is a two-stage missile with a solid propellant booster engine as its first stage and liquid ramjet as the second stage. The missile has flight range of up to 290 km with supersonic speed all through the flight, leading to shorter flight time, consequently ensuring lower dispersion of targets, quicker engagement time and non-interception by any known weapon system in the world. The trial of 'BrahMos' was successfully carried out on February 14, 2015. It was also successfully test fired on November 1, 2015 for the first time from the Indian Navy's stealth destroyer INS Kochi. Two successive tests of an advanced version of 'BrahMos' supersonic land attack cruise missile (LACM) which has 'steep dive capabilities' to take out hidden targets behind mountain ranges were successfully conducted from a mobile autonomous launcher for its full range of 290 Kms on May 8 and 9, 2015. Another successful test of the LACM was conducted on November 7, 2015 against a designated target at Pokhran test range at Rajasthan.

BrahMos launch from INS Kochi

Sub-sonic Cruise Missile 'Nirbhay': Nirbhay is India's first indigenously designed and developed long range sub-sonic cruise missile having 1000 km range and capable of carrying up to 300 kg warheads. It is a two stage surface-to-surface missiles. The system incorporates the ring laser gyroscope based inertial navigation system (RINS-16) as primary navigation and MEMS based inertial navigation system (MINGS) as secondary navigation system. 'Nirbhay' ground launch-03 (NGL-03) was conducted on October 16, 2015. All critical operations viz. booster ignition, booster separation, wing deployment and engine start were successfully executed and the missile reached the desired altitude.

Advanced Towed Artillery Gun System (ATAGS): DRDO has taken up the task of design and development of 155 mm/52 Cal ATAGS having higher accuracy and consistency for Artillery of Indian Army. ATAGS sub-system hardware is under realization with different private industries as well as Ordnance Factories. Proof of first ATAGS gun barrel realized from Bharat Forge, Pune and muzzle brake realized from OFC, Kanpur was successfully conducted at CPE, Itarsi, Taku Range, during June 2015. The third Gun Barrel has been received from Bharat Forge, Pune. Factory Acceptance Test for first recoil system from Mahindra Naval Defence System has been completed. Integration of Fixed Firing Stand (FFS) is in progress.

New Family of Munitions: Six types of munitions are being designed and developed by DRDO viz. Nipun, Vibhav, Vishal, Parth, Prachand and Ulka to improve the existing munitions and enhance its performance. User Assisted Technical Trials (UATT) of *Soft Target Blast Munition* 'NIPUN' has been completed and the system has been offered for User trials. Lethality trials with new main body assembly and desert trials of *Anti-Tank Point Attack Munition* 'VIBHAV' have been carried out. Dynamic trials with BMP/ AFV, explosive train trials and desert trials of *Anti-Tank Bar Munition* 'VISHAL' have been conducted successfully. Moulding trials of *Jumping Fragmentation Munition* 'ULKA' is under progress. User demo trials of *Directional Fragmentation Module* 'PARTH' have been completed and field trials are in progress.

Multi Barrel Rocket Launcher System (MBRLS) 'Pinaka': MBRLS 'Pinaka' is an all weather, indirect fire, free flight artillery rocket system. Following induction of two regiments of Pinaka Mk-I with a range of 37 km into the Indian Army, DRDO has taken the design and development of Pinaka Mk-II rocket having an enhanced range of 60 km. The technical trials of MBRLS 'Pinaka' Mk-II were successfully conducted at PFFR during May 2015 for assessment of range performance, accuracy and consistency. Dynamic proof trials of Pinaka were conducted during October 2015.

Main Battle Tank (MBT) 'Arjun' Mk-II: MBT Arjun Mk-II has been designed and developed incorporating 84 improvements (73 tank fit-able) on MBT Arjun Mk-I. Out of these 19 (15 tank fit-able) have been identified as major improvements and some of these include, missile firing through main gun, increased ammunition penetration, incorporation of explosive reactive armour (ERA) panels, advance land navigation system (ALNS), automotive target tracking (ATT) Gunner's Main Sight, advanced running gear system (ARGS) etc. MBT Arjun Mk-II P1 tank trials for DRDO were also conducted during September 2015 at Pokhran Field Firing Ranges (PFFR) for the 19 improvements. Automotive trials of integrated automotive vetronics system (IAVS) integrated in MBT Arjun were successfully carried out for 330 km at Mahajan Field Firing Ranges (MFFR), Rajasthan during August 2015, and its performance was validated under harsh environmental conditions.

MBT Arjun

130 mm (SP) Catapult Gun System on MBT Arjun Chassis: DRDO is involved in design and development of catapult gun system by integrating the Russian 130 mm gun system on MBT Arjun chassis and automotive system. The system is designed to provide artillery guns, matching mobility with contemporary tanks in the battlefield. After the completion of the internal trials, Arjun Catapult vehicle was handed over for User trials on August 25, 2015.

130 mm SP Catapult Gun

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 GVV. It is powered with a high power diesel engine and is equipped with 8X8 driveline with independent suspension. Two technology demonstrator prototypes of WHAP are under development; one will be integrated with 30 mm turret system and second will be integrated with remote controlled weapon system (RCWS). During the year, ballistic and automotive trials have been carried out and 1st armour platform is under integration.

46m Military Load Class (MLC-70) Modular Bridge: 46m MLC-70 modular bridge is a single span, mechanically launched assault bridge of military load class 70, modular in construction used to negotiate the gaps up to 46 m. The complete system has been realized and the bridge superstructure, launching nose and bank seat beams (BSBs) have been tested successfully under simulated loads. First prototype has been realized after modification of required launch time of 90 minutes.

Land Based Prototype for Air Independent Propulsion (AIP) System: The project aims to package the AIP plant sub-systems, reactant tanks and waste tanks inside the simulated hull section of the P-75 submarine. The system has in-situ provisioning of hydrogen through hydrolysis of borohydride and oxygen through liquid oxygen. Pre-Production Floor Model (PPFM) has been tested and hull simulated model is under testing. Hydrogen generator, phosphoric acid fuel cell (PAFC) stacks for land based prototype and power conditioner system has been realized

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 an endurance of 25 km at low speed (25 knots) and 12 km at high speed (50 knots). The development of 60 kW and 105 kW BLDC motors are completed and the 120 kW battery is in the final stage of development. Warhead has been designed, developed and demonstrated. Post recovery checks on ALWT carrier for Balwanka firing are completed.

Heavy Weight Ship Launched Torpedo 'Varunastra': 'Varunastra' is a ship launched anti-submarine torpedo having low drift

'Varunastra'

navigational systems, acoustic homing, advanced acoustic counter-counter measure features, autonomous guidance algorithms, insensitive munitions warhead and GPS based recovery aid for practice torpedo.

NSTL and Indian Navy with joint efforts have conducted a total of 130 technical trials till date to evaluate the weapon in all aspects of its capabilities. A total of 14 User trials including trials in the months of January 2015 and March 2015 with different scenarios have also been completed. Final sentencing of Varunastra UETs meeting was held in September 2015. Varunastra has been accepted by IHQ MoD (Navy) for induction into Services with excellent success rate in UETs.

Advanced Torpedo Defence System 'Maareech': 'Maareech' is an advance torpedo defence system capable of detecting, tracking, seducing incoming modern and vintage torpedoes. It has a maximum towing speed of 32 knots and 10-24 knots tactical operating speed. User Evaluation Trials (UETs) were carried out in the months of February 2015 and April 2015 and with this all the UETs were successfully completed. The system was handed over to Indian Navy by Hon'ble Raksha Mantri on November 14, 2015.

Anti Torpedo Decoy Systems (MOHINI): DRDO is involved in the development of mobile decoy, rocket launched decoy, submarine fired decoy, integrated ship launcher for launching mobile decoy and rocket launched decoy and system evaluation software for escape tactics simulator studies. Sink rate measurement for submarine fired decoy and long jammer were conducted in sea waters on June 18, 2015.

Advance Light Towed Array Sonar (ALTAS): ALTAS is an efficient sensing system for detection, localization and classification of submarines operating especially in the below layer ocean conditions. Sheave positioning system installation has commenced onboard the trial ship. Technical trials of ALTAS were conducted onboard the trial ship in the months of January 2015 and February 2015. Five technical trials have been completed till date.

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 harbor mouths. The stations are established at Kochi and Balasore for 'Proof of Concept' demonstrations. During the year, integrated testing of Electro-Optic Systems (EOS) from local control station has been conducted. Second unit of coastal surveillance radar (CSR) for ICSS has been tested and cleared for integration.

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 evaluation of Nayan System (COMINT) was successfully carried out with Users during February 2015.

Internal Radar Warning Jammer (RWJ) System for Jaguar Darin III upgrade Aircraft (D-JAG System): Project DJAG, a state-of-art internal RWJ system for Jaguar DARIN III upgrade aircraft is under development by DRDO. First prototype of core EW unit (low power section) has been developed and is under system integration. Technical specifications of transmitters have been finalized and development is in progress. Aircraft modification is also in progress.

Internal EW System for MiG-29 Upgrade Aircraft (D-29 System): DRDO has taken up the development of the state-of-the-art Internal Electronic Warfare Suite (UEWS) with phase array based jamming capability. Ground acceptance testing and preparation towards flight evaluation of internal EW system D-29 on board upgraded MiG-29 aircraft was completed in July 2015 for commencement of flight trials. Limited flight trials on MiG-29 have been carried out.

Integrated EW System for Mountainous Terrain (Himshakti): Indian Army is in the process of procurement of integrated EW system for mountainous terrain (Himshakti) under the category 'Buy Indian (BEL) with DRDO Design'. Third phase of field evaluation and trials were conducted on 15 types of entities including narrow/ wide band communication, radar segment etc. during Novemer 2014. Technologies developed for Communication and Radar Segments to be deployed in mountainous terrain were demonstrated to Army during May 28 to June 14, 2015 in Ladakh area. Configuration of Himshakti with respect to number of vehicles has been concluded.

'Himshakti'

Medium Power Radar (MPR) 'Arudhra': MPR (Arudhra) is a 4D active aperture rotating multibeam multifunction phased array radar

MPR 'Arudhra'

with staring mode. It has an instrumented range of 400 km. It is also provided with a mode for detection and tracking of low RCS, high speed and highly maneuvering targets. All subsystems of primary and secondary radar have been independently integrated and tested. DRDO internal evaluation of Medium Power Radar 'Arudhra' system was completed with participation from User in month of October 2015. The system is ready to be offered for User trials.

Synthetic Aperture Radar (SAR): SAR with ground moving target indicator (GMTI) capability is an important 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, the first successful trials of SAR were carried out on Flying Test Bed (Dornier aircraft).

Commander's Non-panoramic Thermal Sight: Transfer of Technology (ToT) for production of Thermal Imaging (TI) based Commander Sights for combat vehicles to OFB and BEL has been cleared for Commander TI Mk II sights for T-72, Commander TI sights for T-90 and Commander TI sights for BMP-II. Summer firing trials by the User of the sights were completed during June 2015 for T-90, T-72 and BMP. User field trials to evaluate surveillance capability of the Commander's Non-panoramic Thermal Sight with LRF for T-90 were successfully completed at Pokharan Field Firing Range during September 8-11, 2015.

Software Defined Radio (SDR): Development of SDR is being pursued by DRDO in a consortium approach with CDAC and WESEE as development partners and BEL as the production partner. The project objectives include design and development of indigenous prototype SDR: SDR-Naval Combat, SDR-Tactical, SDR-Manpack, SDR-Airborne and SDR-Handheld supporting indigenous 9 waveforms and 4 legacy waveforms. First User Evaluation Trial (UET) was conducted successfully in month of April 2015. V/UHF non-MANET waveforms with ECCM capability and UHF MANET waveform in fixed frequency tested on SDR-Tactical was demonstrated to Navy in Jun 2015. SDR-Airborne radios with AM/FM waveform were handed over to BEL, Bangalore in Jul 2015 for detailed performance testing and CEMILAC certification. SDR-Manpack with improved performance and heat management was demonstrated to Army in August 2015.

Upgradation of Tropo Scatter Communication System: Troposcatter communication system communicates microwave radio signals over considerable distance. Trials of OFDM Tropo MODEM developed by DRDO on the IAF Tropo Link between Jodhpur and Jaisalmer were carried out in July 2015. Two prototypes of OFDM Tropo Modem were retained by IAF for long term testing. User associated trials of OFDM technology based modem for digital tropo links have been conducted successfully in September 2015.

Laser Target Projection System: Laser Target Projection System will be used for target illumination for training of pilots during night time bombing operations. Technology demonstration to IAF was done at weapons range (Halwara) in July 2015 meeting the preliminary requirements. The system was

also tested successfully through live bombing operation at the test range of IAF (Halwara).

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. Modules of kW class beam directing optical systems and LRF assisted auto focusing laser beam on to the target was established and tested up to the range of 0.8 km at CHESS, DRDO. The system was demonstrated to Users at RTRS facility at TBRL Ramgarh in September 2015.

Multi-Core based Network Processor (AVADHANI): The scope of the project includes development of multi-core based network processor (AVADHANI) targeted at intelligent networking, control plane applications. It will support application performance up to 10 Gbps and will have 8 cores optimized for networking applications and will have high speed networking I/Os along with advanced security and applications specific hardware accelerations to deliver high performance. Functional verification of AVADHANI RTL in RTL simulator environment has been completed. Evaluation of AVADHANI RTL on emulator platform is complete.

ANURAG Router (ANUROUTER): The objective of the project is to design and develop indigenous router using commercial multicore processor tile Gx16/36 and indigenous AVADHANI processor. Router system architecture design is complete and partner has been identified for hardware platform development.

Application Software and Security Solutions for Maritime Domain Awareness (MDA) and Maritime Operational Knowledge system (MOKS): Application software and security solutions for maritime situational awareness and arriving at common operational picture have been developed. This application software has been operationalised. The security solution for the communication, which is graded, has been transferred to production agency for production.

Technologies and Tools for Analysis of Cryptosystems (Sankalan): DRDO had taken a project to develop techniques to detect weaknesses due to domain specific features, inherent properties of the algorithm or improper usage of system and exploit them for cryptanalysis. The project has been successfully closed this year after completion of three independent modules: (i) Delivery of regional language toolkit for six Indian languages for automatically identifying and solving classical cryptosystems (ii) Delivery of a library for general cryptanalytical attacks/ tools on FPGA/cluster platform for modern day steam and block ciphers (iii) Delivery of tools for security analysis of cryptographic protocols

Qualification and Certification of DMR-249 Grade Steels: The main objective of the project is qualification and certification of DMR-249 grade steels – plates, bulb bars and weld consumables. DMR-249 grade steels (used in INS Vikrant) are being productionised through SAIL and other agencies (over 60,000 MT supplied to shipyards). During the year, DMR-249A steel plates of different thickness viz. 20mm,

40mm and 16mm have been supplied by SAIL. Welding, specimen making and testing is in progress at L&T.

Consultancy for AB3 Steel and Establishment of Indigenous Production: The scope of the project includes: Development & delivery of documents, development & delivery of adapted production flowsheets and consultancy during production & evaluation of experimental batch of products & for fabrication of welded joints. Various possible options for productions of plates were developed in consultation with Russian experts during the year 2014 and 2015. Work is in progress for development of overall technological instructions (OTIs) for manufacture of bulb bars. Detailed discussions were conducted towards development of draft OTI for production of AB3 grade steel plates and heavy forgings (weight >15T).

Bullet Proof Jacket: DRDO has taken a project in August 2015 for 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 7.62 AK47 (MSC and HSC), SLR, 9mm SMC ammunitions. A total of 150 BPJs will be provided for user trials. Special polymer has been identified as a potential shock absorbing material. Shock absorption configuration to avoid radial cracks developing during drop test (mechanical durability test) of front hard armour panel (FHAP) has been addressed. Fabrication of different parts of 12 numbers of medium size BPJ's is completed. Mould fabrication of front HAP for medium size jacket is under progress at France.

Indigenization of Microwave Chaff for Defence Application: The project aims at indigenous development of chaff cartridges to bridge technology gap in the area of chaff technology. During the year, 25 nos. of chaff cartridges have been assembled for LQT and assembly of prototype chaff blooming facility has been completed.

NBC Defence Technology: The Programme on NBC Defence Technology (NAZAR) was completed on March 16, 2015. Significant outcome of the projects were the development of Ion Mobility Spectrometry (IMS) based chemical agent detector, NBC individual protective equipment (including NBC suit Mk-V, mask, gloves and overboot Mk-II, NBC inflatable shelter, H1N1 kit (Swine Flu), Multipurpose decontamination system, NBC unmanned ground vehicle and other products such as NBC mobile shelter, personal decontamination kit, personal decontamination apparatus, NBC first aid kit type A and type B, NBC food packaging etc.

Computerized Pilot Selection System for IAF: The project aimed to develop hardware and software for CPSS consisting of psychomotor and cognitive testing system and to develop software for cognitive tests. CPSS has been

CPSS

delivered, accepted and in use at three sites of Air Force Selection Boards at Mysore, Dehradun and Varanasi.

Telemedicine System: The portable telemedicine system is a rugged biomedical data acquisition and transmission system aimed at the health monitoring and management of Armed Forces personnel especially from forward areas to military hospitals and from ship-to-shore. The system consist of hardware and software to acquire process, store and transmit vital parameters of patients on various communication modalities in real time including video conferencing. Implementation of the project on pilot mode was successfully completed for Indian Army and Navy. The system has been accepted by Indian Navy for installation across Naval Platforms.

Flame Retardant Anti-G Suit: Flame retardant Anti-G Suit (FRAGS) MK-VI (PU) has been designed and developed to raise pilots' parafoveal vision, grey out, black out threshold levels by + 1G to 1.5G during flying in high performance aircraft. The development is an improvement over the FR Anti Suit and has been granted approval by RCMA for introduction into HAWK AJT. Production orders have been placed by IAF.

Defender Net (Long Lasting Insecticidal Net): DRDO has successfully developed Long Lasting Insecticidal Net and introduced it in Army and it also intends to introduce in National Public Health Program of the country under the control of National Vector-Borne Disease Control Programme (NBVDCP), Delhi.

Seabuckthorn-based technologies: Raksha Mantri visited DIHAR, a DRDO laboratory on August 23, 2015. Five seabuckthorn-based technologies were transferred to Patanjali Ayurved Ltd. during the visit.

8.14 NATIONAL INFRASTRUCTURE ASSETS

Universal Pilot Plant (UPP): UPP is a state-of-the-art environment friendly chemical pilot plant used for the development of advanced high energy materials required for various armaments and missile systems. Raksha Mantri inaugurated the UPP at HEMRL, a DRDO laboratory on November 19, 2015.

High Altitude Test Laboratory: On July 12, 2015, Prime Minister inaugurated Extreme High Altitude Test Laboratory Phase 2 of the Kyrgyz-Indian Mountain Biomedical Research Centre (KIMBMRC) at Syok Pass at an altitude of 4020 m. KIMBMRC Project was sanctioned in August 2008 by the Ministry of Defence, India, with an objective to study the biological responses during the process of acclimatization in two ethnic groups (India and Kyrgyzstan population). DIPAS, a DRDO laboratory has established the KIMBMRC at Bishek and Field Laboratory at Tuya Ashu (3200 m) in Kyrgyz Republic as a collaborative project between India and Kyrgyzstan.

Extreme Altitude Research Centre (EARC): Secretary Defence R&D and DG DRDO inaugurated an Extreme Altitude Research Centre (EARC) at Chang La, 75 km off Leh towards Pangong Lake in Jammu & Kashmir at 17,600 ft above mean sea level, the world's highest terrestrial R&D centre. R&D activities which are proposed to be undertaken at this centre include human

physiological work, long term conservation of plant genetic resources, designing, testing, validation and demonstration of mobile & portable greenhouses, soil-less micro farming technologies for fresh food in remote land-locked posts besides conservation and propagation of endangered extreme altitude medicinal plants.

Open Range Test Facility (ORANGE): Raksha Mantri inaugurated ORANGE, an outdoor Radar Cross Section (RCS) test facility at Dundigal, Hyderabad on October 15, 2015. The facility will enable India in designing new weapon systems with extremely low cross section as well for carrying out vulnerability studies on existing platforms.

Missile mounted on a python

INS VAJRAKOSH: The naval missile base INS Vajrakosh at Karwar was commissioned by Raksha Mantri on September 9, 2015.

Seakeeping and Maneuvering Basin (SMB): SMB is a world-class facility for comprehensive hydrodynamic model testing. The facility will be used to generate complete operational envelope of ships, submarines and underwater weapons. Validation trials on measuring equipment and dynamometry and computerised multi motion carriage (CMMS) of SMB were completed in the month of June 2015. Bi-filar arrangement required for determination of moment of inertia of standard model has been commissioned. The inauguration and dedication of SMB to the Nation by Raksha Mantri was held on November 14, 2015. SMB can be utilized by the Indian R&D establishments and academia for R&D work as well as shipyards for their design validations.

'SMB'

Commissioning of INS Astradharini: A new Torpedo Launch and Recovery Vessel (TLRV) INS 'Astradharini', developed by DRDO has been commissioned by FO-C-in-C (East) on October 6, 2015. It is a 50 m Catamaran (twin hulls) vessel with a max speed of 15 Knots, designed and built indigenously in the country. The hull form for the same was developed and optimized through extensive model tests at NSTL, DRDO. The vessel would

be operated by Eastern Naval Command (ENC) Visakhapatnam and will be used to carry out the trials of underwater weapons and systems.

'Astradharini'

8.15 CORPORATE INITIATIVES

Tribute to Dr APJ Abdul Kalam: On October 15, 2015, Prime Minister unveiled the statue of former President, Dr APJ Abdul Kalam at DRDO Bhawan, DRDO HQ in New Delhi and opened a photo-exhibition 'A Celebration of Dr Kalam's Life'. On the occasion, PM also released a book, a compilation of tributes by scientists who have worked with Dr Kalam and released a commemorative postage stamp in his memory. Raksha Mantri renamed the Missile Complex at Hyderabad as Dr APJ Abdul Kalam Missile Complex, on the same day.

Young Scientist Centers: Seven empowered 'Young Scientist Centers' have been created. Work on the following areas have been initiated: guidance kits for rockets/multi barrel rockets, lighter than air and maneuverable airborne platform for surveillance and reconnaissance, survival strategies in difficult terrains, state-of-the-art advance avionics technology viz. MEMS, biosensors, RF MEMS, Li ion battery etc., adaptive sensing technology and briefcase sonar.

Services Interaction: The mechanism for structured interaction initiated some time back is being strengthened and interactions with Services at various levels is taking place at regular intervals including joint reviews by Vice Chiefs. A feedback mechanism through visit of DRDO Scientists to User bases has been initiated.

During the year, DAC approvals has been accorded for six BrahMos systems and 89 missiles for Delhi and Talwar Class ships; Telemedicine for Indian Navy; additional 7 squadrons (14 firing units) of indigenous Akash Missile System for IAF; design and development of trawl equipment by DRDO for T-72/ T-90 tanks and Samyukta Obsolescence Management for Indian Army.

Industry Interface: The 'DRDO Guidelines for Transfer of Technology' and the 'Compendium of DRDO Developed Defence Products with Export Potential' were released by Hon'ble Raksha Mantri on September 23, 2015. In the current year, 75 licensing agreements for ToT to 57 industries were facilitated. Under the Accelerated Technology & Commercialization (ATAC) Programme, Explosive Detection Kit Technology, developed by DRDO which was transferred to M/s Crowe & Co., USA has been evaluated by US Armed Forces and is in the process of being inducted into Nigerian Armed Forces also. 81 NOCs for export have been granted by MoD for 198 products for about ` 11,429 Crore, out of which, 60 products of worth ` 7,210 Crore are based on technology developed by DRDO.

National and International Exhibitions: DRDO participated in Aero India 2015 at Bangalore and Latin America Aerospace & Defence (LAAD-2015) at Brazil wherein products and technologies in the field of missiles, AEW&C, IFF, sonars, torpedoes, radars etc. were showcased. DRDO, along with its production partners (BEL and L&T) displayed India's strength and expertise in design, development and production at Seoul International Aerospace & Defence Exhibition (ADEX-2015) at South Korea. DRDO also participated in Global R&D Summit - Destination India in association with Department of Science & Technology (DST) at New Delhi to showcase its technologies which have been identified under ATAC programme for commercialization.

International Co-operation: This year DRDO held its bilateral defence R&D meetings with Russia, USA, UK and Singapore. A Statement of Intent was signed with DRDC, Canada in January 2015. The RDT&E agreement with US, DoD was extended for a period of another 15 years (up to January 2031). DRDO-US workshops on 'Advanced Materials and Munitions Armament Technologies' were conducted in 2015. New initiatives have been taken with Australia, Spain, Canada, Egypt and South Africa for exploring R&D technology co-operation.

Extramural Research (ER): During the current year 43 new projects costing about ` 21.3 Crore has been sanctioned and 217 proposals are under process. There are 332 ongoing projects costing over ` 294 Crore There are 8 ongoing Memoranda of Collaboration (MoC) with IISc, JNCASR, AMRITA Vishwa Vidyapeetam and NIAS on important research programme of interest to DRDO. A MoC in the area of silicon photonic based optical interconnects for advanced high performance computing was signed this year. Additionally, 208 international and national conferences of repute have been supported.

Intellectual Property Rights (IPR): 124 IPR applications (including 4 in foreign countries) were processed for filing on products/process covering the fields of armaments, electronics, instrumentation, materials, biomedical sciences, food technology etc. 34 patents (including 9 in foreign countries) were granted during the year. In addition, 9 designs were registered in India. DRDO has been awarded the prestigious National Intellectual Property Award 2015 in the category 'Top R&D Organisations for Patents'.

Awards: Former Chief Controllers of DRDO Dr N Prabhakar and Dr Prahlada together with Shri Vasant Shastri, Sc 'G' were conferred Padma Shri by the Government of India.

8.16 **Implementation of Government initiatives:** Annual and five year action plans for 'Swachh Bharat' to be implemented in the organization has been prepared and the activities are being pursued as per the plan. A few indicative activities undertaken are: cleaning of the lab and residential area, weeding out of documents/store, special talks, awareness camps, competitions, cleanliness of cooking facilities and tree plantations. International Yoga Day was celebrated across all labs. Parallel to Swachh Bharat, 'Swasth Bharat' and promotion of yoga is being pursued due to its inter-linkage. Giving an impetus to the mission of 'Make in India' initiated by the Government, workshops on the theme are

being organized by DRDO laboratories. Steps have been taken for 'Minimum Government, Maximum Governance', Digital India and e-Governance in an integrated manner. A number of initiatives for process improvement to make DRDO more aligned towards e-governance have been taken including e-procurement, online processing and tracking of files. PLM and ERP are being introduced in more labs and clusters progressively.

8.17 DRDO is steadfast in its journey towards achieving self-sufficiency in Defence requirement. With its commitment to fulfill the requirement of advanced weapon systems and platforms for Armed Forces supported with contemporary technology, this was a year of successful trials, inductions/ acceptance and successful project closures. With its limited workforce, the organization delivered in all the clusters with a gamut of technology/products being handed over by Raksha Mantri himself – LCA SP1, 'Akash' Missile System, Torpedo Decoy 'Maareech', Seakeeping & Manoeuvering Basin, Universal Pilot Plant for high energy materials, RCS test facility 'Orange', INS Vajrakosh, High Altitude Lab and ToT of Seabuckthorn based technologies. The current value of DRDO developed systems inducted or cleared for induction stands at ` 1.9 lakh Crore. With the directives from the Government, the organization has also started catering to the requirements of low intensity conflicts, national disaster management and other requirements of central paramilitary forces. DRDO stands committed to ensuring the development of cutting edge systems and technologies for Indian Armed Forces.

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9

INTER SERVICE ORGANISATIONS

National Defence College - A premier training institution of the Ministry of Defence

Inter-Service Organisations are responsible for carrying out the tasks related to the common needs of the three services.

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 aboard for friendly foreign Governments. The MES organisation comprising proficient personnel are deployed across the country at remote locations in all types of terrain and inhospitable climatic conditions and provide works services support during peace time and also equipped to provide dedicated support during war.

9.4 Important Projects under Progress:

(a) **Modernisation of Central Ordnance Depot (COD) Agra and Jabalpur:** As part of overall "Modernisation Drive", Army Ordnance Depot are being upgraded with Modernized Engineered Building. The Phase-I works are nearing completion and Phase-II works are commencing.

(b) **High Altitude Area (HAA) Habitat:** A pilot project phase-I and Phase-II for

improvement of Habitat in High Altitude Area has been successfully completed. Phase-III works at 12 platoon locations is under progress.

(c) In addition, projects on 'Infrastructure Development in Eastern Command', National War Memorial and Museum, Modernisation of Air Force Infrastructure and Modernisation of Indian Navy and Coast Guard are also under progress.

(d) **Important Projects completed:**

(i) Flight Safety Briefing Centre at Delhi.

(ii) Administrative Building for Provost Unit.

(iii) OTM Accommodation at 58 GTC at Happy Valley, Shillong.

(iv) Works Services Phase-II for a Military Station.

(v) Auditorium at ARC Shillong.

(vi) Construction of Permanent Accommodation for living in Airmen and DSC personnel at Misamari.

vii) OTM Accommodation for Engineer Regiment (Phase-I)at Bhatinda.

(viii) Ammunition Shed at Bikaner.

(ix) OTM Accommodation for Headquarter Mountain Division (Phase-I).

(x) OTM Accommodation EME Battalion.

9.5 Major Activities:

(a) **CE Leh Zone:** A new zone namely CE Leh zone was raised under CE Northern Command during the year within the existing establishment of MES. The following new MES establishments have also been raised during the year.

S.No	Formation	Under
CWE		
(i)	CWE Chakeri	CE (AF) Nagpur
GE/ GE(I)/GE(P)/GE(I)(P)/GE CTL/PM		
(i)	GE (P) (Army) No-2 Jaisalmer	CWE Jaisalmer
(ii)	GE (I) Campbell Bay	CE (A&N)
(iii)	GE (I) (P) (C) Port Blair	CE (A&N)
(iv)	GE CTL Port Blair	CE Southern Command
(v)	PM Baisakhi	CCE (A) No 2
(vi)	GE CTL Vizag	CE Eastern Command
(vii)	GE CTL Jorhat	CE Eastern Command
(viii)	GE (AF) Bihta (Upgradation)	CWE (AF) Bamrauli
(ix)	GE CTL Leh	CE Northern Command
(x)	GE (I) (P) Niwaru	CE Jaipur Zone
(xi)	GE (I) (P) (AF) Jamnagar	CE (AF) Gandhinagar
(xii)	GE (I) (R&D) Delhi	CE (R&D) Delhi
AGE (I)		
(i)	AGE (I) MC EME Secunderabad (Upgradation)	CWE Secunderabad

(b) **Command Test Laboratory:** In addition to the exiting eight command test Laboratories, four new Command Test Laboratories have been raised at Port Blair, Zorhat, Vizag and Leh.

9.6 Major Initiatives:

(a) **Advice for Runway repair/Maintenance of payments:** A comprehensive methodology has been worked out to render sound and cogent advice on runway related issues.

(b) **e-Tendering:** An e-Tendering portal has been created on NIC server for more transparency into the tendering process and improve the overall efficiency of the organisation. This has now been fully implemented.

(c) **Renewable Energy (LED Lighting):** In accordance with PMs initiative for 'Bijli Bachao Desh Banao', a case for authorisation of LED lights in Defence Services was initiated on February 26, 2015 was initiated and clubbed with short term revision of scales of accommodation which has been approved by the Government. LED lights are now authorized for all types of accommodation and street lighting.

(d) **GRIHA Green Building Norms:** Green Building Norms have been approved as part of short term amendment to scales of accommodation – 2009.

(e) **Pre-paid Meters in Defence:** To mitigate the deficiency of meter readers, two stations at Agra & Ranikhet have been selected for installation of pre-paid electric meters. Accordingly, works have been listed in AMWP (2015-16).

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 through 130 Armed Forces Hospitals. 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 Directorate General, Armed Forces Medical Services (DGAFMS) and one Director General Medical Service (DGMS) each for the Indian Army, Indian Air Force and Indian Navy 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 includes officers of the Army Medical Corps (AMC), AMC (Non-Tech), the Army Dental Corps (ADC) and the Military Nursing Services (MNS). The authorized strength of AMC, ADC, MNS and AMC (NT) is 6104, 666, 4600 and 363 respectively.

9.9 Important decisions/ activities undertaken during the year:

(I) Augmentation of manpower in AFMS: The Government approved augmenting the manpower of AFMS by 10,590 in three equal phases of 3530 each. Phase-I of additional authorisation of manpower to AFMS which comprised of 432 Medical Of-

ficers, 684 MNS officers, 2347 Personnel Below Officers Rank and 67 Civilians was sanctioned in May, 2009 which was to be completed within 3 years. Induction of additional manpower authorised in Phase-I was completed except for the civilian manpower component. Phase-II of additional authorisation of manpower to AFMS was sanctioned in February, 2012, to be completed within a period of 3 years. This augmentation is almost complete. However, the recruitment of additional civilian manpower is in progress. Case for accretion of manpower for Phase III is under process.

(II) Commission in AFMS

(a) **Short Service Commission (SSC) from civil sources:** 413 doctors from civil sources including 128 women were granted SSC in 2015.

(b) **Commission of Armed Forces Medical College (AFMC) cadets:** 100 cadets from AFMC have been granted commission during the year 2015 as under:

(i) Permanent Commission (PC) - 47

(ii) SSC - 53

(c) **Grant of Departmental Permanent Commission (DPC) to SSC officers:** 20 Short Service Commission officers have been granted DPC in 2015 (Male 15 and Female 5)**.**

(d) **Grant of DPC to AMC(NT):** 5 SSC officers of AMC (NT) have been granted DPC during the year 2015.

(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 2015.

(III) Appointment of Honorary Consultant/ Advisor: To ensure holistic care to Armed Forces, eminent civilian doctors in different specialties are appointed as honorary consultants at various locations based upon service requirement, expertise of the consultant and their willingness to provide service free of cost.

(IV) HIV-AIDS in Armed Force: The AFMS AIDS Control Organisation (ACO) is the nodal agency for HIV/AIDS Control in the Armed Forces. The organisation has achieved remarkable success on HIV control in the Armed Forces. Vigorous implementation of preventive strategies has resulted in a declining trend in HIV Positive cases, which suggests that the epidemic may be stabilizing.

(V) 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 in 2015 was conducted centrally through the All India basis test and a total of 35,977 candidates applied online for admission to AFMC, Pune for the year. The application process for the same was made completely online. Based on their merit, 1975 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 2015. In addition 5 sponsored candidates were also admitted from friendly foreign countries.

(VI) 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 ` 102 Crore were procured in the financial year 2014-15 and supply order for more than ` 110 Crore have been placed on the current financial year i.e. 2015-16 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) **Project Telelink:** To address occurrence of sickness/ injury of personnel on board ships etc, a project to telelink ships to mainland tertiary care Naval hospitals has been approved by Defence Acquisition Council (DAC). On completion of the project, opinion and expertise of naval super specialists/ specialists of tertiary care land based hospitals will be gainfully utilized on board ships/ submarines/ hospitals located in remote locations.

(c) **Automation of Armed Forces Medical Stores Depot (AFMSD) and Supply Chain Management:** This project named as "iAushadhi" is a web based system which tracks the supply and usage of medicines online. This will help in reducing the lead period significantly and will provide real time information on stocks of drugs and help in timely procurement at local level. This application will be hosted shortly for use in the Armed Forces hospitals.

(d) **Cardio Thoracic Vascular Surgery (CTVS) Centre Army Hospital R&R Delhi:** A 200 bedded CTVS Centre has become functional, as a super-speciality wing of Army Hospital (R&R). Till date, 2000 invasive Cardiac procedures and 541 CTVS surgeries have been done.

(e) **Centre of Excellence:** Rajiv Gandhi University of Health Sciences has declared Institute of Aero Medicine (IAM) as a 'Centre of Excellence' based on the academic excellence achieved by its faculty and its infrastructure.

(f) **Medical care to Specially abled children:** To enhance the level of care provided to specially abled children, a Centre of Excellence, consisting of multidisciplinary professionals, has been established at Department of Pediatrics, Command Hospital (Air Force), Bangalore.

VII Other Measures

(a) 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).

(b) 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. Medical stores have been categorized into 29 Priced Vocabulary Medical Store (PVMS) Sections for convenience of provisioning, procurement, stocking and issue of medical stores to all AFMS Hospitals/ Units.

(c) 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 exquisite planning and streamlined execution by following the principles of financial propriety, probity and prudence.

(VIII) Foreign Aid provided to friendly countries: Medical stores amounting `10.74 Crore have been made available to friendly foreign nations (Tajikistan, Malawai, Yemen, Commonwealth of Dominica and Seychelles) and for Haj.

(IX) Modernisation/ upgradation of hospitals:

(i) **Annual Major Works Programme 2015-16:** Twenty works for various hospitals costing ` 259 Crore have been approved for listing under AMWP. This include provisioning of new technology accommodation for 200 bedded Oncology Centre at Army Hospital (Research & Referral).

(ii) **Hospital Project Series No - 3:** A comprehensive document elucidating on various aspects of Fire safety in Military Hospitals has been published. The document gives details of various Fire Safety Measures as mandated by various regulations, building codes, army instructions. The documents have also incorporated various operational aspects and check lists which can be suitably adopted by commanders at all levels for ensuring Fire Safety in their hospitals.

(X) Research Activities: Approval was accorded to carry out 100 research projects during 53rd Armed Forces Medical Research Committee (AFMRC) meeting held at Pune in February, 2015.

(XI) 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.

(XII) Raksha Mantri Trophy for Best Command Hospital: Command Hospital (Eastern Command), Kolkata, bagged the coveted 'Raksha Mantri Trophy' for the "Best command Hospital in the Armed Forces" for the year 2015.

(XIII) Training to Foreign Nationals in Medical/ Dental Courses: Training was provided to 154 Foreign Nationals of friendly foreign countries by AFMS in its training Institutions/ Hospitals based upon the requests received from these countries.

(XIV) Disaster Relief:

(a) **Operation Maitri:** A catastrophic earthquake of 7.8 magnitude stuck Nepal on April 25, 2015. Under the HADR Operation 'Op Maitri', relief medical

team from Army & Air force participated in relief operations and provided medical relief in affected areas.

(b) **Flood Relief, Chennai:** A devastating flood affected entire Southern coastal region of the country, especially parts of Chennai in Tamilnadu in December 2015. AFMS Officers participated in flood relief operations and provided medical relief in flood affected areas.

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. 14.14 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 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 J&K 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. Elections to 61 Cantonment Boards were held during 2015 in which 404 members were elected wherein one-third elected members are women. Boards were

accordingly constituted in 60 Cantonments Electronic Voting Machines (EVMs) provided by the Election Commission of India were used for the first time in some Cantonments. The varied term of Pachmarhi Cantonment was further extended for a period of one year upto June 5, 2016 as the matter was subjudice. Election to Khasyol Cantonment Board was not held and its varied term was further extended upto June 5, 2016

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. The Central Government provides financial assistance by way of grants- in-aid to balance the budget of some of the Cantonment Boards which are financially deficit.

9.16 To provide primary education, Cantonment Boards run primary Schools. A number of Cantonment Boards are also maintaining Higher Secondary Schools and Intermediate/ Junior Colleges. The total number of schools and colleges maintained by Cantonment Boards is 201, besides 33 centres for differently abled children and 45 vocational training centres. Cantonment Boards also maintain 88 Hospitals for providing various services to the general public of Cantonments and nearby areas.

9.17 Defence Estate Department has carried out Land Audit reports for the year 2013-14 in 17 DEO circles. Main findings and recommendation are given in **Appendix-V** to this Annual Report.

9.18 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. Out of which, 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

9.19 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 (Training) and Director (Security).

9.20 The functions of the CAO's Office are carried out by the following seven Divisions:

(a) **Administration Division:** This Division provides administrative cover to about 12,000 civilian personnel employed in the Service Headquarters and Inter-Service Organisations.

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

(c) **Manpower Planning and Recruitment Division:** This Division is responsible for recruitment to various categories of the Armed Forces head quarters (AFHQ) Cadre/ Ex-Cadre posts, compassionate employment, 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 & work related to Pay Commissions etc.

(d) **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.

(e) **Estate and Works Division:** This Division performs the Estate functions for residential accommodation of Service Officers posted at the Armed Forces HQs and coordinates the Major Works Programmes at the Defence Headquarters.

(f) **Departmental Discipline, Coordination and Welfare Division:** This Division deals with disciplinary cases of AFHQ Civilian employees. Besides, coordination within CAO's Office and for JS (Training) & CAO Wing of MoD, 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. Matters relating to implementation of e-governance, electronic data processing and maintenance of LAN & website of CAO's office also come under the purview of this Division. Administration of MoD (Library) alongwith the functions/ responsibility pertaining to selection of books and securing National Defence Fund (NDF) grant for procurement of the same as well as laying down of guidelines for this purpose have also been entrusted to this Division.

(g) **Defence Headquarters Training Institute (DHTI):** Training requirements of civilian personnel posted in the Services Headquarters and in the Inter-Service Organisations as well as MoD Section Officers are looked after by the Defence HQ Training Institute (DHTI), functioning under the aegis of the Office of JS (Trg) & CAO. Some specialized courses relating to Procurement, RTI, Cabinet Note, Parliament Procedure are also conducted for the Service officers from the three Services Headquarters and ISOs. During the year 2015-16, 139 courses have been/ are to be conducted

by DHTI covering both Civilian & Services Personnel at its premises and additional 19 courses at various field establishments in the domain area of "Civilian Personnel Management."

9.21 Security Office:

(a) The Security Office is responsible for physical security, surveillance and access control and prevention of breaches of security and fire within the Defence Headquarters Security Zone comprising of 22 buildings. The Chief Security Officer has the following primary responsibilities, namely:

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

(ii) The Security Office looks after the policy administrative aspects including issue of identity 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 to the Zone by way of issuing them visitor passes and by providing civilian escorts to the visitors, as and when necessary.

(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 RFID system, respectively.

(c) The Security Office issues approximately 75,000 passes in a year including SLIC, DAC, TP, CHT passes, vehicle stickers etc.

DIRECTORATE OF PUBLIC RELATIONS

9.22 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.

9.23 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 a digitisation process.

9.24 As in previous years, the Directorate conducted the Defence Correspondents' Course for media persons from August 16, 2015 to September 18, 2015 to enhance their knowledge about defence matters. Thirty one journalists including seven women drawn from all over the country attended the month long course.

9.25 During the year, DPR provided coverage to the launching of various Army digitisation initiatives such as Army Record Officers Process Automation (ARPAN) 2.0, a new website www.joinindianarmy.nic.in, the Indian Army's private cloud which marks the commencement of the data centre infrastructure of the Army and Digi-Locker which provides a secure and exclusive data storage space to all units and users of the Army over its dedicated data network. The Directorate provided befitting publicity to the induction of the Akash Missile System in both the Air Force and Army, induction of eight Boeing P-8I long-range maritime reconnaissance and anti-submarine warfare aircraft into the Navy and the commissioning of INS Kochi, the stealth guided missile destroyer. DPR also secured excellent coverage on the LCA Tejas creating history by participating and flying in the Bahrain International Air Show.

9.26 DPR also provided excellent publicity to the evacuation of Indian nationals from strife-torn Yemen by the Indian Navy and Indian Air Force under 'Op Rahat' and the biggest ever joint rescue and relief operation abroad by the Indian Armed Forces 'Op Maitri', during the Nepal earthquake. The rescue and relief operation 'Op Madad' during the unprecedented floods in Chennai was also given wide publicity. A befitting coverage was given to the Golden Jubilee Celebrations of 1965 Indo-Pak War and the Centenary Celebrations of the First World War.

9.27 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 approval to induct women into the fighter stream of the Indian Air Force and announcement of One Rank One Pension (OROP) Scheme for the Armed Forces personnel paving the way for removal of anomalies in pensions of Ex-Servicemen.

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

SERVICES SPORTS CONTROL BOARD

9.29 Services Sports Control Board (SSCB) conducts and co-ordinates various sports activities in the three Defence Services. Inter-Services championships comprising of four teams (Army Red, Army Green, Indian 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 Championship/ Games/ Military World Championships.

9.30 During the year 2015 the SSCB fielded Senior Men's teams in the National championships conducted by Sports Federations/ Associations which are recognised by Ministry of Youth Affairs and Sports. Services team won the National Championships in many events. During the year more than 100 Services sportsmen represented India in various International Championships.

9.31 During the 35th National Games held in Kerala in February 2015 the SSCB's men's team created history by toping the medal tally and winning 91 Gold, 33 Silver and 35 Bronze medals. For a third time in succession, the SSCB won the prestigious Raja Bhalendra Singh Overall Championship Trophy-2015.

ARMED FORCES FILM & PHOTO DIVISION

9.32 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.

9.33 In the current year AFFPD has completed and released ten training films for the Army in association with ARTRAC(Army Training Command), 9 training films are under various stages of production, of which 4 have been completed as on date and are awaiting sponsor approval, out of 5 films which are in post production stage, 4 are in final stages of completion and 1 films is at rough cut stage of production. In addition to these, a promotional film on Mahajan Filed Firing Range for the Army has been completed, another 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 are also under production out of which one has been completed. The duration of most of the films produced by AFFPD are 30 to 60 minutes and are in Hindi and English. Currently, 11 Training films for the army are in financial sanction stage, on conclusion of which production of these films will be taken up. AFFPD is also producing Promotional clips for the Navy's International fleet review to the held in 2016.

9.34 The Division has done 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, Directorate of Standardization, Planning & Coord, CAO's office, DGQA Day, and AFHQ Day were also done.

9.35 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. 7596 photographs have been exposed and

122 Photo CDs, 13 Photo DVDs and 2672 photographic prints have been prepared and issued till date.

9.36 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 35mm sizes, 1165 titles in 16 mm sizes, 225 titles in VHS format, 272 titles in U-matic format, 166Betacam format, 34 titles in VCD format and 72 titles in DVD & HD format. During the year 2015, 2939DVDs have been dispatched/ issued on loan to various units/ formations of Army/ Navy/ Air Force.

9.37 AFFPD has a rich collection of rare films and photographs of the II World War, this material inherited from the British are of great historical value and are 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 etc are some of the film preserved along with many other historical films.

9.38 The Mobile Cinema Unit (MCU) of this Division also procured/distributed Documentary films/News Magazines on cultural, family welfare, and other socially relevant issues, to the troops. During the year MCU has issued films on 331 topics to various Defence Establishments on loan basis.

NATIONAL DEFENCE COLLEGE

9.39 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.

9.40 The 55th NDC Course consisted of 100 officers comprising Army (40), Navy (6), Air Force (12), Civil Services (17) and Friendly Foreign Countries (25). The Course concluded on November 27, 2015.

SCHOOL OF FOREIGN LANGUAGES

9.41 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 our 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 Organisation 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 Govt. rules.

9.42 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.

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

9.44 The Interpreter Course is a fulltime Course. The students are sponsored by the Armed Forces, Ministry of Defence, the Cabinet Secretariat and other Government Departments. This course trains the students to become experts in the highly skilled worked of interpretation and translation. Furthermore, they are trained in writing and speaking the target language with utmost fluency. It is 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.

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

9.46 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. Language. Special Proficiency Exams in various foreign language are conducted for the three services exclusively to assess the assimilation and retention of the languages learnt.

9.47 During 2015-16 SFL has trained the DA/MA (Designate) to various countries in respective foreign languages viz. Arabic, German, French, Japanese and Russian.

HISTORY DIVISION

9.48 The History Division, earlier known as Historical Section was established on October 26, 1953 to compile the histories of the military operations conducted by the Indian Armed Forces since the 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, PVC & AC winners. The Division has also reprinted twelve volumes of Official History of the Indian Armed Forces in the Second World War 1939-45. The operations conducted by the Indian Armed Forces on UN Peace Keeping missions have also been compiled and these include the History of Indian Armed Forces in UN Operations in Congo, CFI or The Indian Troops in Korea 1953-54, Operation Shanti (Indian Troops in Egypt) and Terrific Responsibility (The Battle for Peace in Indo-China). Some of the publications have been brought out both in Hindi and English.

9.49 Presently, the Division is working on two titles, viz. Stories of Heroism Vol. III and War Memorials of the Indian Army.

9.50 The History Division also functions as the research, record and reference office of the Ministry of Defence and the Indian Armed Forces. It receives operational records and miscellaneous records pertaining to military matters from the Ministry of Defence, three Service HQs and various Units on a regular basis for preservations and use. The Division is presently engaged in the digitization of records. The Division also runs a Fellowship scheme under which two research fellowships are granted every three years to encourage research in military history. So far seventeen research fellows have benefitted under the scheme.

9.51 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 suitable mottoes. Names were also suggested for the new requisition of the Indian Navy and Coast Guard.

9.52 The Departmental Library houses more than five thousands titles, which include some rare books, periodicals and foreign publications of military importance. About 500 books have been added to the Library during past one year. Efforts are also being made to digitize the catalogue of the Library to facilitate the availability of the books.

COLLEGE OF DEFENCE MANAGEMENT (CDM)

9.53 CDM is the only tri-Service training institution in India which imparts Defence Management education to senior officers of the three Services, Para Military Forces, officers of the Ministry of Defence and international participants at the conceptual, directional and the functional levels. The College also hosts a number of civilian and foreign delegations on defence management training. To meet the requirements of 'Higher Defence Management' education in the Indian Armed Forces, necessitated by the 'Revolution in Military Affairs', CDM has optimised its existing training infrastructure and yearly trains approximately 500 officers. CDM has also developed tailor made capsule courses/ Management Development Programmes (MDPs) for management education at all levels in the Indian Armed Forces. These MDPs are also subscribed by large number of Friendly Foreign Countries. In fact, one MDP

on Defence Management is entirely devoted to the officers from SAARC countries. From January, 2014 to March 31, 2015, CDM has conducted one Higher Defence Management course, two Senior Defence management course, Nine Management Development Programmes and various External Capsule courses. The participants of HDMC also carry out project studies sponsored by service HQs and on successful completion of the course get Master in Management (MMS) degree from Osmania University.

DEFENCE SERVICES STAFF COLLEGE

9.54 DSSC is an Armed Forces Training Institute (AFTI), which conducts Staff Course for the selected officers of the Three Services and also the officers from the Central Civil Services. In addition, defence officers from friendly foreign countries also subscribe to the Staff Course conducted by the college. The officers passing out from DSSC are awarded Master of Science (MSc) in Defence and Strategic Studies from Chennai University. To meet the requirements of the three services, concerted efforts are on to enhance the capacity of staff course to 500 in a phased manner. The planned training infrastructure for the same has been already established.

MINISTRY OF DEFENCE LIBRARY

9.55 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 1330 books, subscribed to 150 Journals/ Periodicals and 32 Newspapers.

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NATIONAL DEFENCE COLLEGE

10

RECRUITMENT AND TRAINING

Lady Cadets undergoing training at Officers Training Academy, Chennai

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.

10.1 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 and 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 extendable to 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 case to case basis by Integrated Headquarters of Ministry of Defence (Army).

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 discipline of engineering, post graduates with minimum second division aggregate marks in notified discipline 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 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 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:** 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, 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, Govt 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 holders 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 Tech and Non-Tech) are reserved for them. Short Service Commission Women (Tech), NCC entry and Judge Advocate General Branch are exempted from written examinations and need to apply directly to Additional 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 Officer & 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 **Intake:** Intake of candidates for pre-commission training as officers during the year 2015 is given in Table No. 10.1.

10.5 **Raising of Selection Centre North:** Government sanctioned raising of two Service Selection Boards (SSBs) under Selection Centre North at Ropar (Punjab) which is in progress.

10.6 **Recruitment of Junior Commissioned Officer & Other Ranks (JCOs & ORs):** 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

Table No. 10.1

S.No	Academy	Entry	Induction
1.	NDA	Army	376
		Navy	53
		Air Force	163
		Total	**592**
2.	IMA	IMA (DE)	207
		ACC	95
		SCO	108
		PC(SL)	35
		AEC	24
		Total	**469**
3.	OTA	SSC(NT)	148
		SSCW (NT)	26
		SSCW (T)	32
		NCC	61
		NCC(W)	08
		JAG	20
		JAG(W)	08
		Total	**303**
4.	Tech Entries	UES	75
		SSC (T)	188
		10+2 TES	196
		TGC	138
		Total	**597**
		Grand Total	**1961**

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.

10.7 In the Army, there are eleven 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 dispatched to respective Training Centers for training. Efforts are made so that each district of the country is covered at least once by recruitment rallies in a recruitment year.

10.8 **Recruitment Rallies:** In the recruiting year 2015-16, 125 rallies were planned out of which 85 rallies have been conducted upto November, 2015. A total of 67954 candidates have been recruited.

10.9 **Computer Based Entrance Test (CBET):**

(i) CBET software developed to replace the 'paper pencil' based test for Common Entrance Examination is being utilized successfully at all HQ Recruiting Zones initially for the Nursing Assistant trade. Advantages of CBET are as under:

(a) Complete transparency.

(b) User friendly.

(c) Need for invigilation and evaluation board of officers is reduced thus saving on precious manpower.

(d) Obviates impersonation.

(e) Instant results are possible.

(f) Right to Information (RTI) complaint.

(ii) **Present progress on CBET Labs:** At present, there are 12 functional CBET halls for conducting computer based Common Entrance Examination for Soldier Nursing Assistant category. It is anticipated that 28 additional CBET labs will also become operational this year.

10.10 **Automation:** Customized Softwares have been introduced for recruitment in the Indian Army. The data of candidates is entered in the computers and thereafter the entire process is automated. Encrypted bar codes are used for conduct of examination. The is no human intervention in the evaluation of the examination papers, preparation of main list and allotment of regimental centres. Verification of candidates at various stages like Rally, medical, written examination dispatch to Regimental Centre is done through biometric finger device. This has made the recruitment process more transparent and checked impersonation.

NAVY

10.11 Recruitment into the Navy is based on the requirement to effectively man all new and existing ships, submarines, aircraft and shore establishments to the optimum levels. Towards this end, recruitment is being carried out on all India basis. The total number of personnel recruited 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 during their tenure in Service.

Recruitment of Officers

10.12 **The 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 Visakhapatam. Results of qualified candidates are forwarded to UPSC for making the final merit list. Medically fit candidates, who are in the merit list, are intimated for appointment to NDA/ INA as cadets. 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, the UPSC holds the Combined Defence Services Examination (CDSE), twice a year.

Graduates with B Tech degree are also eligible to appear in the examination. Successful candidates join the Indian Naval Academy at Ezhimala, Kerala for the Naval Orientation Course (NOC).

(b) **Non-UPSC Entry:** The Non-UPSC entries cater for both Permanent Commission (PC) and Short Service Commission (SSC). In this case the applications are invited and short listed at IHQ 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.

(c) **10 + 2 (Cadet Entry Scheme):** This scheme is for permanent commission in the Executive, Engineering and Electrical branches of the IN. 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 has been re-launched 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 IN. 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.

10.13 **Women Officers:** Women are being inducted into the Navy, as Short Service Commission (SSC) officers in the Executive (Observer, ATC, Law & Logistic), Education Branch and the Naval Architecture cadre of the Engineering Branch.

10.14 **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.

10.15 **Recruitment through NCC:** University graduates possessing Naval Wing NCC 'C' certificate with minimum 'B' grading and 50% marks in the graduation degree examination are inducted in the Navy as regular commissioned officers. These graduates are exempted from appearing in the 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.

10.16 **Special Naval Architecture Entry Scheme:** The Government has approved the induction of Naval Architect officers into the Engineering Branch of the Indian Navy, as Short Service Commissioned Officers, under a '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

10.17 **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.

10.18 **Types of Entries:** The various entries, for recruitment of sailors, are as follows (with educational qualifications indicated against each):

(a) Artificer Apprentices (AAs) – 10+2 (PCM).

(b) Senior Secondary Rercruits (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 Topass Sailors (Safaiwala) – Class VI.

(e) Direct Entry (Outstanding Sportsmen).

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

Indian Naval Academy (INA), Ezhimala

10.20 The Indian Naval Academy (INA) located a Eshimala, Kerala is spread over 2452 acres of coastal upland and has world class facilities in terms of infrastructure, for academic pursuits and outdoor activities; including state-of-the-art laboratories, workshops, swimming pools and play fields. The Academy has modern residential facilities, an excellent Mess and five well laid-out squadrons, each with its own comprehensive facilities. Built at a cost of over 721.88 crore the Academy accommodated and trains approximately 750 cadets. The capacity of INA is being enhanced to 1200 cadets in Phase II, which is likely to be completed by 2019-20.

10.21 **Indian Naval Academy Course (INAC):** The first B.Tech Course commenced at INA on June 22, 2009. This was significant step in the evolution of the Navy to meet the technical challenges of the 21st Century. B.Tech (AEC), B.Tech (ECE) and B.Tech (ME) degrees are awarded by JNU on completion of the B.Tech course. On completion of a common curriculum in the first 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, NDA cadets after passing out from NDA (three years of BSC) undergo two year MSC in Applied Electronics and Communication curriculum. After passing out of NDA, naval cadets join INA to undergo the first year of MSc. Thereafter, the second year of MSC curriculum is conducted in the subsequent phases of afloat training for a period of one year thus bringing them nearly at par with cadets passing out of INA.

10.22 In addition to the flagship INAC course, the INA conducts Naval Orientation Course (NOC), Short Naval Orientation Course (SNOC), courses for Indian Coast Guard, all of which includes lady officers.

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 and Indian Coast Guard (ICG) annually. The establishment today provides initial complete kitting up and data generation for approximately 5200 trainees being inducted annually, which requires huge logistic support for the State of Odisha during humanitarian Assistance and Disaster Relief (HADR) operation as well as any civil unrest in which the State govt expresses assistance from the establishment. Administrative, training and logistics support to the NCC units located within the State of Odisha and training of the NCC cadet utilising own manpower and material resources are also provided by INS Chilka.

Training of Foreign Personnel

11.24 The Indian Navy has been providing training to foreign personnel more than four decades, during which it has trained more than 12000 foreign personnel from 40 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 **ITEC Scheme:** The Ministry of External Affairs, Govt. 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, boarding and lodging 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).

INDIAN AIR FORCE

Recruitment of Officers

10.26 The policy for selection of officers in Indian Air Force is strictly on the basis of merit and is open to all citizens of the country. Being a technologically intensive service, the IAF strives to maintain high standards for induction of personnel.

10.27 **Induction of Officers:** National Defence Academy (NDA) and Combined Defence Service Examination (CDSE) entries through Union Public Service Commission (UPSC) are prime feeders for the officer cadre.

The non-UPSC entries for induction into the officer cadre are: Short Service Commission (SSC) (Men & Women) Flying, NCC Entry (Permanent Commission for men), Ground Duty Officer Commissioning (GDOC) (Non Tech) (PC for Men), Airmen Entry (PC for Air Warriors), Short Service Commission (Technical) (Men & Women) and Short Service Commission (Non Tech) (Men & Women).

10.28 **Recruitment through Service Selection Boards:** Recruitment through Service Selection Boards/ Air Force Selection Boards is made for the Flying (Pilot), Aeronautical Engineering (Electronics), Aeronautical Engineering (Mechanical), Education, Administration, Logistics, Accounts and Meteorology branches of the IAF.

10.29 **Service Entry Scheme:** Under this entry, serving personnel with minimum 10 years of service (of technical and non-technical trades) of the rank of Sergeant and above between the age of (36-42 years) and minimum educational qualification as 10 + 2, are eligible for Commission after screening at unit level followed by Air Force Selection Board selection tests and medical examination. Service personnel of technical trades are inducted in the Technical Branch and personnel from Non-Technical trades are inducted in the Ground Duty Branches.

10.30 **Recruitment of Women Officers:** Eligible women are recruited as Short Service Commissioned Officers in Flying, Aeronautical Engineering (Electronics), Aeronautical Engineering (Mechanical), Education, Administration, Logistics, Accounts and Meteorology branches of the IAF.

10.31 **Recruitment through National Cadet Corps (NCC):** University graduates possessing NCC 'C' Certificate with minimum 'B' grading and 50% marks in graduation are inducted in Navy and Air Force as Regular Commissioned Officers by way of selection through the Service Selection Boards.

10.32 **Increased submission of Application for Air Force Common Test 01/2016:** The IAF career website is among top twenty website visited websites. During the period from July to December 2015, the website received 47,53,492 hits from visitors. The number of applications submitted for AFCAT cycle 01/2016 are 1,75,584.

10.33 **Implementation of IVRS:** Interactive Voice Response System (IVRS) at the IAF's Publicity cell installed during FY 2015-16 responds to callers who wish to have information regarding eligibility criteria for induction in various branches of the Officers, cadre, schedule of advertising, schedule and result of written tests, schedule of Staff Selection Board interview, position in merit list etc. The IVR system works on a toll free number enabled to handle large number of telephonic queries of aspirants.

Recruitment of Airmen

10.34 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 a 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 sched-

uled 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 main stream.

10.35 All India Select List (AISL) of the successful candidates is published twice a year i.e. April 30 and October 31 each year.

10.36 Introduction of Adaptability Test (AT) has been introduced recently to weed out cases with maladaptive behaviour.

10.37 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 and candidates can register online for scheduled test to be conducted in April/ May 2016.

10.38 **Induction Training (Civilians):** Civilians constitute a sizeable work force of IAF. They play very important role in achieving overall objects/ goals set by IAF. Till recently there was no induction training of civilians joining IAF. Therefore, an Induction training course for civilian clerks who join IAF has been introduced. The objective of the training is to acquaint them with the organization i.e. IAF, make them understand various nuances of civil administration, enhance their skill to enable them perform their task to required standard and inculcate in them a sense of professionalism.

10.39 **Capsule Course for Officers of IAF (Civilians):** A Capsule Course on Civil admin has been introduced for Air Force Officers posted as Officer in Charge of Civil Admin. Objective of this course is to apprise the officers on various aspects of Civil Admin in IAF. The first course was conducted at Air HQ, Vayu Bhawan in February 2012. So far, more than 275 Officers up to the rank of Group Captain have attended the course. The course has been well received by the Officers. Three courses are being conducted in a year. In the series of Capsule Course, the 12th such course is scheduled to be held at AFAC, Coimbatore under the aegis of HQ TC, IAF from December 14-18, 2015.

10.40 **Utilisation of PC-7 Mk-II for Stage II training:** The IAF was following '3 Aircraft – 3 Stage' training for its ab-initio pilots. Presently, Stage-II (F) training is being conducted on Kiran Mk-I/ IA aircraft. Considering that the life of these aircraft will expire by year 2019 and the delay in induction of IJT, IAF has modified its training pattern to '2 Aircraft – 3 Stage' training. As a pilot project, 10 trainees are presently undergoing Stage-II (F) training on PC-7 at AFA.

INDIAN COAST GUARD

10.41 **Recruitment of Officers:** The Officers are recruited into Coast Guard bi-annually. The vacancies for Assistant Commandant in Coast Guard 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 subject 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 19-25 years having Bachelor's Degree of a recognized University with Mathematics and Physics as subject 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 or equivalent passed and in possession current 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 subject 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 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, three years for the Other Backward Classes.

10.42 **Induction of Sub-ordinate Officers as officer:** Suitable serving Subordinate Officers of the Coast Guard of the rank of Pradhan Adhikari or Uttam Adhikari with one year experience and Adhikari with two years experience, subject to qualifying the Departmental Examination as prescribed by the Director General Coast Guard.

10.43 **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 candidate 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 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 Government of India directives, the interviews for all Group 'B' and 'C' posts has been discontinued only skill test is being conducted for suitability for these posts.

SAINIK SCHOOLS

10.44 The Sainik Schools are established as a joint venture of the Central and State Governments. These are under the overall governance of Sainik Schools Society, Ministry of Defence. 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. As a result, states of Andhra Pradesh, Haryana, Bihar and Karnataka have two Sainik Schools each.

10.45 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's cadre of the Armed Forces. The number of cadets joining the National Defence Academy is on the rise in keeping with the primary aim of establishing of Sainik Schools to prepare boys academically, physically and mentally for entry into NDA. For the 134th NDA/ INA Course which commenced in July 2015, a total of 101 Cadets from all Sainik Schools have joined the NDA and Naval Academy.

10.46 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 year in which admission is sought. 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.

10.47 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. Every school is conducting specialised Training/ Workshops for the cadets as well as staff to improve their performance.

RASHTRIYA MILITARY SCHOOLS (RMS)

10.48 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 CBSE. These schools aim to provide quality education to the boys and prepare them to join Defence Services.

10.49 Rashtriya Military Schools admit boys through a Common Entrance Test. The candidates were 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)

10.50 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 Indian 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 Sqn at NDA i.e. 16th Sqn. Since, the construction of the building will take few more years, as an interim measure, one set of pre-fabricated shelters to accommodate 120 cadets have been constructed at NDA. The construction for building of 16th Sqn. has commenced. In addition, a proposal for construction of one more set of pre-fabricated shelters and also raising of an additional Battalion (5th Bn) with 4 Sqns at NDA to further enhance the intake capacity of cadets to 2400 cadets by 2018, has been progressed.

RASHTRIYA INDIAN MILITARY COLLEGE (RIMC)

10.51 Rashtriya Indian Military College (RIMC) was established in 1922 with the aim to prepare selected boys to join National Defence Academy (NDA) and Naval Academy (NAVAC). 25 cadets are admitted in each term twice a year (January and July) on the basis of All India Entrance Examination without any reservation

10.52 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

10.53 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 Exam and get through the Service Selection Board.

(d) For Technical Graduate's 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)

10.54 The IMA also imparts training to Gentlemen Cadets from friendly countries.

OFFICER TRAINING ACADEMY (OTA), CHENNAI

10.55 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.

10.56 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, Signals and Electrical and Mechanical Engineers.

10.57 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

10.58 The Cabinet Committee on Security (CCS) has approved setting up of second Officers Training Academy (OTA) at Gaya, Bihar on December 3, 2009. The training commenced from July 18, 2011. The training capacity as of now is around 400 gentlemen cadets. The capacity will be progressively built up to a strength of 750 gentlemen cadets.

ARMY WAR COLLEGE, MHOW

10.59 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

10.60 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

10.61 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

10.62 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

10.63 The CIJW conducts courses for Officers, JCOs/NCOs in counter insurgency techniques, language courses in Assamese, Bodo, Nagamese, Manipuri/ Tangkhul as also imparts Pre-induction Training (PIT) for all units prior to induction into insurgency areas

COUNTER INSURGENCY PRE INDUCTION TRAINING BATTLE SCHOOLS

10.64 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 units for their role along the line of control and high altitude.

INFANTRY SCHOOL, MHOW

10.65 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 Civil Police Organisations.

COLLEGE OF MATERIALS MANAGEMENT

10.66 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).

10.67 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

10.68 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.

10.69 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

10.70 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.

10.71 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, BENGALURU

10.72 Army Service Corps Centre (South) and Army School of Mechanical Transport were merged with ASC Centre at Bengaluru to establish Army Service Corps Centre and College at Bengaluru 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.

10.73 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

10.74 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.

10.75 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.

10.76 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.

10.77 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

10.78 The Military Music Wing (MMW) raised in October, 1950 under the patronage of the then C-in-C Gen (later Field Marshal) KM 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

10.79 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 being trained is 250.

ARMY SPORTS INSTITUTE (ASI), PUNE

10.80 With a view to producing 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, PUNE

10.81 Army School of Physical Training (ASPT) a premier institution imparting systematic and comprehensive instruction to personnel of the Army regarding the conduct of physical training in units and sub units, 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

10.82 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

10.83 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

10.84 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.

10.85 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 being taught at MCEME.

CORPS OF MILITARY POLICE CENTRE AND SCHOOL, BENGALURU

10.86 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

10.87 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 redesignated as Army Airborne School with effect from January 15, 1992.

MILITARY COLLEGE OF TELECOMMUNICATION ENGINEERING (MCTE), MHOW

10.88 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 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

10.89 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

10.90 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

10.91 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

10.92 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.

TRAINING OF FRIENDLY FOREIGN COUNTRIES PERSONNEL IN INDIA

10.93 **Tri Services Institutes:** In the training year 2015-16, a total of 98 vacancies have been allotted to 42 Friendly Foreign Countries (FFCs) under various schemes of Ministry of External Affairs/ Ministry of Defence for tri Services courses in (ND, CDM & DSSC) training institutions.

10.94 **Army:** There has been a significant increase in scope and reach of India's foreign training cooperation, with a distinct rise in requests from countries across the world to engage with the Indian Army (IA). This re-elects upon the Army's professionalism and training standards. Demands for subscription to courses from FFCs are continuously increasing. During last training year (July 2014 to June 2015) 2361 trainees from 52 countries attended courses in 42 training establishment s of Indian Army. In this training year (July 2015 to June 2016) a total of 2551 vacancies in 240 different courses have been offered to 56 FFCs. Further, Tailor-made courses/ Group Training for capability building and professional enhancement in selected fields are being conducted to address training needs/ aspirations of FFCs. A total of 27 courses in 18 training establishments are being conducted for 1138 FFCs personnel.

10.95 **Navy:** The Indian navy has been providing training to foreign personnel for more than four decades during which it has trained more than 12000 foreign personnel from 41 countries. Our reputation for providing high quality of training drives us to constantly evaluate and evolve. It is our earnest desire to share and deliver the finest training in order to build capacity and everlasting relationship with FFCs. During the Training year 2015-16, 857 vacancies have been allocated to various FFCs. In addition, Indian navy has also deputed Mobile Training Teams to Kenya, Myanmar and Oman.

10.96 **Air Force:** In the training year 2015-16 (July 1, 2015 to June 30, 2016) a total of 889 vacancies have been allotted to 26 FFCs under various schemes of MEA/ MOD. The trainees from these FFCs are scheduled to undergo 149 various courses in 39 different Training Establishments of IAF. Out of these, 367 and 193 vacancies have been allotted to Sri Lanka and Afghanistan respectively.

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11

RESETTLEMENT AND WELFARE OF EX-SERVICEMEN

Official of KSB Secretariat Pinning Token Flag and Collecting Donation from Prime Minister on Armed Forces Flag Day

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.

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 it has 3 attached offices namely, Kendriya Sainik Board Secretariat (KSB Sectt.), Directorate General (Resettlement) (DGR) and Central Organisation, Ex-Servicemen Contributory Health Scheme, (CO, ECHS). The KSB Sectt. 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 takes care of the healthcare and medical needs of Ex-Servicemen and their dependents.

WELFARE

11.2 **Kendriya Sainik Board, Secretariat:** KSB Secretariat is the Apex Body of Government of India responsible for implementing the Central Government policies for rehabilitation and welfare of the war deceased/ disabled and retired service personnel and their dependents. The welfare schemes are implemented through Rajya Sainik Boards (RSBs) located in State capitals and Zila Sainik Boards (ZSBs) located at district level. The establishment expenses of these RSBs/ ZSBs are shared by the Centre and States. Funding pattern is 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 the other States/ UTs. The Central Share provided to States/ UTs towards establishment/ maintenance of RSBs/ ZSBs is reimbursed from the Defence Service Estimate budget allocated to KSB Secretariat for this purpose. ` 28.80 Crore has been disbursed as Central Share upto December, 2015.

11.3 **Construction of Sainik Rest Houses (SRHs):** In order to provide suitable and cheap accommodation to Ex-Servicemen during their short visit to the State Capital/ District HQs for settlement of their pension cases and other matters like availing facilities of CSD Canteen, Hospital, etc. KSB Secretariat shares 50% of the cost of construction of SRHs out of DSE. The SRHs are required to be maintained by

State Governments/ UT Administration from their own resources/ funds.

National Meet of Directors of Dept of Sainik Welfare of All States/UT Held in July 2015 at Delhi

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.

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 ` 59.85 lakh has been collected upto December, 2015. The corpus of AFFDF is about ` 268.00 Crore as on December 31, 2015. 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, MoD.

Raksha Mantri's Discretionary Fund (RMDF) Schemes

11.6 Financial assistance is provided to ESM and their dependents for their identified personal needs, e.g., Penury Grant, Children Education and Marriage Grant, Medical Grant etc. under RMDF. Financial assistance of `34.56 Crore has been disbursed under RMDF upto December, 2015.

PM's Scholarship Scheme (PMSS)

11.7 To support higher technical/ professional education of dependent wards/ widows of ex-servicemen and Ex- Indian Coast Guards, the scheme was introduced in the year 2006. 5500 scholarships are being awarded annually under this scheme to wards of Ex-servicemen /widows. The number of scholarships has been increased from 4000 to 5500 to be distributed equally between boys and girls w.e.f. Academic year 2015-16. 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 ` 48.97 Crore has been disbursed to 19193 beneficiaries upto December, 2015.

Other Welfare Schemes

11.8 **Financial Assistance for Serious Diseases:** Financial assistance upto 90% and 75% of total expenditure subject to maximum `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 PBORs 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. ` 4.29 Lakh has been disbursed upto December, 2015.

11.9 **Financial Assistance for Purchase of Modified Scooter:** Financial assistance of ` 57,500/- is provided from AFFDF budget for procurement of modified scooter for the ESM (with 50% or more disability) who became disabled after retirement from service.

11.10 **Grant to War Memorial Hostels (WMH):** The WMH grant of ` 1350/- per month per child is provided to wards of war widows/war disabled. ` 30.19 Lakh has been disbursed upto December, 2015.

11.11 **Grant to Paraplegic Rehabilitation Centres:** In addition to ` 30,000/- per annum per inmate, annual grant of ` 20.00 Lakh and ` 10.00 Lakh (5% escalation per annum on establishment charges) 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 & Family Welfare as Government of India Nominee for wards of ESM. 20 seats are allotted during 2015-16.

Highlights

11.14 A record amount of the grants/ scholarships to the tune of about ` 83.54 Crore has been disbursed to the beneficiaries under the flagship schemes i.e., PMSS and RMDF compared to ` 50.01 Crore during the last year.

11.15 A National Meeting of Directors of Departments of Sainik Welfare of States/ UTs was held on July 29 and 30, 2015 at Delhi to discuss the issues related to timely financial assistance to ESM/ dependents, Pensionary matter of families of war deceased soldiers, registration of ESM for DLW/ Aadhar number etc. skill development and database of ESM. 23 States/ UTs participated in the meeting.

11.16 A website has been developed for KSB Sectt which will facilitate dissemination of information on all the schemes/ activities undertaken by KSB Secretariat for welfare of ESM and their dependents. The site will provide for workflow software for PMSS which will enable online submission and processing of applications under PMSS. The website is in the final stages of its launching.

RESETTLEMENT

11.17 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 are in comparatively younger age bracket of 35 to 45 years and 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 them 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 on self employment.
- Assistance in entrepreneurial ventures.

TRAINING PROGRAMMES

11.18 DGR is entrusted with the responsibility of preparing retiring/ retired service personnel for a second career. These resettlement courses are selected with a focus on employability of ESM in Society.

11.19 **Officers' Training:** For training of ESM (Officers), the Resettlement Training Programmes are conducted including 24 Weeks Management Courses at IIMs and other reputed B-Schools, Modular management courses like Project Finance, Academic Institutions, Supply Chain, Retail, Human Resource, Facility, Export & Import, Event Six Sigma, Jet Transition and Seafaring etc at other reputed institutes. Besides, specially designed six week course on Corporate Security and Safety have been in existence for officers looking to venture into self employment fields such as security agencies. 60% Course fee is paid by DGR. Widows of officers are also eligible to undergo these courses.

11.20 **JCOs/ OR and Equivalent Training:** For JCOs/ ORs and equivalent, the training courses are conducted for a duration upto one year in diverse fields, such as Security, Fire & Industrial Safety, Computer & IT including 'O' Level, Hospitality, Tourism, Agri based, Business Management, Modular Management, Vocational & Technical, Medical & Healthcare and Library & Information Science etc. These courses are also run at reputed institutes of accreditation. 100% course fee is paid by DGR. Widows/one dependent of JCOs/OR are also eligible to undergo any course sponsored by DGR. ESM are now also entitled to apply for regular DGR training which are not fully subscribed by retiring personnel. The move of allowing ESM to attend regular DGR courses is aimed to benefit all those ex-Servicemen who have not done any resettlement course in the past and are desirous to do these courses to hone their skill. At least two courses are planned every month at all the Regimental Centres to provide variety of courses to the retirees on pension drill.

11.21 **ESM Training:** Under this scheme, funds are allotted to RSBs for conducting vocational training for ESM in their States. The scheme is primarily meant for those ESM who could not avail the facility of resettlement training while in service. The scheme has also

been extended to the widow/ one dependent of an ESM, irrespective of whether his death is attributable to military service or not. The course is free of cost for the ESM and a stipend of `1000/- per month is also paid to each trainee who opt to undergo the training at destination other than their home town. Now, ESM can attend the regular resettlement training programmes of DGR which are under-subscribed to benefit all those ex-Servicemen who have not done any resettlement course in the past and are desirous to do these courses to hone up their skill. However, in this case, no stipend is given to the candidates for attending these high value courses.

EMPLOYMENT OPPORTUNITIES

11.22 **Reservation in Government Jobs:** The Central Government has provided for the following reservation for ESM for vacancies in the posts to be filled by direct recruitment:

a) 10% in Group 'C' posts and 20% in Group 'D' posts. In addition 4.5% reservation in each category is meant for Disabled Soldiers and Widows/ dependents.

b) 14.5% in Group 'C' and 24.5% Group 'D' posts in PSUs and Nationalized Banks.

c) 10% posts upto Assistant Commandants in paramilitary forces.

d) 100% in Defence Security Corps.

11.23 **Implementation of Reservation:** The Government has designated Directorate General Resettlement as Nodal agency for the monitoring implementation of reservation policy for ESM. Half yearly report for the period ending June 30, 2015 has been compiled based on Data received from various organizations.

11.24 **Jobs in the Corporate/ Private Sector:** Substantial employment for ESM can be generated in the Private/ Corporate sector. In order to generate awareness and urge these sectors to employ ESM, a National Corporate Conclave was conducted by DGR in August 2014 where the competence of the ESM were presented to Corporate Heads and the Raksha Mantri urged them to open the employment opportunities for ESM. DGR has signed a MoU with Confederation of Indian Industries (CII) towards this end. Data on personnel sponsored for permanent/ contractual jobs through DGR and RSBs except self employment schemes is as under:-

a) Through DGR	4,348 (as on September 30, 2015)
b) Through RSBs/ ZSBs	10,720 (as on June 30, 2015)

11.25 **Security Agency Scheme:** The DGR empanels/ sponsors ESM run private security agencies for providing security guards to various Central Public Sector Undertaking (PSUs). The scheme offers good self-employment opportunities to retired JCOs/ ORs and equivalent in the field of their expertise. The number of ESM employed during 2015 is 38,210. A total of 381 Security Agencies have been empanelled during 2015.

SCHEMES FOR SELF EMPLOYMENT

11.26 **Coal Transportation Schemes and Tipper Attachment:** This scheme has been re-energized by issue of new MoU and guidelines in July 2014. Accordingly in the year 2015,

25 Officers, 112 JCOs/ ORs and 108 Widows/ disabled ESM/dependents have been benefited from this scheme.

11.27 **Company Owned Company Operated (COCO) Retail Outlets:** In accordance with the policy guidelines issued by the Ministry of Petroleum & Natural Gas, DGR sponsors officers for management of Retail Outlets of IOCL, BPCL and HPCL all over India under the COCO Schemes. DGR has sponsored a total of 131 ESM (O) for COCO Scheme during the year.

11.28 **Gopaljee Dairy and Fresh Farm:** The scheme/aims at providing Self-Employment to JCOs/ ORs in the National Capital Region (NCR).

11.29 **Mother Dairy Milk Booth and Fruit and Vegetable (Safal) Shop:** This is a time tested well-paying self-employment scheme for ESM JCOs/ ORs equivalent. 284 Mother Dairy Booths and 19 Safal Shops have been allotted to JCOs/ ORs Equivalent from this scheme during the year.

11.30 **Management of CNG Stations by ESM (O) in NCR:** The scope of the scheme has been extended to cover entire NCR to include Noida, Faridabad and Gurgaon. 31 ESM (Officers) have benefited from this scheme during the year.

11.31 **Allotment of Army Surplus Class V 'B' Vehicles:** Ex Servicemen and widows of Defence personnel, who died while in service, are eligible to apply for allotment of Army surplus Class V 'B' vehicles. 75 ESM were registered with DGR during the year.

11.32 **Oil Product Agencies Scheme:** In accordance with the Policy Guidelines issued by the Ministry of Petroleum & Natural Gas/ Oil Company, DGR is mandated to issue eligibility certificates for allotment of Oil Product Agencies under the 8% Defence Quota. Details of the Eligibility Certificates issued in the reporting period are as under:-

(a) OPA Scheme (8% Defence Category) – 05

(b) LPG Distributorship (18% Defence Category) – 01

(c) Rajiv Gandhi Gramin LPG Vitran Yojna (25% Defence Category) – 03

11.33 **Corporate Initiative:** In accordance with the directives given after the National Corporate Conclave held in August 2014, Directorate General of Re-settlement under the aegis of all three service HQs and in partnership with CII organized three Job Fairs in Delhi (May 9/10, 2015), Mumbai (October 11, 2015) and Guwahati (November 22, 2015). In these job fairs the participation of corporate houses and ESM was overwhelming. Aim of organizing the

Secretary (ESW) with Lt Gen, Goc-in-C Western Command during DGR Job Fair at Delhi on May 6 & 7, 2015

job fairs is to provide an opportunity to Ex–servicemen and retiring Armed Forces personnel (of all three services i.e. Army, Air Force & Navy) for second career in Corporate/ other Industries. This was facilitated in an organized manner during the above job fairs.

11.34 **Publicity and Awareness Campaign:** To enhance awareness among the ESM about DGR and its initiatives 3 advertisements were released. To optimize awareness about DGR's plans & initiatives undertaken for better resettlement, a programme was telecast on All India Radio (AIR) in May, 2015. The opportunities and possibilities created through job fairs have been duly publicised through direct media interaction, especially through Doordarshan, AIR and print media.

HEALTH CARE

11.35 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 by utilizing the empanelled hospitals for the veterans and their dependents.

11.36 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' (Hospitalization) is provided through spare capacity available in Service hospitals, all Government hospitals and also through civil medical facilities empanelled with ECHS.

11.37 **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. Executive control of ECHS is vested with Department of Ex-Servicemen Welfare.

11.38 **Regional Centres:** There are a total of 28 Regional Centres spread across the country. 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.

11.39 **Polyclinics:** A total of 432 ECHS Polyclinics, including six Polyclinics in Nepal, have been sanctioned by the Government. Out of 426 ECHS Polyclinics in India, 419 have been operationalised.

Present Status

11.40 **ECHS Membership:** A total of 15,21,563 ESM have enlisted themselves with the Scheme along with 32,02,610 dependents as on May 1, 2015. Total beneficiaries under this scheme are 47,24,173.

11.41 **Polyclinics and Civil Empanelled Medical Facilities:** A total of 177 additional medical facilities have been enlisted with ECHS in last one year. Now the Scheme has 1445 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.

11.42 Highlights

(a) **Sanction of ECHS Bhawan:** Government has sanctioned ECHS Bhawan.

(b) **'On-Line' Bill Processing:** All the 28 Regional Centres are now processing bills on-line.

(c) **Empanelment of Civil Medical Facilities:** 177 new medical facilities have been empanelled during 2015. The total number of facilities available as on date are 1445.

(d) **Empanelment of Endolite and Ottobock Prosthesis Centres:** The Government has approved the proposal 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.

(e) **Authorization of Digital Signature Certificate (DSC) for OIC Polyclinics:** The authorization of Digital Signature Certificate for ECHS has been approved.

(f) **Revision of Rates : Hearing Aids:** Rates for procurement of Hearing Aids for ECHS beneficiaries have been revised.

(g) **Enhancement of Pay/ Fees of Contractual Employees:** The contractual fee of Medical Officer, Dental Officer, OIC Polyclinic has been revised from ` 46,000/- to ` 60,000/- pm and of Medical Specialist from ` 55,000/- to ` 70,000/- for 1st year contract appointment and ` 80,000/- for 2nd year contract appointment.

11.43 **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.

11.44 **ECHS Web site:** 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

11.45 **One Rank One Pension (OROP) to the Defence Forces Personnel:** The Government has taken the historic decision to implement One Rank One Pension for the Defence Force Personnel w.e.f. July 1, 2014 and issued notification for its implementation. OROP implies that uniform pension be paid to the Defence Forces Personnel retiring in the same rank with the same length of service, regardless of their date of retirement, to bridge the gap between the rates of pension of current and past pensioners at periodic intervals.

11.46 **Revision of 43% and 45% commuted portion of pension of Armed Forces absorbees who had drawn lump sum payment on absorption in Public Sector Undertakings/ Autonomous bodies- Implementation of Government's decision on the recommendations of the Sixth Central**

Pay Commission: The provisions of Ministry of Personnel, Public Grievances & Pensions, Department of Pension & Pensioner's Welfare O.M.No.4/30/2010-P&PW (D) dated July 11, 2013 shall apply mutatis-mutandis to Armed Forces personnel absorbees. Order issued vide Government letter No. 1(4)/2007-D (Pen/ Pol) dated January 19, 2015.

11.47 **Grant of Service element to pre-August 30, 2006 released Non Regular Officers in Aggravation-cases:** Service element of disability pension in respect of non-regular officers would be calculated after taking into account the full commissioned service rendered by them as calculated in the case of Regular Commissioned Officers. As such, they are also allowed the benefit of revision w.e.f. August 30, 2006 as allowed to attributable cases as per Government letter dated August 30, 2006 under reference. Orders issued vide Government letter No. 16(1)/2012-D (Pen/Pol) dated March 23, 2015.

11.48 **Minimum Guaranteed Pension for Disability/ War Injury element as per CSC 2012 recommendation (vide Government letter dated April 10, 2015):** The minimum guaranteed Disability/ War Injury Element of Pre-2006 Armed Forces Personnel should be determined with reference to the minimum of the fitment table for the rank in the revised pay structure issued for implementation of recommendations of 6th CPC instead of the minimum of the pay band, subject to the consideration that the rate of disability element/war injury element of lower rank may not exceed that of higher rank.

11.49 **Payment of Constant Attendance Allowance (CAA) on monthly basis with disability pension to Armed Forces personnel:** Constant Attendance Allowance shall be paid on monthly basis instead of in arrears, during the period of award alongwith disability or war injury pension as the case may be. Order issued vide Government letter No. 1(2)/2013-D (Pen/Pol) dated April 27, 2015.

11.50 **Grant of Fixed Medical Allowance (FMA) to the Armed Forces pensioners/ Family pensioners in such cases where date of retirement is prior to April, 1, 2003 and who had opted not to avail Medical facilities at OPD of Armed Forces Hospitals/ MI rooms and are not member of ECHS:** Rate of fixed Medical allowance enhanced from existing rate of ` 300/- to ` 500/- w.e.f. November 19, 2014. These orders are applicable only in such cases, where the date of retirement is prior to April 1, 2003 and who had opted not to avail medical facilities at OPD or Armed Forces Hospitals/ MI rooms and are not members of ECHS. Order issued vide Government letter No. 1(10)/2009-D (Pen/Pol) dated May 5, 2015.

11.51 **Simplification of Pension process for permanently disabled children/ siblings and dependent parents:** To streamline the process of grant of pension to old parents/ disabled children sibling, the employee/ pensioner/ family pensioner may at any time before or after retirement/ death of Armed Force Personnel, may make a request to the Appointing Authority seeking advance approval for grant of family pension for life to a permanently disabled child/ sibling. Order issued vide Government letter No. 1(7)/2013-D (Pen/Pol) dated May 15, 2015.

11.52 **Simplification of Pension payment procedure - Submission of certificates by retiring Armed Forces Personnel and civilian employees along with pension papers:** It has been decided that the required undertaking/ status of non-reemployment/employment after retirement may be obtained by the Record Offices/ Head of the Offices from the retiring Defence personnel alongwith other document before his retirement. The undertaking/ certificate shall be forwarded to the pension disbursing agencies along with Pension Payment Order (PPO) by the Record Office/ Head Office following the usual procedure. The bank shall credit the Pensionary awards notified in favour of the pensioner into his/ her bank account as and when due if said undertaking/ certificate is received along with pension documents. Order issued vide MoD letter No. 3(01)/2015- D (Pen/Pol) dated August 25, 2015.

11.53 **Revision of pension in r/o pre-2006 retired JCO/ ORs pensioners/ family pensioners:** It has been decided that w.e.f. January 1, 2006 pension/ family pension of pre-2006 JCOs/ ORs pensioners/ family pensioners shall be determined as 50% and 30% respectively of the minimum of the fitment table for the Rank in the revised Pay Band as indicated under fitment tables annexed with I/S/2008 as amended and equivalent instructions for Navy and Air Force, 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. Order issued vide MoD letter No. 1(4)/2015 (I)-D(Pen/Pol) dated September 3, 2015.

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12

COOPERATION BETWEEN THE ARMED FORCES AND CIVIL AUTHORITIES

IAF Mi-17 V5 on a rescue mission in Nepal

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.

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 are given in the succeeding paragraphs.

INDIAN ARMY

MILITARY CIVIC ACTION PROGRAMMES

12.2 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 Gujjars/ Bakarwals' and 'Nation Building'. To promote cross cultural exchange of youth and Nation building, some projects are also undertaken towards 'Educational/ Motivational Tours' by the students, elders and Veer Naris to the other parts of the Country. In addition, basic needs like 'Water Supply Schemes', 'Electrification' and 'Animal Husbandry' are also given due importance while undertaking Operation Sadbhavana projects.

12.3 During the year 2015-16, a sum of ` 54.40 Crore has been allotted for undertaking military - civic action in Jammu & Kashmir and North East Region.

FLOOD RELIEF OPERATIONS

12.4 **Jammu & Kashmir**

(a) **Anantnag:** On June 25, 2015, consequent to flooding of certain areas due to heavy rains, three Army columns were launched which evacuated 169 civilians from Shamsipura, Manigam, Chhamgind and Ariguntun of Anantnag district.

(b) **Ganderbal:** On July 17, 2015, Army personnel provided medical aid to 657 civilians and food to 2880 civilians after cloud burst in Kulan and Gagangir. Approximately 3500 Amarnath Yatris were rescued.

(c) **Kathua:** On September 22, 2015, two PHC officials stranded in River Ujh due to flash flood in general area Guddu Fallal were rescued by using Army Aviation Helicopter.

12.5 West Bengal

(a) Jalpaiguri: On July 1, 2015, a requisition was received from District Magistrate, Jalpaiguri for evacuation of civilians marooned due to flooding of Jarda River (Mainaguri & Mal Bazar). Four Engineer Teams were deployed at Mainaguri and Mal Bazar for the rescue operations. Total of 300 civilians were provided medical aid and 125 civilians were evacuated.

(b) **Darjeeling:** Algara-Kalimpong-Labha was blocked due to landslide. Six Army Teams and one NDRF Team were deployed to clear the landslides at Kolakham, Bhalu Khop and Mile Stone 8.

(c) **Burdwan:** On August 2, 2015, six Army teams were deployed for evacuation of civilians along the banks of Hoogly River in general area Kalma. 26 civilians were evacuated.

12.6 Gujarat

(a) **Banas Kantha:** On July 29, 2015, 10 Army teams, three Engineer Task Forces and four Medical teams were deployed for flood relief operations in Palanpur. 174 civilians were rescued from Bisa and 156 civilians were rescued from Therad. In addition, Army personnel provided medical aid to 230 civilians and food packets to 850 civilians.

(b) **Bhuj:** On June 30, 2015, for flood relief in village Dhordo, 70 km North of Bhuj, ten Army teams and two Engineer Task Forces were deployed. Total of 200 civilians were rescued. In addition, Army personnel provided medical aid to 300 civilians and food packets to 350 families civilians.

12.7 Assam

(a) Kokrajhar: On August 21, 2015, five Army teams were deployed for flood relief operation in Kokrajhar. 2000 civilians were rescued in the operation.

(b) **Dibrugarh:** On September 1, 2015 at Dibrugarh, 10 Army Teams were deployed in general area Tengakhat, Naharkatia, Tingkhong, Hathi Badi and Sansai for flood relief operations. A total of 400 civilians were rescued.

12.8 **Tamil Nadu (Chennai):** Floods in Tamil Nadu were devastating. 73 Army teams with 57 Boats Assault Universal Type (BsAUT), 27 Out Board Motors (OBMs) and 16 Geminis were deployed in general area Tambaram, Cuddalore, Arakonam, Tiruneermalai. Kottupuram, Defence Colony, Tiruvanmayur, Modichur, Manali and T, Nagar. Approximately 19,600 civilians were rescued by the Army. Over 2,02,500 relief packets were distributed and 22,100 persons were provided medical aid.

12.9 **Manipur (Thoubal):** On July 31, 2015, three Army columns were deployed for evacuation of stranded civilians in Thoubal. Relief, medicines and food were provided to 800 civilians. 700 civilians were provided shelter.

12.10 **Maharashtra** (**Aurangabad and Jalna):** On September 18, 2015, air evacuation of 40 civilians stranded on roof tops of four villages was completed in Aurangabad and Jalna district caused by over flow of Lakhi Dam inundating Naigaon, Hatmali, Sayyadpur and Chardham villages.

OPERATION MAITRI

12.11 **Aid to Nepal:** The disaster relief operations post earthquake in Nepal were carried out with effect from April 25, 2015 to June 4, 2015. The Indian Army effort in Nepal comprised of 18 Medical Teams, five Engineer Task Forces (ETF) and five Advanced Light Helicopters (ALHs). The relief and rescue effort provided is as under:

(a) **ETF:** The ETF cleared/ constructed tracks in difficult and inaccessible areas to facilitate the relief work in Barpak, Gorkha and Kathmandu. The teams cleared 16.5 Kilometers of tracks, over 11477 cubic meters of debris, reconstructed/ helped to reconstruct 55 houses/ shelters/ tents and recovered bodies.

(b) **Army Aviation:** The Army aviation pilots flew continuously to evacuate stranded/ injured people, provide relief material and induct Nepal Army troops to inaccessible areas to carry out relief work. A total of 546 sorties were flown by our helicopters and rescued 381 people, moved 775 people, inducted 567 Nepalese troops and dropped 198.43 tons of stores and supplies in the affected areas.

Clearance in Kathmandu

Clearance in Bhaundhara

(c) **Medical Teams:** The Indian Army Medical Teams extended medical assistance to 4831 injured including 300 surgeries, 214 hospital admissions and 4190 OPD cases.

(d) **Relief Material:** 10,000 blankets, 1000 tents and 1000 tarpaulin / plastic sheets were provided.

12.12 Aid to Civil Authority and Operation Sadbhavana

(a) **Shri Amarnath Ji Yatra:** The Rashtriya Rifles 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.

(b) **People Friendly Operations:** A large number of people friendly activities were undertaken to shape the people's perception about the army and government and this 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.

Medical Camp in Remote Areas

INDIAN NAVY (IN)

12.13 **Operation Rahat – Evacuation of Indian and Foreign Nationals from Yemen:** IN undertook one of the largest evacuation operation of Indian and other nationals from Yemen in the midst of the ongoing civil war. Three IN ships, viz. Mumbai, Tarkash and Sumitra, were deployed for the operation from March 30 to April 19, 2015. They entered various ports in Yemen to evacuate the Indian diaspora and other foreign nationals. The operation resulted in the safe evacuation of 3074 personnel from Yemen, including 1783 Indians and 1291 foreign nationals from 35 different countries. A number of medical contingencies were encountered including pregnant women, diabetic patients, heart patients, minor injuries, sick infants, etc and proper medical aid was provided to all.

12.14 **Operation Madad - Assistance During Chennai Floods:** The Indian Navy deployed five IN ships, Chetak helicopters, Remotely Piloted Aircraft (RPA), Gemini crafts and approximately 1700 personnel for relief efforts during the floods in Chennai from November 8 to December 14, 2015. In addition, integral boats onboard the ships deployed for relief efforts were kept stand-by for deployment. As a result of concerted IN efforts, about 1470 personnel were rescued by Naval personnel and medical assistance was provided to approximately 300 personnel. In addition, about 19,700 food packets were provided to the affected populace and approximately 2000 kg of food material was air dropped in inaccessible areas. IN distributed 2000 each durries, blankets, bed sheets and 6000 towels to the local populace. Eight 7.5 KVA generators were provided to the local administration and one Community Kitchen was set up in Chennai to provide hot meals to the affected populace.

IN Personnel undertaking Rescue Operations during Operation Madad

12.15 **Assistance in A&N Islands:** Three IN ships were deployed for ferrying personnel

from Port Blair to Hut Bay and back in view of suspension of ferry services on May 23, 2015. A total of 424 personnel were ferried from Port Blair to Hut Bay and 372 from Hut Bay to Port Blair. The passengers were provided with hot meals, bottled water onboard and proper medical aid to the needy.

IN Ships providing Aid to Civil Authority - Local Population being ferried from Port Blair to Hut Bay and back

12.16 **Transportation of 'Harvested Heart' for Transplant:** IN undertook transportation of a harvested heart from Thiruvananthapuram to Kochi on July 24, 2015 by a Dornier aircraft, following a request received from the civil administration. The 'harvested heart' was transplanted on the patient and the alacrity in the response by IN saved the patient's life.

Transportation of 'Harvested Heart' by IN Dornier at Kochi

12.17 **Assistance for Capsized Fishing Boat:** IN launched a SAR helicopter for assistance towards search and rescue of a capsized fishing boat, 'Emmanuel', off Thiruvananthapuram on July 16, 2015. The helicopter successfully located the capsized boat and survivors about 45 NM into the sea off Thiruvananthapuram and evacuated them safely.

12.18 **Management of a Case of Drowning:** A two year boy was brought to INHS Patanjali at Karwar with alleged drowning in a pond while playing at village in Chendia on April 18, 2015. On arrival, patient was unresponsive, with no signs of life. After continuous resuscitation and medication, he was successfully revived and transferred to Goa Medical College for further management.

DIVING ASSISTANCE TO CIVIL AUTHORITIES

12.19 **Diving Assistance in J&K:** The MARCOS frequently provide search and rescue cover during natural calamities and water borne activities being organised by the Army under the aegis of 'Op Sadbhavana' aimed at Winning the Hearts and Minds of the local population in Jammu & Kashmir. Further, the diving capability of MARCOS and their ability to render assistance during Aid to Civil Authority operations in the Valley has been appreciated by all. Four major diving operations, apart from numerous small scale operations, were carried out by MARCOS in 2015.

12.20 **Flood Rescue teams in Mumbai:** Flood Rescue teams with Gemini boats were positioned at various locations of Mumbai to provide assistance to civil administration during all flood related contingencies/ emergency for the entire duration of Monsoon. Naval rescue teams were also deployed at various Lakes/ Seashores during Ganpati Visarjan/ Ganeshotsav festival.

Humanitarian Assistance and Disaster Relief (HADR) Exercises

12.21 **Operation Toofan:** An HADR exercise 'Operation Toofan 15' was conducted in the Lakshadweep group of islands of Kavaratti, Agatti, Kalpeni and Androth, in February 2015. A total of 22 IN ships participated in the exercise, with various ships being allocated different islands depending upon the type and extent of HADR that would be required for that particular Island.

Setting up of Medical and HADR Camp during Operation Toofan

12.22 **Exercise Jal Suraksha 01/15:** Andaman and Nicobar Islands fall in Seismic Zone V and are thus prone to natural disasters. In order to prepare for an HADR scenario, Exercise Jal Suraksha 01/15 was conducted in Andaman and Nicobar Islands in September 2015. All activities and drills related to HADR Ops viz. SAR Operations, conversion to hospital ship, damage assessment and repair preparation, shifting of personnel/ families, loading of HADR bricks for assistance to civil administration etc. were undertaken during the exercise.

12.23 **Coastal Security Awareness Programmes/ Campaigns:** The Indian Navy conducted a number of coastal security awareness programmes/ campaigns alongwith the Indian Coast Guard and Marine Police Personnel in all coastal states. In addition, regular training for Marine Police is being conducted by Indian Navy, which includes familiarisation sorties onboard ships. The campaigns are aimed at enhancing awareness about coastal security amongst the villagers and fishermen of coastal villages.

12.24 **Interaction with Fishermen:** The IN continues to actively engage with the fishing community and local officials towards reporting of all incidents occurring at sea and rendering timely assistance. The fishermen/ coastal community have also engaged with IN by providing valuable inputs on all suspicious activities at sea.

Naval Health Camps

12.25 As a part of outreach social service by Indian Navy, medical camps, blood donation camps, general health check-up and dental camps were organised on a number of occasions through out the year. The following camps were organised in 2015:

(a) **Multi Specialty Health Camps in A&N Islands:** Multi-specialty health camps

were organised in far flung areas of Andaman and Nicobar Islands by INHS Dhanvantri with support from local authorities. The Armed Forces Health Camp were organised at Kamorta island on January 23, 2015, August 7-8, 2015 and October 9-10, 2015. A multi-specialty health camp was also organised at Campbell Bay on October 9, 2015.

(b) **Cancer Screening Camp:** INHS Dhanvantari conducted cancer screening camp on February 25, 2015 as part of health promotion and positive health campaign in Andaman and Nicobar Islands, wherein a total of 172 individuals benefitted.

(c) **Multi Specialty Health Camps at Porbandar:** A multi-specialty health camp from INHS Asvini was conducted on May 19, 2015 at Porbandar, wherein 944 patients were examined.

(d) **Blood Donation Camp at Porbandar:** A blood donation camp was conducted at INS Sardar Patel, Porbandar on September 16, 2015. Two blood banks, Asha Children's Hospital and Government Hospital Porbandar were involved in the camp.

(e) **Multi Speciality Health Camps at Karwar:** A multi-specialty medical and dental health camp was organised by INHS Patanjali on September 1, 2015 at Kuvempu Model School, Todur, wherein a total of 253 personnel were examined. INHS Patanjali also organised another medical and dental health camp for Asha Niketan (Residential School for Speech and Hearing Impaired) on August 18, 2015.

COAST GUARD

12.26 **Flood Relief at Chennai:** Intense torrential rains since December 1, 2015 had caused heavy inundation in and around Chennai requiring immediate assistance. The situation had further deteriorated with the release of water from Chembarambakkam reservoir into Adyar River, resulting in flood like situation along Adyar river banks. Considering the weather forecast predicting heavy rainfall and formation of a low pressure area in the first week of December 2015, Coast Guard Regional Headquarters (East) immediately issued an advisory to state administration and fisheries authorities on November 30, 2015 to recall all fishermen at sea and also to prevent further venturing into sea by fishermen of Tamil Nadu and Andhra Pradesh.

12.27 In the aftermath of torrential rains which inundated Chennai and sub-urban areas, massive rescue and relief efforts by the Indian Coast Guard in conjunction with civil authorities were initiated. A total of 3440 persons were rescued and 23818 Kgs

of provisions were distributed. 12 Medical camps were also conducted.

AIR FORCE

12.28 **Operation Rahat:** The state of Yemen was pushed into crisis due to a developing civil war situation in March 2015. The Government of India assessed a requirement of immediate evacuation of over 4000 Indian nationals based at various locations in Yemen. A combined MEA, IAF, Indian Navy and Air India evacuation plan was put into place for evacuation of Indian nationals. While Indian Naval ships evacuated nationals from Yemenese port cities to Djibouti and Air India ferried back nationals from Saana to Djibouti, IAF deployed three C-17 aircraft to ferry back Indian nationals from Djibouti to Kochi and Mumbai. A total of 11 evacuation trips were undertaken by IAF aircraft and 2096 Indian nationals were evacuated.

12.29 **Operation Maitri:** On April 25, 2015, Nepal was struck by an earthquake. IAF launched its biggest ever Disaster Relief Operation in a foreign land to provide relief and support to the Government of Nepal. A total 1636 sorties, amounting to a total flying effort of 863 hours were flown towards air evacuation of 780 casualties (including 121 foreign nationals) and rescue of 5188 personnel from various forward/ earthquake affected areas.

Relief operations in Nepal

12.30 **Flood Relief Operations in Myanmar:** On August 6-7, 2015, IAF C-17 and C-130J aircraft were tasked to airlift 104 tons of relief material from Delhi to Kalay and Mandalay in Myanmar. The aircraft airlifted 48 tonnes and 56 tonnes load to Mandalay and Kalay respectively.

12.31 **HADR (Govt of Gujarat & Rajasthan):** IAF utilised helicopters for HADR Operations for Government of Gujarat and Rajasthan in July 2015 involving 129 hrs and 199 sorties.

12.32 **Operation Triveni:** Mi-17 and Mi-17 V5 helicopters of the IAF have been deployed since December 2009 in support of Ministry of Home Affairs for anti-naxal operations. The IAF is fully cognizant of the operating paradigm of our Central Armed Police Forces deployed in these trying circumstances and is rendering yeoman service towards the success of these operations. In the calendar year up to October 2015, IAF has flown 1775 sorties utilising 1182 hours airlifting 10712

personnel, 144 casualty, 38 Mortal Remains and 211 tonnes of material.

12.33 **Flood Relief Operations in Chennai:** Flood relief operations were carried out by the IAF from December, 2015 amidst heavy rains. Rescue and relief operations were mounted at dawn on December 2, 2015 from Air Force Station Tambaram and from Arakkonam. IAF C – 17, C – 130, IL-76 and An-32 aircraft flew 48 sorties, airlifting 30 NDRF teams, five Indian Army Columns and 281 tonnes of relief material besides evacuating 2411 stranded civilians.

12.34 13 IAF helicopters flew 192 sorties in rain and in marginal weather from the nearby airbase at Tambaram, airlifting 456 stranded people and air dropping 37 tonnes of relief material. IAF helicopters flew non-stop to provide relief and succour to people marooned on roof tops. These sorties included one in which a pregnant lady was rescued, who gave birth to twins soon thereafter.

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13

NATIONAL CADET CORPS

Visit of Raksha Rajya Mantri to Republic Day Camp 2016

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.

13.1 The National Cadet Corps (NCC) was established under the NCC Act, 1948. It has completed 67 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 accorded sanction to increase the cadet strength by 2 lakh cadets from 13 to 15 lakh cadets. This expansion is planned in five phases of 40,000 cadets each. Two phases have been completed and the sanctioned strength as on date is 13,80,000 cadets. The NCC's presence presently extends across the country covering 15,816 institutions.

13.3 Wing-wise distribution of enrolled cadet strength is as under:

(a) Army Wing - 11,40, 081
(b) Air Wing - 66,064
(c) Naval Wing - 65,445
Total - 12, 71,590 (including 3,50,222 Girl cadets)

MAIN ACTIVITIES AND IMPORTANT HAPPENINGS

13.4 **New Raisings in the 3rd Phase in additional NCC Cadet Strength Sanctioned:** 1 Group HQ, 7 NCC Army Units and 7 NCC Naval Units have been sanctioned by Government on October 27, 2015 for raising in the 3rd Phase of implementation. This will increase the number of NCC Units to 814. Once these units are set up, the cadet strength would increase to 14,20,000. The details are as under:

Formation	3rd 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 **Out of turn Allotment of NCC to Institutions Willing to Bear Entire Expenditure on NCC Activities:** Government sanction was accorded on July 22, 2014 for out of turn allotment of NCC to institutions willing to bear entire expenditure on NCC activities and the implementation process is on. The scheme, besides resulting in savings to the Government exchequer, would also amount to partial liquidation of the waiting list of institutions.

13.6 **Out of Turn allotment of NCC to Defence Administered Institutions**: The proposal for out of turn allotment of NCC cadet strength to Defence Administered Institutions with 100% central funding has been sanctioned by Government on July 23, 2015.

ACTIVITIES RELATED TO WOMEN WELFARE

13.7 **Raising of NCC Girls Battalions:** A Girls Battalion has been sanctioned in the 3rd Phase for raising at Jhansi, Uttar Pradesh. Girls are also being encouraged to join the existing Mixed Battalions with an aim to increase the current girls percentage to 33%. 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

13.8 **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 training syllabus made effective with effect from April 1, 2013.

13.9 Training of cadets 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.

13.10 **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.

13.11 **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 Personality Development Programme for its cadets. Various types of camps conducted in NCC are as listed below:

(a) **Annual Training Camps (ATCs):** 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 Camps (NICs):** A total of 37 NICs are conducted every year. 21,960 cadets from all States and Union Territories participate in these NICs. 30 NICs have been conducted till date in different parts of the country during current training year. In addition, Special NICs (SNIC) have been scheduled/ conducted at the following places:

(i) **SNIC Leh:** SNIC was conducted at Leh from August 11-22, 2015. A total of 170 cadets from all parts of the country participated in this SNIC.

(ii) **SNIC Peddapuram (Kakinada):** SNIC, Peddapuram was conducted from October 15-26, 2015. 300 Cadets, both boys & girls, participated from all States and UTs.

(iii) **SNIC Badabagh (Jaisalmer):** SNIC, Badabagh (Jaisalmer) was conducted from October 24 to November 4, 2015. 300 cadets from all over India participated.

(iv) **SNIC North Eastern Region (NER):** SNIC (NER) was conducted at Dimapur (Nagaland) from December 27, 2015 to January 7, 2016. 600 Cadets from all over India attended the camp.

(v) **SNIC Port Blair:** SNIC has been conducted at Port Blair from February 9-20, 2016. 180 cadets from all over India attended the camp.

(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 Government Police Lines, Daisar, Jodhpur under the aegis of NCC Directorate, Rajasthan from October 8-19, 2015. A total of 420 SD boys and 180 SW girls 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 16-27, 2015. A total of 590 cadets (386 from Senior Division and 204 from Senior Wing) participated in this camp.

(e) **Thal Sainik Camp (TSC):** TSC is conducted at Parade Ground, Delhi Cantt every year for Senior Division and Senior Wing cadets. This year the camp was conducted from September 18-29, 2015. A total 1360 cadets participated in this camp.

(f) **Leadership Camps:** Six Advance Leadership Camps (ALC) are organized every year on all India basis of which two ALCs have been converted for SSB Preparation and Screening Capsule with the vacancies being utilised by Senior Division/ Senior Wing Cadets from all 17 States NCC Directorates.

(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.

(h) **Republic Day Camp 2016:** Republic Day Camp-2016 was conducted from December 30, 2015 to January 31, 2016 at Delhi. The camp was attended by 2069 cadets from all over India, besides cadets of friendly foreign countries with whom NCC has an ongoing Youth Exchange Programme. Inter Directorate competitions concerning institutional training, cultural competitions and National Integration awareness programmes are conducted during the month long camp.

13.12 **Republic Day Parade:** Two NCC marching contingents and two NCC bands participated in the Republic Day Parade on Rajpath in New Delhi on January 26, 2016.

13.13 **Attachment Training:** NCC cadets derive first hand experience of life in the Services 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 and 48 SW cadets were attached to Officers Training Academy, Chennai for duration of two weeks each.

(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 States NCC Directorates (except J&K) underwent attachment training with Air Force Academy, Dundigal.

(e) **Various Air Force Stations:** Every year 20 Associate NCC Officers (ANO) and 200 SD cadets of Air Wing are attached to various Air Force Stations for a period of 14 days.

13.14 **Microlight Flying:** Microlight flying is being conducted in NCC with a view to give air experience to the Air Wing NCC cadets (SD/SW). At present Microlight flying facilities are provided at 50 NCC Air Squadrons across the country.

13.15 **Pre-Commission and Refresher Courses for Air Wing ANOs:** Every year three Pre-Commission Courses of 8 weeks duration and three Refresher Courses each of 4 weeks duration each for Air Wing ANOs are conducted at Air Force Station Tambaram.

13.16 **Naval Ship Attachment:** 170 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 an opportunity to see naval exercises at sea.

13.17 **Foreign Cruises by Naval Cadets:** 10 Naval Cadets and 1 supervisory staff visited Port of Victoria, (Seychelles) and Port Louis (Mauritius) from September 16 to November 6, 2015 on board Naval Ships.

13.18 **Naval Academy Attachment Training:** Annual Training Camp for 170 SW cadets was conducted from December 13-24, 2015 at Kozhikode.

13.19 **Technical NCC Camp for Naval Wing:** 76 SENIOR DIVISION/ SW Cadets from Engineering Colleges at Chennai attended the Annual Technical Camp from June 23 to July 2, 2015. The cadets were taken to Naval Engineering Establishments at INS Valsura, Shivaji and Naval Dockyard at Mumbai on study tour.

ADVENTURE TRAINING

13.20 **All India Sailing Regatta at Chilka:** 51 SENIOR DIVISION and 51 SW Cadets from all 17 Directorates participated in All India NCC Sailing Regatta conducted at INS Chilka from November 20-27, 2015. One officer and 6 cadets from Bangladesh NCC also attended the Regatta.

13.21 **Sailing Expedition:** Sailing Expedition is an interesting feature of the Naval Training. Each NCC Directorate undertakes 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. A total of 13 expeditions were conducted by different NCC Directorates during the year.

13.22 **Scuba Diving:** This year NCC Directorates Andhra Pradesh, Telangana, Delhi, Maharashtra, Tamil Nadu, Puducherry and Andaman & Nicobar conducted Scuba Diving Camp. A total of 225 cadets participated.

13.23 **Mountaineering Expeditions:** Directorate Gen NCC launches two expeditions every year, one each for the girl and boy cadets. 20 SENIOR DIVISION/ SW cadets participate in the expedition. In the year 2015, NCC Girl Cadets scaled Mt Deo-Tibba in Himachal Pradesh and attempted Mt Trishul in Garhwal Himalayas, (Uttarakhand).

NCC GIRLS EXPEDITION TO MT DEO TIBBA

13.24 **Trekking Expedition:** A total of 29 trekking expeditions have been conducted by NCC Directorates during the year 2015-16 with a participation of 14500 cadets.

13.25 **Para Basic Courses:** Every year NCC cadets are nominated for Para Basic course held at Para Training School, Agra. During the training year 2015-16, 40 SENIOR DIVISION and 40 SW cadets attended the course.

13.26 **Slithering Demonstration:** 120 cadets were trained in Slithering and 29 SENIOR DIVISION and 13 SW cadets participated in the slithering demonstration during PM's Rally 2015.

13.27 **Desert Camel Safari:** Desert Camel Safari is conducted by Rajasthan Directorate in the deserts of Jaisalmer every year. 7 cadets from Kazakhstan alongwith 20 Indian cadets participated in Desert Camel Safari from November 22 to December 3, 2015.

13.28 **Sea Sorties:** This year, cadets were put on board Naval Ships for sea experience. So far 710 cadets have been on 7 sea sorties.

YOUTH EXCHANGE PROGRAMME (YEP)

13.29 **Out-Going YEP Visits:** The details of YEP visits undertaken during the year are given below:

S.No.	Country	Officers	Cadets
(a)	Singapore	4	20
(b)	Russia	2	25
(c)	Sri Lanka	3	18
(d)	Kazakhstan	2	24
(e)	Bhutan	2	12
(f)	Bangladesh	2	20
(g)	Vietnam	2	13
(h)	Nepal	1	8
	Total	**18**	**140**

13.30 **In-Coming YEP Visits:** The details of incoming YEP visits by foreign delegations are as follows:

S.No.	Country	Officers	Cadets
(a)	Kazakhstan NCC cadets for Desert Safari	2	7
(b)	Bangladesh (Sailing Regatta)	1	6
(c)	Bangladesh (Belgaum Trek)	1	8
(d)	Sri Lanka (Shivaji Trail Trek)	1	6
(e)	Delegations from 7 foreign countries namely, Bhutan, Kazakhstan, Bangladesh, Nepal, Sri Lanka, Vietnam and Russia attended Republic Day Camp (RDC) – 2016.	12	91
(f)	Heads of Departments (HoDs) from Bangladesh, Nepal, Sri Lanka, Kazakhstan, Vietnam and Russia.	6	0
Total		**23**	**118**

SOCIAL SERVICE AND COMMUNITY DEVELOPMENT

13.31 **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.

13.32 **Swachh Bharat Abhiyan:** 4,21,632 NCC cadets have carried out 'Cleanliness Drive' and 'Safe Sanitation' Awareness Campaign under Swachh Bharat Abhiyaan during the year 2015.

13.33 **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 2, 29,056 saplings all over the country.

13.34 **Blood Donation:** NCC cadets have been donating blood as voluntary service whenever needed by Govt Hospitals/Red Cross. This year 21,697 NCC cadets voluntarily donated blood.

13.35 **Old Age Homes:** As in previous years, this year also cadets provided their services to old age homes.

13.36 **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. This year AIDs awareness day was celebrated on December 1, 2015. 29,921 NCC cadets from all 17 Directorates participated.

13.37 **Anti-Dowry and Anti-Female Foeticide Pledge:** NCC cadets all over the country took a pledge on Anti Dowry and Anti Female Foeticide. 73,809 NCC cadets participated in rallies and awareness campaigns on this theme.

13.38 **Pulse Polio Immunisation:** NCC cadets have also participated in numerous Polio eradication programmes launched by the Government all over the country as per National schedule. 39,330 NCC cadets actively participated in the programme.

13.39 **Anti-Leprosy Drive:** NCC cadets launched anti-leprosy drive throughout the country and are helping various voluntary/ Governments Organisations in this field.

13.40 **Cancer Awareness Programme:** 44,943 NCC cadets actively participated in Cancer Awareness Programme organized in various cities.

13.41 **Anti-Tobacco Drive:** 93,611 NCC cadets from all NCC Directorates actively participated in 'NO TOBACCO DAY' observed on May 31, 2015. On this day, all State NCC Directorates organized numerous rallies/ street shows/ plays by NCC cadets to spread awareness among masses about ill effects of Tobacco.

13.42 **Adoption of Villages/ Slum Areas:** NCC has adopted over 1170 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.

13.43 **Sports Activities at National Level:** NCC Cadets from all NCC Directorates actively participate in various sports activities at the National level as follows:

(a) **NCC National Games:** NCC National Games were held in New Delhi from October 6-18, 2015. The shooting championship as part of the NCC National Games was held at Asansol from August 13-24, 2015. A total of 2200 cadets participated in Football, Hockey, Volleyball, Badminton, Athletics, Kho-kho, Kabaddi and Shooting Competition. NCC Directorate PHHP&C was the overall champions and NCC Directorate WB &S the Runner up.

(b) **Jawahar Lal Nehru Hockey Cup Tournament:** This year NCC teams in Junior Boys, Junior Girls and Sub-Junior Boys categories participated in the prestigious Jawaharlal Nehru Hockey Tournament 2015, where they played against some of the best teams in the country and foreign teams. NCC Junior Boys (Odisha Directorate) won the

Jawahar Lal Nehru Cup Tournament for the first time in history.

(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 2015, where they played against some of the best teams in the country and foreign teams

(d) **All India GV Mavlankar Shooting Championship (AIGVMSC):** Firing being one of the core training activities of NCC, shooting discipline enjoys special place in NCC sporting activities. NCC cadets participated in the All India GV Mavalankar Shooting Competition (AIGVMSC) 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 the NCC shooting team won 6 Gold, 9 Silver and 4 Bronze medals in the event.

(e) **National Shooting Championship Competition (NSCC):** Every year NCC Shooting team participates in the prestigious National Shooting Championship Competition (NSCC). This year 45 NCC shooters participated in the event conducted from December 1-15, 2015 at New Delhi and won 2 Gold and 4 Bronze medals in the event.

(f) **International Day of Yoga:** A clarion call was made by Prime Minister of India during NCC PM's Rally on January 28, 2015 for all NCC cadets to participate in International Day of Yoga on June 21, 2015. 9,50,210 NCC cadets participated at 1767 venues pan India on June 21, 2015 and set a record. A certificate by Limca Book of Records to this effect was handed over to NCC on September 24, 2015 in the presence of Raksha Mantri.

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14

DEFENCE COOPERATION WITH FOREIGN COUNTRIES

The French Army marching contingent on Rajpath during Republic Day Celebration 2016

Defence Cooperation with friendly foreign countries is an important tool in strengthening bilateral relations. It covers activities and initiatives undertaken to build and maintain mutual trust and understanding.

14.1 Defence Cooperation with friendly foreign countries is an important tool in strengthening bilateral relations. It covers activities and initiatives undertaken by the Ministry of Defence and the Armed Forces to build and maintain mutual trust and understanding. Defence diplomacy initiatives with friendly foreign countries have been in the form of high level defence-related visits, training exchanges, Service to Service Talks, holding of joint exercises, etc.

14.2 India continued its wide-ranging support for stabilisation of the security situation in **Afghanistan**. India assisted Afghan National Army (ANA) in building its capacity through military training, medical training and medical assistance to security personnel.

14.3 India deepened its defence relations with **Australia**. The 4th Air Staff Talks were conducted in April, 2015 in Australia. The 4th Defence Policy Talks (DPT) co-chaired by Additional Secretary was held during June 24-26, 2015 in Australia. The Defence Minister of Australia visited India for talks with Raksha Mantri on September 2, 2015. Both Ministers had fruitful discussions on a range of issues of bilateral defence cooperation covering defence research, peacekeeping centres, enhanced interaction between the two Air Forces, Counter-IEDs and other areas.

14.4 Defence cooperation with **Bangladesh** was strengthened by a number of high level bilateral visits and exchanges. Interactions between the two Coast Guards were intensified after settlement of the International Maritime Boundary Line. Chief of Army Staff (COAS) reviewed POP of Bangladesh Military Academy as Chief Guest. Chief of Naval Staff paid a goodwill visit to Bangladesh to strengthen cooperation between the two Navies. General Iqbal Karim Bhuiyan, Army Chief of Bangladesh, visited India in March-April, 2015 and his successor, General Abu Belal Mohammad Sharif Huq, Chief of Army Staff, Bangladesh, visited India in September, 2015. Vice Admiral M Farid Habib, Chief of Naval Staff of Bangladesh, visited India in November, 2015. Inaugural Air Force to Air Force Staff Talks were held from February 4-6, 2015. 3rd Navy to Navy Staff Talks were held at New Delhi from May 20-22, 2015, and the 6th Army to Army Staff Talks were held at Dhaka from October 14-16, 2015.

14.5 India shares very close and friendly defence relations with **Bhutan**. Training to Bhutanese Armed Forces personnel is imparted by the Indian training institutes. Chief Operations Officer (COO), Bhutanese Army is likely to visit India in March, 2016.

14.6 India's defence relations with **Brazil,** especially cooperation between the Navies, continued to gain strength. The Joint Defence Committee (JDC) held its 4th meeting in Brazil on June 16-18, 2015 and agreed on several steps to enhance bilateral defence ties.

14.7 During Prime Minister's visit to **Canada** from April 14-16, 2015, a Statement of Intent (SoI) was concluded for bilateral cooperation in the area of defence research and development.

14.8 Defence cooperation with **China** is guided by the Annual Defence and Security Dialogue, which held its 7th Meeting in Beijing in April 2015. Other exchanges included a visit by a 15 member Young Border Officers delegation from Chengdu Military Region (MR) to India from April 23-28, 2015, visit of Mr. Liu Yuan, Political Commissar, PLA to India from April 26-27, 2015, a 6 member Military Health Delegation from PLA, led by Maj. Gen. Li Qingjie, Director General of the Health Department, PLA from May 22 to 26, 2015, visit by a 6 member delegation from National University of Defence Exchange Technology (NUDT), led by President of NUDT, from June 14-16, 2016 and a 6-member advance team for Goodwill and Arts Delegation from Chengdu MR, China, to Delhi and Kolkata from July 13-19, 2015. A 26 member strong delegation led by General Fan Changlong, Vice Chairman, Central Military Commission visited India from November 15-17, 2015. Major General Dang Encheng, Deputy Commander of Tibet MR led an 8 member delegation to India from December 7-11, 2015. Visits from India to China included visit of Northern Commander to Lanzhou MR in October 2015. A two member delegation led by a two star officer participated in the 6th Xiangshan Forum in Beijing from October 16 to 18, 2015. A Tri-Service delegation is scheduled to visit China in March, 2016.

14.9 India and **France** continue to share a robust and mutually beneficial defence relationship. Mr. Jean Yves Le Drian, Defence Minister of France, visited India in May 2015. The joint Naval Exercise VARUNA was held from April 23 to May 2, 2015 in India. Raksha Mantri and the French Defence Minister signed an MoU on purchase of Rafale aircraft in Delhi on January 26, 2016.

14.10 India shares friendly defence relations with **Germany**. German Defence Minister Dr. Ursula von der Leyen visited India from May 26-28, 2015.

14.11 India's defence relations with **Greece** were boosted by the visit of the Defence Minister of Greece Mr. Panos E. Kammenosto India from December 17-20, 2015.

14.12 India's defence cooperation with **Indonesia** continued to strengthen during the year. The 4th Army-to-Army Staff Talks were held in New Delhi in February, 2015. The 7th Navy-to-Navy Staff Talks were held in New Delhi in June, 2015. The 26th cycle of Coordinated Patrol (CORPAT) between the Navies of India and Indonesia was conducted during September – October, 2015.

14.13 Defence relations with **Israel** have been friendly. The 8th Air Staff Talks with Israel was conducted on August 11-13, 2015 in New Delhi. Commander of Israeli Air & Space Forces visited India from November 30 to December 3, 2015 on a goodwill visit. Director General of the Israeli Defence Ministry Mr. Dan Harel visited India on

February 17-18, 2016. Chief of Air Staff is scheduled to visit Israel in March, 2016.

14.14 India's defence ties with **Japan** were further deepened and diversified. RM visited Japan during March 30-31, 2015. He had fruitful discussions with Japanese leaders. A decision was taken to initiate Air Force Staff Talks. The inaugural round was held in Japan in February, 2016. The 3rd meeting of 2+2 forum with Japan, co-chaired by Defence Secretary and Foreign Secretary was held on April 6, 2015. The 4th Defence Policy Dialogue with Japan co-chaired by Defence Secretary was held on April 7, 2015. Both sides discussed a range of issues concerning bilateral defence cooperation. An India-Japan Joint Working Group on Defence Equipment and Technology Cooperation was set up in February, 2015. Joint Secretary (DIP) co-chaired the first meeting of the JWG on March 23-24, 2015 in Japan. An Agreement between the Government of the Republic of India and the Government of Republic of Japan concerning the Security Measures for the Protection of Classified Military Information was signed on December 12, 2015.

14.15 Defence relations have become an important element of India's bilateral relations with **Kazakhstan**. The 4th meeting of India-Kazakhstan Joint Working Group (JWG) on Military Technical Cooperation (MTC) was held in New Delhi on April 30, 2015. An Agreement between India and Kazakhstan on Defence and Military Technical Cooperation was signed on July 8, 2015 during the visit of Prime Minister to Kazakhstan.

14.16 India's defence relations with **Kyrgyzstan** continue to develop steadily. An Agreement on Defence Cooperation was signed on July 12, 2015 during the visit of Prime Minister to Kyrgyzstan.

14.17 Defence relations with **Malaysia** witnessed steady enhancement. IN ship Komorta participated in the Langkawi International Maritime and Aerospace Exhibition (LIMA) in March 2015. Raksha Mantri led a delegation to attend the 3rd ASEAN Defence Ministers' Meeting [ADMM]-Plus during November 3-4, 2015 in Malaysia and also held a bilateral meeting with his Malaysian counterpart.

14.18 India and **Maldives** share common maritime security concerns. In this regard, India is assisting Maldives in setting up Coastal Surveillance Radar System (CSRS). Maldivian Defence Minister Mr. Adam Shareef Umar visited India from January 18-21, 2016. The inaugural Navy Staff Talks with Maldives are scheduled to be held in March, 2016.

14.19 India and **Mauritius** share a close relationship. Prime Minister was the Chief Guest at the Mauritius National Day celebrations and commissioning ceremony of MCGS Barracuda. The MoU on Hydrography with Mauritius has been renewed till October 2020. Chief of Naval Staff visited Mauritius in January, 2015. During the visit, he inaugurated the White Shipping Data Fusion Centre, commemorated the Accord of Producer Nation status and visited the site for new Mauritius Coast Guard Dockyard. Inaugural Coast Guard Staff Talks were held in October, 2015.

14.20 Defence cooperation has been an important component of our traditionally friendly bilateral relations with **Mongolia**. A delegation led by Joint Secretary (PIC) visited

Mongolia on August 20-21, 2015 to attend the 7th India-Mongolia Joint Working Group (JWG) on Defence Cooperation.

14.21 Defence cooperation with **Myanmar** witnessed an up-swing. The 7th Regional Border Committee Meeting with Myanmar was held at Imphal (Mantripukhri) from July 6-10, 2015. Lt. Gen Mint Soe, Commander of No. 1 Special Operations Bureau of Myanmar Armed Forces visited India from June 2-5, 2015. Senior General Min Aung Hlaing, Commander-in-Chief of Defence Services of Myanmar visited India from July 26 to August 1, 2015. A Myanmar delegation visited HAL, Bangalore from November 30 to December 6, 2015. Quarter Master General (QMG) of Myanmar Army visited India from September 28 to October 2, 2015. A delegation from India visited Nay Pyi Paw, Myanmar from September 2- 4, 2015 to attend the 19th ARF Meeting of Heads of Defence Universities/ Colleges/ Institutions. Inaugural Air Force Staff Talks with Myanmar were conducted in New Delhi from July 21-23, 2015. The 4th Navy to Navy Staff Talks were held at Yangon from November 23-25, 2015. Inaugural Army Staff Talks with Myanmar were conducted in New Delhi during December 28-30, 2015. India also made delivery of emergency relief material to Myanmar in response to floods. Supplies of rice and medicines were sent by air to locations like Kalay and Mandalay in Myanmar on August 4, 2015.

14.22 India and **Nepal** share a strong defence relationship. Large number of defence personnel from Nepal avail training in various defence institutions in India. India is also regularly offering DIPR, DRDO courses to Nepal Army. General Rajendra Chhetri, Nepal Army Chief visited India in February, 2016. As per established tradition, during his visit, he was conferred the rank of 'Honorary General' of Indian Army by the President of India in a Special Investiture Ceremony.

14.23 India and **Nigeria** share friendly ties. The 3rd JDCC meeting with Nigeria was held on August 10, 2015 in New Delhi. The Indian delegation was led by Joint Secretary (PIC). Both side discussed measures to strengthen bilateral defence cooperation.

14.24 India's defence relations with **Oman** continue to grow. Chief of Air Staff visited Oman during August 16-18, 2015. A joint sailing voyage between IN Sail Training Ship "Tarangini" and Royal Navy of Oman Sail Training Ship (STS) "Shabab" took place in November-December, 2015. Defence Secretary led the Indian delegation at the 8th meeting of the India - Oman Joint Military Cooperation Committee during February 8-9, 2016 in Muscat.

14.25 India enjoys friendly defence ties with the **Republic of Korea**. RM visited RoK during April 16-18, 2015. A decision was taken to institutionalize Navy to Navy Staff Talks. 2 + 2 Dialogue co-chaired by Foreign Secretary and Defence Secretary from both sides has also been established.

14.26 Defence relations are an important pillar of our Special and Privileged Strategic Partnership with **Russia** based on mutual trust and understanding. The two countries have a robust, multi-tiered institutionalized mechanism for regular interactions for deepening longstanding defence cooperation. Raksha Mantri visited Russia from October 31 to November 2, 2015 to co-chair the 15th meeting of the India-Russia Inter-Governmental Commission on Military

Technical Cooperation (IRIGC-MTC). Raksha Rajya Mantri visited Russia from April 15-17, 2015 and addressed the Moscow International Security Conference. An Indian military contingent took part in the parade to commemorate 70th Anniversary of 'Victory Day' in Moscow in May, 2015 which was also witnessed by the President of India. Defence Secretary visited Russia on June 29, 2015 to participate in the 8th meeting of the High Level Monitoring Committee (HLMC) to review Military Technical Cooperation. Both sides conducted bilateral Army and Naval exercises in India in November, 2015 and December, 2015 respectively. The Indian armed forces participated in the Army Games held in Russia in August, 2015. Joint mechanisms to progress Armed Forces Cooperation were institutionalized in the form of the inaugural Navy Staff talks and joint Services staff talks held in India in 2015. Both countries also concluded an Inter-Governmental Agreement (IGA) on December 24, 2015 in Moscow for cooperation in the area of Helicopter Engineering to facilitate manufacture of Ka-226 T helicopters in India.

14. 27 India and **Seychelles** share a close relationship marked by high level visits, training exchanges, defence supplies, hydrography etc. Cooperation was further enhanced during Prime Minister's visit to Seychelles in March, 2015. For effective patrolling of its EEZ, India has gifted a Coast Guard Fast Interceptor Boat and other associated items to Seychelles in January, 2016. A 5 member team of Seychelles Coast Guard personnel visited India from December 2015-January 2016 for Operational Training.

14.28 Defence relations between India and **Singapore** have grown steadily during recent years. The 8th India-Singapore Defence Working Group (DWG) meeting, at Joint Secretary level, was held in New Delhi on May 6, 2015. Raksha Rajya Mantri visited Singapore to attend the 14th International Institute for Strategic Studies (IISS) Asia Security Summit – the Shangri-La Dialogue from May 29-31, 2015. Bilateral Naval Exercise (SIMBEX) was conducted off Singapore in May, 2015. Chief of Naval Staff visited Singapore in July, 2015. A Technical Agreement on 'Sharing of White Shipping Information' was concluded during the visit. The 10th India - Singapore Defence Policy Dialogue (DPD), co-chaired by Defence Secretary, was held in New Delhi on September 1, 2015. A revised Agreement on Defence Cooperation was signed in November, 2015 during the visit of Prime Minister to Singapore. The Artillery Exercise [Agni Warrior] between the Armies of the two countries was held in October-November 2015. Joint Military Training (JMT) – 2015 between the two Air Forces was held in Kalaikunda during October-November, 2015.

14.29 India and **South Africa** expanded their defence relations. The Chief of Air Staff visited South Africa in July, 2015. A new initiative has been taken with South Africa for exploring R&D technology cooperation.

14. 30 Defence relations between India and **Spain** have witnessed steady progress in recent years. The Spanish Secretary of Defence Mr. Pedro Arguelles Salaverria visited India on September 28, 2015. Both countries also held the inaugural meeting of the Joint Working Group (JWG) on defence cooperation in India on November 27, 2015.

14.31 India and Sri Lanka share close defence ties. The 3rd Annual Defence Dialogue, co-chaired by Defence Secretaries from both sides, was held in New Delhi from September 21-22, 2015. Air Marshal Gagan Pulasthi Bulathsinghala, Commander of Sri Lankan Air Force, visited India in July 2015. Chief of Naval Staff also participated in International Maritime Conference - GALLE Dialogue held from November 23-24, 2015 in Sri Lanka. Chief of the Army Staff made a goodwill visit to Sri Lanka during November 30–December 3, 2015. The 5th Navy to Navy Staff Talks were held at Colombo from September 2-4, 2015. Inaugural Coast Guard Staff Talks were held during the same month. The 6th Indian Air Force – Sri Lankan Air Force Staff Talks were held from September 15-17, 2015 at Colombo. The 5th Army to Army Staff Talks were held at New Delhi from January 20-22, 2016. A 4 member delegation from Sri Lanka visited India from May 7-10, 2015 for the Keel Laying Ceremony of the Second Offshore Patrol Vessel (OPV) being constructed at Goa Shipyard Limited (GSL). Sri Lankan Navy delegation comprising of 24 Sri Lankan trainee officers accompanied by two staff officers visited training establishments at Head Quarters Southern Naval Command (HQSNC), Kochi and Goa from June 15-24, 2015 as part of Sub Lt (NPM) Acquaintance Tour. A Training Course was conducted for 100 Sri Lankan Officers for six weeks duration (excluding journey period) at Infantry School, Mhow from July 5 to August 15, 2015. A 7 member Sri Lankan Navy Officers delegation led by Rear Admiral KKVPH De Silva visited training establishments at HQSNC and Indian Naval Workup Team (INWT) at Kochi from July 21-25, 2015. India participated in the Defence Seminar – 2015 in Colombo, Sri Lanka from September 1-2, 2015. The IAF has been providing technical assistance to SLAF in re-validation and life extension of their missiles.

14.32 Defence engagement with **Sweden** was enhanced. Swedish Defence Minister Mr. Peter Hultqvist visited India from June 9-12, 2015.

14.33 India has traditionally friendly relations with **Tanzania**. An MoU on Cooperation in the field of Hydrography was signed on June 19, 2015 in New Delhi during the visit of President of Tanzania to India.

14.34 Defence Cooperation with **Thailand** has been progressing well. Air Forces Staff Talks were held in September, 2015. The 19th cycle of Coordinated Patrol [CORPAT] between the Indian Navy [IN] and the Royal Thai Navy (RTN) was held in November, 2015. The 4th India-Thailand Defence Dialogue, co-chaired by Additional Secretary, was held in Bangkok in December, 2015. Indian armed forces participated in multilateral Exercise Cobra Gold in Thailand in February, 2016.

14. 35 The Defence relations with **Turkmenistan** were significantly expanded. An Agreement on Cooperation in the field of Defence was signed on July 11, 2015 during the visit of Hon'ble Prime Minister to Turkmenistan. Defence Minister of Turkmenistan Col. General Berdiyev visited India in February, 2016.

14.36 Expanded defence relations with **United Arab Emirates** (UAE) included visit of Chief of Air Staff to UAE during August 19-21, 2015 and the 5th Navy to Navy Staff Talks in Abu Dhabi on September 16-17, 2015.

14.37 Defence cooperation with the **United Kingdom** has grown steadily through regular exchange of high level visits, training and other professional exchanges between the Armed Forces of the two countries. Chief of Army Staff visited UK from June 7-13, 2015. Army Exercise Ajeya Warrior was held in UK from June 8-26, 2015. Exercise Cambrian Patrol was held from October 17-26, 2015. Naval Exercise Konkan was held in UK from September 5-11, 2015 and Air Exercise Indradhanush IV was held in UK from July 21-23, 2015.

14.38 Defence relationship with **USA** continued to strengthen and diversify. A new Framework Agreement for the India-US defence relationship was signed on June 3, 2015 during the visit of the US Secretary of Defence Dr. Ashton Carter. A reciprocal visit to US was made by Raksha Mantri on December 7-10, 2015. A high level MoD delegation led by Defence Secretary visited USA from November 16-19, 2015 for participation in the meetings of Defence Policy Group (DPG), Defence Procrement & Production Group (DPPG), Defence Trade Technology Initiatives (DTTI) and Senior Technology Sub Group (STSG). Air Marshal PP Reddy, CISC visited USA on September 23-25, 2015 to participate in the MCG. Chief of Air Staff visited USA in May, 2015. Army Exercise Yudh Abhyas was held in Fort Lewis, USA from September 9-23, 2015. Naval Exercise MALABAR between the Navies of India, United States and Japan was held in India from October 14-19, 2015.

14.39 Defence ties are a major element of India-**Vietnam** relations. A delegation led by Joint Secretary (Border Roads) & Secretary (Border Development Board), Ministry of Defence visited Vietnam to attend the inauguration of Information and Foreign Langauge Centre project at Telecommunication University, Nha Trang during April 5-6, 2015. Minister of National Defence of Vietnam visited India from May 23-26, 2015 and met Raksha Mantri. A Joint Vision Statement on India-Vietnam Defence Relations for the period 2015-2020, which reiterates the commitment of both sides to continue cooperation in the field of defence, and a Memorandum of Understanding (MoU) between Indian Coast Guard and Vietnam Coast Guard for the Establishment of Collaborative Relationship to Combat Transnational Crime and Develop Mutual Cooperation were signed during the visit.

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15

CEREMONIAL AND OTHER ACTIVITIES

Rajpath comes alive with the dare devil stunts of motorbike riders of Corps of Signals on Republic Day 2016

The Ministry of Defence encourages and promotes both academic and adventure activities through autonomous institutions which are provided regular financial assistance.

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; and

(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 During the year, the IDSA continues to focus on regional and global developments having a bearing on India's security and foreign policy. As India's engagement with the rest of the world has deepened, IDSA's interaction with the strategic community has also increased. IDSA has expanded its research to cover emerging areas such as climate change, energy, water security as well as cyber and space security. The Institute analysed in depth the emergence of new challenges and India's responses. Special attention was paid to defence reforms, defence diplomacy and numerous security dialogues initiated by the Government. Developments in the neighbourhood remained a priority area for IDSA scholars. A large number of books, monographs, papers were brought out during the year.

15.5 IDSA's outreach activity has expanded considerably. 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 has become a source of information on a wide range of security and defence issues for researchers, students and public alike. Social media tools have been used

extensively to enhance IDSA's reach. All IDSA publications are posted on the website and visitors are given 'Open Access' to most of the publications.

15.6 In order to give policy thrust to IDSA's research output, a conscious effort was made to enhance interaction with policy makers. A number of research projects were undertaken on behalf of various government departments.

15.7 IDSA has a large publications programme. Its flagship journal, Strategic Analysis, and the quarterly Journal of Defence Studies emerged as major sources of reference. IDSA was ranked as number 10th amongst the top 45 think tanks in China, India, Japan and Republic of Korea. 23rd amongst the best Government Affiliated Think Tanks of the world, 30th amongst best use of Media (Print or Electronic), 54thamongst top 100 think tanks, worldwide (Non-US), 102ndamongst top 150 think tanks worldwide (US and Non-US) and 21st amongst the Think Tanks to Watch out for - according to the annual "Global Go-to Think Tank Report and Policy Advice" study published by the University of Pennsylvania. These rankings may not accurately reflect the relative merit of think tanks but as the only initiative of this kind, it does provide a rough indication of the Institute's standing.

15.8 IDSA is funded by the Indian Ministry of Defence and functions autonomously. IDSA Scholars are drawn from academia, the defence forces and the civil services. The research faculty of 50 scholars including 06 Serving Officers on study leave, is organised under 13 Centres. The Institute also hosted 02 Visiting Fellows from foreign countries under its Visiting Fellowship Programme and 07 Interns under its Internship Programme during the year, which has improved outreach of the Institute as well as enhanced its visibility across the globe. 59 IDSA Scholars were invited to attend Seminars, Round Tables and Conferences outside the country during the year (till November 30, 2015).

Talk by Air Chief Marshal PVSM, AVSM, VM, ADC as part of the 50th year celebrations of IDSA

17th Asian Security Conference inaugurated by Admiral, Chief of the Naval Staff, February 11-13, 2015

International and National Conferences/Dialogues

15.9 The Institute for Defence Studies and Analyses (IDSA) hosted several International and National Conference as given below:

- 17th Asian Security Conference: (February 11-13, 2015). The Institute has been organising this conference each year since 1998. The theme for this year's conference was "Asian Security: Comprehending the Indian Approach."

- Third India- Africa Strategic Dialogue: (March 3-4, 2015) on the theme of "India-Africa: Building Synergies in Peace, Security and Development" was organized.

- The Academic Session of Delhi Dialogue VII: (March 12, 2015) on the theme of "ASEAN-India: Shaping the Post 2015 Agenda" was organised.

- 9th South Asia Conference: (November 26-27, 2015) on the theme "Culture as a Factor in Regional Cooperation in South Asia" was organized.

- The second National Conference on Internal Security (December 10, 2014) on the theme "Addressing Internal Security Challenges: Strengthening Security Force Capabilities" was held.

15.10 **Round Table Discussions:** The institute organized several round table discussion during the year, important of which are enumerated below:

- India-China Relations, China-Pakistan Relations, Maritime Silk Route (MSR), Asia-Pacific security dynamics.

- Current situation in Bahrain and the Gulf, GCC economies in the light of drop of oil prices and welfare of Indian workers in the GCC countries.

- India's Civil Nuclear Liability Law and Supplier's Concerns.

- The political, economic and security situation in Europe

- Counter terrorism and other security related issues.

- Imperatives for Cost Accounting - Defence Expenditure.

- Current Political Situation in Bangladesh.

- Current Strategic and Security Issues in the Indo-Pacific Region.

- Developments in Nepal.

- Regional Situation in South Asia and India's Foreign Policy.

- Indo-US Bilateral Military Cooperation as well as India-China Relations.

- India-China Relations, India-Japan Relations, East Asian Maritime Dynamics etc.

- Current US Perception on India-China Relations.

- NATO Thinking on the Indian Ocean, Western Approach to China, as well as India's Role in the Region.

- Outsourcing in Defence Services

- The Implications and Responses to the Iran Nuclear Deal.

- Infrastructure in the Armed Forces

- Logistics Management in the Armed Forces

- India's Maritime Strategy, Regional Security Issues, Japan's Current Security Outlook and India-Japan Relations.

- India-Africa Partnership: Priorities and Prospects

- Northeast Asia, Defence Economy, and Naval/Maritime Issues.

- Cyber Security

15.11 **Bilateral Interactions:** Bilateral Interactions undertaken by the Institute include:

- **February 4, 2015:** Dr Ricardo Soares de Oliveira, Associate Professor in Comparative Politics, Department of Politics and International Relations, University of Oxford and Dr Daniel Large, Assistant Professor, School of Public Policy, Central European University delivered a talk on ""Countdown to FOCAC 6: China-Africa Relations in Transition."
- **February 4, 2015:** Maj. Gen. (Retd) Mahmud Durrani, former National Security Advisor of Pakistan, delivered a talk on "Political and Security Situation in Pakistan."
- **February 10, 2015:** His Excellency Dr. Danesh Yazi, Deputy Minister of Foreign Affairs for Administrative and Financial Affairs, Islamic Republic of Iran delivered a talk on "Political Developments in Syria and Iraq".
- **March 10, 2015:** Dr P Saravanamuttu, the founder Executive Director of the Centre for Policy Alternatives, (CPA), Colombo, Sri Lanka delivered a talk on "Implications of Political Transition in Sri Lanka."
- **April 10, 2015:** H. E. Dr. Saud Mohammed A. Al-Sati, Ambassador of the Kingdom of Saudi Arabia to the Republic of India delivered a talk on "Latest Developments in West Asia, particularly about the Situation in Yemen".
- **April 22, 2015:** An interaction was held with Dr. Chung Min Lee, Ambassador of International Security, Republic of South Korea on "Asian Security."
- **April 28, 2015:** Amb Christian Dussey, Director, Geneva Centre for Security Policy delivered a talk at IDSA on "Challenges in Leadership and Decision Making".
- **April 29, 2015:** A bilateral interaction was held with Dasho Karma Tshiteem, Chairman of the Royal Civil Service Commission, Dasho Tashi Wangyal, eminent member in the upper house of the Parliament and Dasho Chewang Rinzin, Coordinator of the Royal Institute for Governance and Strategic Studies, Bhutan on "Cooperation between IDSA and RIGSS."
- **April 30, 2015:** Rear Admiral Bill McQuilken, Director of the U.S. Navy's Strategy and Policy Division (OPNAV N51) delivered a talk on "Developments in South China Sea and the US Position on the Issue."
- **July 31, 2015:** HE Sher Bahadur Deuba, Former PM of Nepal and Senior Leader of the Nepali Congress delivered a talk on "Political Situation in Nepal."
- **September 2, 2015:** Talk by the Australian Minister for Defence, Honourable Kevin Andrews, on 'Australia's Defence Policies and Growing Synergies with India'.
- **September 11, 2015:** Half-day seminar on India-China Relations and current regional developments with the visiting delegation from Sichuan University, Sichuan, China.
- **September 16, 2015:** Half day seminar on India-Korea Relations on 16 September (Wednesday) 2015, jointly with the Embassy of the Republic of Korea (ROK), New Delhi.

- **October 20, 2015:** Dr William A Stanton, Senior Vice-President of Global Affairs of National Tsing Hua University (NTHU), Taiwan and the former Director of the American Institute in Taiwan (AIT) delivered a talk on "The Failures of U.S. Policy Towards China".
- **October 29, 2015:** Dr Khin Zaw Win, Director, Tampadipa Institute, Myanmar delivered a talk on "The Challenge of Democracy in Myanmar".
- **November 23, 2015:** Amb Pankaj Saran, High Commissioner of India to Bangladesh spoke on "India-Bangladesh Relations: Way Forward".

MOUNTAINEERING INSTITUTE

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 and 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 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 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, 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 website of these Institutes.

15.15 The regular courses are almost uniform at all the Institutes. The regular courses conducted by the Institute and number of men and women trained in these courses from April 2014 to December 2015 are given in Table No. 15.1.

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	441	03	136	01	140	01	23	01	41
NIM	05	387	03	133	05	254	01	32	01	30
JIM & WS	07	559	01	84	29	994	01	35	-	-
NIMAS	03	65	01	18	-	-	-	-	-	-

15.16 HMI also conducted 3 special Basic Mountaineering Course for 196 person and 8 Adventure Courses for 227 persons. HMI conducted one major expedition to Mount Frey Peak with participant of 6 persons.

15.17 NIM conducted 13 special courses of Sport Climbing, Rock Climbing for various organizations and disaster training for NDRF in which 458 men and women were trained.

15.18 JIM conducted 39 Special Environmental Courses and trained 1239 men and 1055 women. JIM also conducted 2 major Expeditions to Mt Golap Kangri (6025 Meters) and Mount Stok Kangri (6135 Meters) for 72 men and 12 women.

15.19 NIMAS conducted 11 special courses in Basic. Adventure and Para Gliding and trained 386 persons. NIMAS also conducted one expedition to an unnamed peak of 5887 Meters with participation of 20 persons and one 187 km long Rafting expedition of 8 persons in East Kameng River in East Kameng District.

CEREMONIAL, HONOURS AND AWARDS

15.20 The responsibility for organising National functions like the Republic Day Parade, Beating Retreat Ceremony, Martyr's 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 2015-2016 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. A 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 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-2015 are given in Table No. 15.2.

Table No. 15.2

Award	Number of Awards	Posthumous
Kirti Chakra	02	01
Bar to Sena Medal (G)	01	-
Shaurya Chakra	10	05
Sena Medal (G)	49	05
Nao Sena Medal (G)	02	-
Vayu Sena Medal (G)	03	-

15.23 **Vijay Diwas:** Vijay Diwas was celebrated on December 16, 2015. On this occasion, the Raksha Mantri laid a wreath at the Amar Jawan Jyoti at India Gate.

15.24 **Amar Jawan Jyot i Ceremony, 2016:** The Prime Minister laid a wreath at the Amar Jawan Jyoti at India Gate in the morning of January 26, 2016. A two minute silence was observed for paying homage to those who laid down their lives in safeguarding the integrity of our nation.

15.25 **Republic Day Parade, 2016:** 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 Excellency, Mr Francois Hollande, the President of the French Republic was the Chief Guest on the occasion.

15.26 For the first time, a marching contingent and band from the country of the Chief Guest participated in the Republic Day Parade this year. In addition, various mechanised columns, marching contingent and bands of the three services, DRDO contingent, marching contingents and bands of 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, two were posthumous. Twenty three 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 fly past by Indian Air Force.

15.28 The Gallantry and distinguished service awards announced on the Republic Day are given in Table No. 15.3.

Table No. 15.3

Name of the award	Total	Posthu-mous
Gallantry Awards		
Ashoka Chakra	01	01
Kirti Chakra	04	02
Shaurya Chakra	11	04
Bar to Sena Medal/Nao Sena Medal/ Vayu Sena Medal (Gallantry)	01	-

Sena Medal/Nao Sena Medal/Vayu Sena Medal (Gallantry)	54	07
Distinguished Awards		
Param Vishisht Seva Medal	29	-
Uttam Yudh Seva Medal	05	-
Bar to Ati Vishisht Seva Medal	04	-
Ati Vishisht Seva Medal	49	-
Yudh Seva Medal	20	-
Bar to Sena Medal/ Nao Sena Medal/ Vayu Sena Medal (Devotion to duty)	03	-
Sena Medal/Nao Sena Medal/Vayu Sena Medal (Devotion to duty)	61	
Bar to Vishisht Seva Medal	05	-
Vishisht Seva Medal	118	-

15.29 **Beating Retreat Ceremony, 2016:** Beating Retreat is a centuries old military tradition practised by the troops at the time of disengaging from battle at sunset. The Beating 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, 2016, which brought down the curtain on the Republic Day festivities. This year, Indian Classical Instruments, Jazz Symphony Orchestra, the bands from Central Armed Police Force (CAPF) and State Police Bands (Delhi Police) participated in this Ceremony for the first time in addition to the traditional pipe and Drum Bands and Military Bands of the three Services. 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, 2016:** On January 30, 2016, 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, 2015 like every year throughout the country. This day is observed to remember the sacrifices made by our gallant servicemen in defending the integrity of our borders, honour the brave and express solidarity and support towards welfare of widows, children, disabled and sick ex-servicemen.

OFFFICIAL 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. There are two separate Hindi Advisory Committees constituted under the chairmanship of Raksha Mantri in the Ministry. These Committees are constituted with a view to advise the respective Department(s) of the

Ministry on matters relating to the progressive use of Hindi for official purposes. 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, 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 2015-16 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 communication 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 Committee 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. Hindi Advisory Committees 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 committee is likely to be convened soon.

15.36 **Incentive schemes for writing books in Hindi on subjects relating to defence and Award scheme for in-house journals:** Evaluation of entries received under the scheme for the block year 2011-13 is under progress. Awards under the scheme for in-house journals for the year 2007-2009 have been declared.

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 29, 2015 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 150 officers/ employees participated in the above competitions. 114 successful officers/ employees were awarded cash award/ gifts.

15.39 **Inspections of Parliamentary Committee on Official Language:** Like 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 service
(As on January 1, 2015)

Representation of Visually handicapped (VH)/ Hearing Handicapped (HH)/ Orthopedically Handicapped (OH) (As on 1.1.2015)					Number of Appointments made during the calendar year 2014											
					By Direct Recruitment				By Promotion				By Deputation			
Groups	Total Employee	VH	HH	OH	Total	VH	HH	OH	Total	VH	HH	OH	Total	VH	HH	OH
A	3964	0	1	16	667	0	1	4	625	0	0	1	4	0	0	0
B	28290	14	25	206	128	2	2	3	5491	0	2	86	4	0	0	0
C (Excluding Safai Karmchari)	204001	303	545	1233	7177	14	28	42	4175	2	10	19	3	0	0	0
C (Safai Karamchari)	10119	27	71	149	187	0	3	4	6	0	0	0	0	0	0	0
Total	**246374**	**344**	**642**	**1604**	**8159**	**16**	**34**	**53**	**10297**	**2**	**12**	**106**	**11**	**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 January 1, 2015)

Groups	Representation of Visually handicapped (VH)/ Hearing Handicapped (HH)/ Orthopedically Handicapped (OH)(As on 1.1.2015)				Number of Appointments made during the calendar year 2014											
					By Direct Recruitment				By Promotion				By Deputation			
	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	2349	2	12	23	102	0	2	1	172	0	0	0	0	0	0	0
B	23937	22	43	347	8	0	0	0	673	0	1	4	0	0	0	0
C (Excluding Safai Karmchari)	73188	153	233	1159	1877	4	11	65	2779	5	12	76	0	0	1	
C (Safai Karmchari)	347	1	0	2	3	0	0	0	0	0	0	0	0	0	0	0
Total	**99821**	**178**	**288**	**1531**	**1990**	**4**	**13**	**66**	**3624**	**5**	**13**	**80**	**0**	**0**	**1**	**0**

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 Governments, 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 accidents 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. Parapalagic Rehabilitation Centres at Mohali and Kirkee, St. Dunstan's After Care Organisation, Dehradun which are supported financially be Kendriya Sainik Board (KSB) Secretariat out of Armed Forces Flag Day Fund.

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16

ACTIVITIES OF VIGILANCE UNITS

The Vigilance Division in the Ministry of Defence initiates measures with a view to combating corruption and reviewing procedures.

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 initiates measures with a viewing to combating 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 Defence 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. Navy, Coast Guard, DRDO, BRO, CSD and DGAFMS etc., under Ministry of Defence, observed Vigilance Awareness Week from October 26 to October 31, 2015 with the theme "Preventive vigilance as a tool of good governance" and wide range of activities like debates, lectures, essay 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 9 complaints were referred by CVC, on which action was initiated. Besides this, three more complaints were received including one from CBI. Out of the above complaints, 6 were closed during the year upto January 2016. Prosecution sanction were issued against 4 officers during 2015. During the year 2015, 8 disciplinary cases of

Gp 'A'officers were finalized – 1 officer was dismissed, another was compulsorily retired, 2 officers were exonerated and penalty was imposed in 4 cases. In another case, an appeal against the penalty imposed in a disciplinary case was also decided during the year.

16.8 During the Annual Sectoral Review Meeting, 2015, taken by Chief Vigilance Commissioner (CVC) with the CVOs of Defence Sector on April 9, 2015 at Bangalore, several areas were identified for taking action. CVC stressed upon the need for expeditious disposal of disciplinary cases in the Ministry.

DEPARTMENT OF DEFENCE PRODUCTION

16.9 **Ordnance Factory Board (OFB):** As a part of preventive vigilance, all tenders above ` 10 Crore have been brought under the purview of the Integrity Pact. Works and Procurement Manuals are being updated. 60 Preventive checks, 3 Chief Technical Examiner (CTE) type checks and 213 Annual Property Return (APR) checks have been carried out during the year.

16.10 As a part of system improvement, the process of Capacity Verification for non-registered vendors in respect of Open Tenders, which is a long-drawn process, has been de-linked from the tendering process and in order to provide opportunity to the new vendors, advertisements are issued at least twice a year, projecting the procurement requirements of the factories, so that new vendors can get themselves registered after capacity verification and become eligible in the up-coming open tenders.

16.11 **Hindustan Aeronautics Limited (HAL):** The endeavour of Vigilance Department has been to be preventive and proactive through streamlining of procedures and policy interventions. To achieve this objective, various activities were undertaken i.e. 507 Routine and 162 surprise checks were conducted and 33 complaints were taken up for investigation. Disciplinary action has been initiated against 22 officials and administrative action taken against 202 officials.

16.12 Vigilance Awareness week was celebrated in HAL with the theme "Preventive Vigilance as a Tool of Good Governance" and following activities were undertaken:

(i) The fortnightly bulleting "V2" is being brought out to sensitize the employees, an a Special issue of in-house vigilance magazine "Marg Darshan" on "Participative Vigilance" was brought during the Vigilance Awareness Week.

(ii) A Video Tutorial 'TEJAS TALK' on RTI Act 2005 has been finalized and being brought out to understand the provisions of the Act.

(iii) One Individual Excellence Award was given by Institute of Public Enterprises, Hyderabad for contribution in drafting corruption risk management policy for HAL and One Excellence Award was given for work done in the case of 'Irregularities in Procurement of Sweaters'.

16.13 **Bharat Electronics Limited (BEL):** As a part of preventive vigilance, File Life cycle Management System has been implemented. 1870 regular and 614 surprise inspections were conducted during the year and CTE type intensive examination of 43 contracts was

conducted. Committees have been constituted for upgradation of Works and Procurement manuals.

16.14 Vigilance Training Programme for newly inducted Probationary Engineers and vigilance awareness programmes for various officers and non-executives were conducted. Two days training programme was conducted by Transparency International in association with BEL on "Promoting Transparency in Public Procurement and Integrity Pact". Various executives and staff of BEL completed Certificate Programme in Public Procurement course conducted by World Bank in Coordination with Vigilance Study circle, Bangaluru.

16.15 Vigilance Awareness week was observed across all the Units/ SBUs, Corporate Office BEL from October 26 to 31, 2015. As a part of celebration of Vigilance Awareness Week, the online complaint portal was activated as part of the complaint handling policy. Vigilance Excellence Award, 2015 was given to CVO/ BEL by Vigilance Study Circle, Hyderabad. 4th, 5th and 6th issue of in house vigilance Magazine 'Jagriti', was released. Book on 'Vigilance case Studies' was released.

16.16 **Garden Reach Shipbuilders and Engineers Ltd. (GRSE):** As a preventive measure regular and surprise inspections and verification of files were carried out. Annual Property Returns filed by the officers were scrutinised and regular and surprise inspections and verification of files were undertaken. Suggestions for system improvements have been made to the management.

16.17 Vigilance Awareness week was observed from October 26 to 31, 2015 and to encourage transparency in the working of the organisation, GRSE took active part in the 'Vigilance Study Circle' programme in October, 2015. Training was imparted to newly joined officers in Vigilance Department.

16.18 **Goa Shipyard limited (GSL):** The thrust during the year has been on preventive vigilance as a tool for Good Governance. A number of regular inspections and surprise checks of work orders/ purchase orders were carried out in various areas. Steps are being taken to ensure transparency through effective use of website and online vendor registration. Defunct vendors are being identified and deleted from vendor database.

16.19 Vigilance Awareness week was observed from October 26 to 31, 2015. Lecture on "Transparency in imports – as a tool for good governance" by Commissioner of Customs, Central Excise and Service Tax was attended by the executives of the Goa Shipyard during the week. Orientation, Lecture and presentation on vigilance awareness was conducted for newly inducted Management Trainees and Executives.

16.20 **Hindustan Shipyard Limited (HSL):** Vigilance Awareness week was observed from October 26 to 31, 2015. A seminar was also organized for all officers. 2 CTE type reports and 6 scrutiny reports for system improvement were prepared alongwith suggestions. Surprise checks were conducted at various departments.

16.21 **Mazagon Dock Limited (MDL):** Surprise/ Spot Checks were conducted

by Vigilance Executives and suggestion/ corrective measures were recommended to the management for systemic improvement. 2 CTE type examinations were completed.

16.22 Vigilance Awareness week 2015 was observed from October 26 to 31, 2015 and following activities were organised to spread vigilance awareness:

i) In-house Vigilance Journal 'SUCHARITA' Volume XVIII was released.

ii) A vendor's meet was arranged and a speech by eminent guest speaker Shri Edassery Sebastion, Director/ Financial Advisory of Deloitte TTI Ltd Banglore was also arranged.

iii) Slogan, Essay and poster making competition on vigilance related topics in Hindi, Marathi & English were organized. An online quiz contest on Vigilance related topics was also held for MDL employees.

16.23 **Bharat Earth Movers Limited (BEML):-** Vigilance department verified the procurement process and analysed one year's procurement and suggested measure to increase open tendering, increase coverage of contract under IP and increase e-procurement in exempted category. System improvements were recommended for online company quarter allotment, additional terms and condition for procurement to ensure quality, reconciling inventory, password protection of employees working on SAP etc.

16.24 Vigilance Awareness week-2015 with the theme 'Preventive vigilance as a tool of good Governance' was observed from October 26 to 31, 2015. Highlight of the week was the engagement with the students with the objective of ensuring that vigilance becomes a point of discussion among the youth.

16.25 **Mishra Dhatu Nigam Ltd. (MIDHANI):** As a part of Preventive Vigilance, surprise/ routine checks in sensitive areas and examination of inventory records in various departments were carried out and CTE type examination on Flourspar procurement and Job work contracts were undertaken. Procurement files were examined on regular basis to ensure transparency and fairness and 'system improvements' were suggested from time to time on various subjects.

16.26 Corruption Risk Management policy was formulated in line with Enterprise Risk Management policy. 90% of payments are made through RTGS.

16.27 Vigilance Awareness week was observed from October 26 to 31, 2015 and lectures by speakers were delivered on Vigilance in preventing corruption. Essay writing and various competitions were also organised as a part of celebration of Vigilance Awareness Week.

16.28 **Bharat Dynamics Ltd. (BDL):** As a part of preventive vigilance various activities were undertaken during the year 2015 i.e IMM and Works Manuals have been revised in tune with modern requirements and the Recruitment Manual/ Rules have also been revised. New bidders are being trained 'online' to participate in e-tendering process and automatic tender intimation email facility has been made available in e-tendering process for informing the vendors. Online Vendor Registration has been carried out

which improved the vendor base. Online System for Clearance of Bills of Contractors has been introduced for effective bill tracking by Contractors/ bidders and 99% of the total payments were made through e-Payments (RTGS/ NEFT/ e- transfers) during the year.

16.29 A Standing Committee for Transparency in Procurement especially in Proprietary items/ products has been set up.

16.30 Vigilance Awareness week was observed from October 26 to 31, 2015 with the theme of "Preventive Vigilance as a tool of Good Governance".

16.31 **Directorate General of Quality Assurance (DGQA):** As an effective tool towards the upkeep and maintenance of preventive vigilance, Surprise/ Vigilance Checks were conducted at Units/ Establishments level.

16.32 Study on 'System Improvement' was ordered on "Narrative assessment of Vendors" and "Sampling of stores during Quality Assurance" 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 in DGQA.

16.33 Vigilance Awareness week was observed from October 26 to 31, 2015 in all Units/ Establishments as well as at Headquarters' office of DGQA, Tech Directorates/ Adm Directorates to optimize the success of customer-vendor relationship.

16.34 **Directorate General of Aeronautical Quality Assurance (DGAQA):** The Inspection Notes issued by Field Establishments of DGAQA are constantly monitored at DGQA Headquarters as a proactive and preventive measures and to enhance transparency in dealing with the trade sources, a quarterly report on data collection is made available to DG/ DGQA.

16.35 As a part of vigilance awareness activities, banners with appropriate slogan were displayed and in-house talks were organised during the Vigilance Awareness Week from October 26 to 31, 2015.

16.36 **Action Taken by Department of Defence Production:** In order to increase the level of transparency in various activities of Defence PSUs and Ordnance Factory Board, 9 'Actionable Points' i.e. Inter Organisation Audit, Covering 90% contracts under Integrity Pact, Reduction in limited/ single tenders through gradual vendor development, 90% of procurements (by value) through e-procurement, Streamlining the mode of Recruitment in PSUs, Updation of all Works and Procurement manuals and Conducting CTE type inspection by the CVOs of PSUs/ OFB etc., were circulated to all the DPSUs and OFB for necessary action. The progress of these 'Actionable Points' is monitored regularly through quarterly reports.

16.37 Structured Meeting between CVOs of all DPSUs/ OFB and CVO/ DDP was held on September 21, 2015 to assess the progress made in implementation of actionable points and to discuss other Vigilance related matters.

16.38 Two days seminar and open house discussion for vigilance officers of DPSUs,

OFBs, DGQA and DGAQA was organised by DDP Vigilance in MIDHANI, Hyderabad in the year 2015

16.39 Under the punitive vigilance, following actions in respect of Group 'A' officers of OFB/ DGQA and Board of Directors Level officers of DPSUs were undertaken during the year, 2015:

Sl. No.	Action Taken	Number of Officer involved
1.	Major Penalty imposed	09
2.	Minor Penalty imposed	04
3.	Warning issued	09
4.	Major Penalty Charge Sheet issued	10
5.	Minor Penalty Charge Sheet issued	03

DEPARTMENT OF DEFENCE RESEARCH AND DEVELOPMENT

16.40 DRDO Laboratories/ Establishments are vital installations of national importance and have been contributing immensely to the defence of our nation and thus it is imperative that security of our labs is not compromised under any circumstances. In order to enhance the security of DRDO labs/ estts, stringent measures were enforced to prevent any breach of security which may lead to damage and loss of life and property. The Directorate of Vigilance and Security has taken various initiatives and disseminated security instructions and guidelines related to security of DRDO labs/estts on a regular basis.

16.41 Policy guidelines and security instructions were issued viz. Annual Security Instructions 2014, security during Republic Day and Independence Day, strengthening of security arrangements of vital installations, contractual employees, media interaction and precautions to be taken against pseudonymous telephone calls for collection of sensitive information.

16.42 In 2015, IB, Ministry of Home Affairs conducted IB inspections of DRDE – Gwalior, CVRDE – Chennai, NPOL – Kochi, DMRL – Hyderabad, DARE & ADE – Bangalore, DEAL & IRDE – Dehradun, ISSA – Delhi and PXE – Chandipur. Besides a review was also carried out to bring more labs of DRDO under ambit of IB inspection.

16.43 Security Audit was conducted of HEMRL – Pune, RCI & CHESS – Hyderabad, DIHAR – Leh, ITR – Chandipur and CMSDS – Kolkata.

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17

EMPOWERMENT AND WELFARE OF WOMEN

Women Crew onboard IN Aircraft on an Operational Mission

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.

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 of service. 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. Women Short Service Commission Officers in the Army 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 SSCOs will be eligible for consideration for grant of permanent commission alongwith Men SSCOs 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 SSCOs will be eligible alongwith male SSCOs, 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.

(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.

Women Crew onboard IN Aircraft on a Operational Mission

17.7 **Women Officers:** Women are being inducted into the Navy, as Short Service Commission (SSC) officers in the Executive (Observer, ATC, Law & Logistics), Education Branch and Engineering Branch (Naval Architecture).

17.8 **Permanent Commission to SSC Officers:** The Government of India, Ministry of Defence vide letter No.12(1)/2004-D(AG). Pt.II dated September 26, 2008 has 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).

17.9 **Vishaka and Nirbhaya Acts:** "Visakha Guidelines" and "The Sexual Harassment of Women at Workplace (Preventive, 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. The main aim is to prohibit/ eliminate any sort of harassment/ violence against women employees at workplace. Suitable Lady Officers have been nominated as the chairman of Internal Complaint Committee (ICC) cell of all units.

17.10 **Naval Wives Welfare Association (NWWA):** In order to encourage building self-confidence amongst women and to boost morale of naval ladies, a large number of activities are organised by naval wives on a voluntary basis. The Naval Wives Welfare Association (NWWA) provides an opportunity to undertake genuine welfare and educational activities through its innumerable welfare programmes. Examples of such activities include running of play schools for children, reaching out to people outside the community, running of schools for special children, care for senior citizens and patients with chronic diseases, rehabilitation of naval widows, helping in resolution of family disharmony through professional counselling and guidance, conduct of vocational training classes for women towards other skill development and economic empowerment. NWWA also provides opportunities to the naval family to develop and showcase their talents in the field of social, cultural and sports activities through vocal and instrumental music, dance, drama, health activities, yoga and organised games and sports.

Welfare Activities

17.11 **Naval Community Support System (NCSS):** The Naval Community Support System (NCSS) ensures support to the women members of the larger Naval family. NCSS acts as a link between the Service personnel and their families and is aimed to provide proactive community service by employing trained specialists, qualified and registered social workers, etc.

17.12 **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 Jan 11 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.

17.13 **Funerals Attended:** IN deputes Officer/ Sailors along with a bugler to sound last post during the funeral of Naval veterans and also to guide widows with regard to various grants, scholarship, etc. Close liaison is maintained with various Ex-Naval Welfare Organisations and Zila Sainik Board authorities to ensure timely out reach to widows in hours of crisis and early settlement of entitled benefits.

17.14 **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.

17.15 **Future issue resolution mechanism:** To facilitate easy resolution of issues that may arise in future, the following have been instituted:

(a) Directorate of Ex-Servicemen Affairs (DESA) has established a 24 x 7 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) Dissemination of important issues through Indian Navy website.

(c) Quarterly e-newsletter published by IN/ DESA.

(d) E-mail IDs for interaction with DESA over Internet.

(e) An interactive DESA Blog, which not only provides updates on latest developments, but also enables posting of queries or grievance which are resolved expeditiously.

INDIAN AIR FORCE

17.16 **Major Policy Decisions:** Government has approved induction of women into the fighter stream thereby making them eligible for induction in all branches and streams of the IAF. Women are selected as per uniform Qualitative Requirements at par with male counterparts. Further, uniform Qualitative Requirements are applied to both women and men Short Service Commissioned Officers for grant of Permanent Commission irrespective of gender. 348 women officers

IAF Women Pilot

are holding permanent commission in the IAF as on November 15, 2015.

INDIAN COAST GUARD

17.17 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 123 women officers have been inducted till date which also includes women officers as Shot 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. The service has taken proactive steps towards empowerment and welfare of Women Officers. They have been employed in combat roles which includes 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 has offered equal

opportunities to them for career progression and profiling in the service.

17.18 Recently, the service has achieved yet another milestone by employing women officers in afloat platform, towards which the first batch of women officers have qualified aptitude test in Hovercraft. The qualified officers shall shortly be commencing Phase-I training comprising of Seamanship and Navigational aspects at Coast Guard Training Centre (Kochi) followed by basic and advanced training onboard Hovercraft. This would enable them to qualify as Co-Pilot onboard a Coast Guard Hovercraft. This initiative has added yet another dimension in combat role for women officers in addition to flying duties.

DEFENCE RESEARCH DEVELOPMENT ORGANISATION

17.19 DRDO is committed to creating a healthy and safe work environment that enables employees to work without fear of prejudice, gender-bias and sexual harassment. This has resulted in many women scientists leading important defence projects of national importance as well as occupying top positions in DRDO.

17.20 Minister of Human Resource Development inaugurated a national workshop on 'Women Innovators for Excellence in Research and Science' Winners-2015 on the occasion of International Women's Day on March 9, 2015. The two day workshop was hosted by CFEES and over 200 women scientists from various DRDO labs participated in it. Women scientists of DRDO were encouraged to play a greater role in promoting girl education and bringing a change in rural lives.

DEPARTMENT OF DEFENCE PRODUCTION

17.21 **Ordnance Factory Board (OFB):** As per the Government order, O.F. Board has issued instruction for prevention of Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013 to all OFs/ Units for immediate circulation. Women employees are not deployed at odd hours duty shift and all basic amenities like proper working area, separate toilets, restrooms have been provided to women employees in all OFs/ Units. Training facilities are being provided to women employees which includes refresher course/ induction training at HRD section.

17.22 **Hindustan Aeronautics Ltd. (HAL):** The strength of women employees in HAL is 2501 as on November 30, 2015. Women employees are eligible for Maternity Leave up to 180 days. In addition to this leave, Leave without Pay is also extended on a need basis for maximum period of one year during the entire service period. Based on the guidelines received, necessary action has been taken to prevent Sexual Harassment of Women at Workplace. The Conduct and Disciplinary Appeal Rules and Certified Standing Orders have been amended in this regard. Internal Complaints Committee as per Section 4 of the Sexual Harassment of Women at Workplace (Prevention, Prohibition & Redressal) Act, 2013 is also put in place.

17.23 **Bharat Electronics Ltd.(BEL):** BEL has around 2100 women employees. As

per requirement of Sexual Harassment of Women at Workplace Act, 2013, the internal complaint committee has been constituted for receiving complaints of sexual harassment, if any, at workplace. Women employees play significant role in Trade Unions and Officers' Association to ensure their rights. 'Women in Public Sector' representatives carry out various activities to protect women's interests.

17.24 **Garden Reach Shipbuilders & Engineers Ltd (GRSE):** Out of total 2936 employees the strength of women employees in GRSE is 121 as on December 31, 2015. GRSE has partnered with Sri Sarada Math which works for the development of the women particularly those from economically backward families. GRSE has also provided computer related equipment for the vocational training.

17.25 **Goa Shipyard Ltd.(GSL):** An Internal complaints committee for prevention of sexual harassment at workplace and redressal of complaints has been constituted, with more than 50% women representative and one independent local NGO representative.

17.26 **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.

17.27 **Mazagon Dock Shipbuilders Ltd. (MDL):** As a women empowerment initiative, the following trainings were imparted to women employees during this Financial Year- Tailor made MDP program at IIM, Indore, My life: Lifestyle Management for women employees, Fire Fighting, Health and Safety, Work life balance for women employees, Self Defence for women, Stress management at work place. Under Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redress) Act, 2013, an Internal Complaint Committee (ICC) has been set up.

17.28 **BEML Ltd:** The Manpower strength of BEML Ltd as on November 30, 2015 is 8974, comprising 2358(142) Executives and 6616(158) employees; out of which 300 are women. Gender Equity and anti Discrimination Policy has been notified in order to promote gender equity by way of equal participation of women in all spheres of company's activities. Panel discussions on women health are conducted through specialist doctors. Internal complaint committee has been constituted in all offices to deal with any incidence of sexual harassment of women at workplace.

17.29 **Bharat Dynamics Ltd. (BDL):** There are 337 women employees working in BDL. Of these, 99 are executives and 238 are non-executives and constitute 10.78% of the total workforce in the Company. The Company has amended its standing Orders and CDA rules and incorporated a chapter on "Prohibition of Sexual Harassment of Women Employees at work place" which is treated as misconduct. A 'Complaints Committee' headed by a senior woman officer has also been constituted to inquire into complaints of sexual harassment. To encourage women

employees, the company accords necessary facilities for participation in the programs of women in Public Sector (WIPS).

17.30 **Mishra Dhatu Nigam Limited (MIDHANI):** The strength of women employees in MIDHANI is 67 as on December 31, 2015. MIDHANI has extended all facilities as per the statutes for the welfare of all its women employees. As a part of MIDHANI's commitment for empowerment of women, a plant for manufacture of Fasteners & Bio Medical implants at a cost of ` 2 Crore was set up.

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 remarriage 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 total 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 Product Agencies, Surplus Vehicles, Safal Booths etc. give priority to widows of ESM. War widows are exempted from payment of contribution under ECHS.

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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, the Army, the Navy and the 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 housing 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 explorat ion 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 Road Development Board and Border Road 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 Docks Limited.
5. Garden Reach Shipbuilders & Engineers Limited.
6. Goa Shipyard Limited.
7. Bharat Dynamics Limited.
8. Mishra Dhatu Nigam Limited.
9. DefenceQualityAssuranceOrganizations, 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 components for civil use.
15. Indigenisation, development and production 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; weapons platforms; military operations; surveillance; support and logistics in all likely threats 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 an d 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, 2015 ONWARDS

RAKSHA MANTRI

Shri Manohar Parrikar — From November 9, 2014 onwards

RAKSHA RAJYA MANTRI

Rao Inderjit Singh — From May 27, 2014 onwards

DEFENCE SECRETARY

Shri Radha Krishna Mathur
From May 25, 2013 to May 24, 2015

Shri G. Mohan Kumar
From May 25, 2015 onwards

SECRETARY DEFENCE PRODUCTION

Shri G. Mohan Kumar
From September 1, 2014 to May 24, 2015

Shri Ashok Kumar Gupta
From May 25, 2015 onwards

SECRETARY EX-SERVICEMEN WELFARE

Shri Prabhu Dayal Meena
From November 1, 2014 onwards

SECRETARY (DR&D)

Dr. Avinash Chander,
From May 31, 2013 to January 31, 2015

Shri Radha Krishna Mathur,
From February 1, 2015 to May 24, 2015

Shri G. Mohan Kumar
From May 25, 2015 to May 28, 2015

Dr. S. Christopher
From May 29, 2015 onwards

CHIEF OF ARMY STAFF

General Dalbir Singh
PVSM, UYSM, AVSM, VSM, ADC
From August 1, 2014 onwards

CHIEF OF NAVAL STAFF

Admiral RK Dhowan,
PVSM, AVSM, YSM, ADC
From April 17, 2014 onwards

CHIEF OF AIR STAFF

Air Chief Marshal Arup Raha,
PVSM, AVSM, VM, ADC
From January 1, 2014 onwards

SCIENTIFIC ADVISOR TO RAKSHA MANTRI

Shri G.S. Reddy
From June 5, 2015 onwards

SECRETARY DEFENCE FINANCE

Smt. Vandana Srivastava,
From November 1, 2014 to September 30, 2015

Shri S.S. Mohanty
From October 1, 2015 onwards

Summary of Important Audit Observations-Ministry of Defence

Report No. 44 of 2015

Working of the Cantonment Boards

Cantonment Boards (CBs) with the status of Municipalities, have to provide civic amenities to the personnel residing in the cantonments. During the period 2009-10 to 2013-14, none of the test checked 17CBs, except for one CB (Clement Town) had prepared and implemented Town Planning schemes, plans for economic development and social justice in their respective areas. Further, none of the CBs provided all the 24 types of services, mandated as per the Cantonments Act, to its residents and no Central Government schemes for up-liftment of the poor applicable in the CBs were implemented. The CBs were unable to ensure adequate revenue generation through taxes and non-taxes, leading to their increased dependency on Grant-in-aid from the Ministry of Defence. This was mainly due to non-revision of taxes every five years, recovery of property tax at a rate lower than the stipulated rate and non-levy of Vehicle entry Tax etc.

(Para 2.1)

Non-availability of Specialised Parachutes

Combat free Fall parachutes developed by DRDO in 2006 could not be put to production successfully even after incurring an expenditure of ` 10.75 Crore. Parachutes (Special Forces) Battalions of Indian Army are therefore without these specialised parachutes for over a decade.

(Para 2.2)

Functioning of Army Aviation Corps

Army Aviation Corps was created with the main objective of contributing to battle field success by providing guidance to the field Commanders in applying decisive combat powers. The Corps is, however, plagued with 32 per cent deficiency against its authorised fleet strength. The helicopters held are old and ageing, with 52 per cent of the fleet more than 30 years old. Low level of serviceability further reduces the effective availability of helicopters for operations to 40 per cent of the authorisation.

Despite these shortcomings, Army Aviation could not replace its fleet of Cheetah/Chetak helicopters being used for reconnaissance and observation, which are due to de-induction since 10th Plan period (2002-2007) onwards. We observed that against 18 scehmes approved in 11th and 12th Service Capital Acquisition Plan, contracts in respect of only four schemes could be concluded in nine years period, so far. Failure in meeting the targets and objectives of the acquisitions plans and tardiness in procurement action were the main reasons denying the Corps to acquire suitable replacement for the old and ageing fleet.

(Para 3.1)

Shortfall in availability of BMP vehicles

Indian Army has a shortage of 47 percent in holding of BMP vehicles. Audit found that the main reason for shortfall was the delay in supply of 389 BMPs by OFB which not only adversely affected the operational preparedness of Mechanised Forces/ Engineers but also entailed a minimum extra liability of ` 270.97 Crore due to cost escalation.

(Para 3.2)

Unwarranted procurement of Image intensifier sight for Commander of Tank T-55

Integrated Headquarters (IHQ) of Ministry of Defence (MoD), Army procured Image Intensifier Sights between February 2011 and June 2013 valuing ` 22.12 Crore for Commander of Tank T-55 whereas the tank was declared obsolescent in December 2011.

(Para 3.3)

Less deduction of Liquidated Damages

While the procedure for levy of Liquidated Damages (LD) stated that LD at reduced rates was to be levied only if there is no loss caused to the State, yet the Army Purchase Organization invoked the condition without ascertaining the facts about the loss caused and thereby extended undue benefit to the defaulting contractors. In a test case, Audit found that loss had actually occurred.

(Para 3.5)

Non-installation of Hydraulic Test Benches

Due to delay in installation/ commissioning and in creation of requisite infrastructure in the repair workshops, four out of five Hydraulic Test Benches procured for MBT Arjun at a cost of ` 2.23 Crore were lying idle since their procurement in November, 2010.

(Para 3.6)

Avoidable expenditure in procurement of Hi-Lo Beds

Indecisiveness regarding inclusion of Comprehensive Annual Maintenance Contract (CAMC) in the contract for procurement of Hi-Lo beds by the Director General Armed Forces Medical Services (DGAFMS) led to retendering, resulting in extra expenditure of ` 63 lakh in procurement of 1406 beds.

(Para 3.7)

Recoveries, savings and amendment of annual accounts at the instance of Audit

Based on our observations, the audited entities had recovered overpaid pay and allowances, sundry charges, electricity charges and cancelled works and sanctions and amendment annual accounts, having a net effect of ` 11.70 Crore.

(Para 3.8)

Loss due to excess payment and short recover of electricity charges

Due to failure on the part of the Garrison Engineers (GEs) in exercising the requisite checks and in adhering to the approved electricity tariff, an excess payment of

` 24.54 Crore was made by the GEs selected for audit. The GEs also failed to effect recovery of electricity charges worth ` 23.66 Crore from the paying consumers, including private parties, which was mainly due to short recovery of energy and fixed charges, delay in floating of bills, defective meters, etc. These lapses of excess payment and short recovery underscore the inadequacy of internal controls in Military Engineer Services.

(Para 4.1)

Inadequate monitoring of execution of a project

Inadequate monitoring of execution of work by the Engineers for Indian Military Academy (IMA). Dehradun resulted in non-completion of main building work costing ` 22.75 Crore. The delay of five years had not only deprived the Gentlemen cadets of proper training with modern facilities but also held up the other training project valuing ` 2.50 Crore.

(Para 4.2)

Non-utilization of Assets

Missiles storage shed constructed in August 2008 at a cost of ` 2.29 Crore could not be utilised for the purpose for want of Air Conditioning System. CESZ failed to conclude the contract for air conditioning, despite the same being approved in the sanction along with the building. Non availability of the sheds affected the drawal plan of the missiles, as the missiles were being held at another location at a distance of 110 km, thereby impacting the operational efficiency of the users.

(Para 4.3)

Blockage of government money due to conclusion of contracts without availability of site

Chief Engineer, Jabalpur Zone, Jabalpur concluded contracts without availability of clear site for construction of Baffle Range. This was not only in contravention of the codal provisions but also resulted in payment of ` 1.68 Crore to the contractor. Case has now been initiated for closure of the work.

(Para 4.4)

Infructuous expenditure due to procurement of substandard pipes

Procurement of defective pipes by Chief Engineer, Jaipur Zone (CEJZ) led to execution of substandard work. As a result fire fighting infrastructure created at an Ammunition Depot at a cost of ` 2.33 Crore had to be abandoned rendering entire expenditure infructuous.

(Para 4.5)

Avoidable expenditure due to acceptance of contract at higher rates

Director General Border Roads could not accord approval to lowest tender due to delay in concurrence by the Integrated Financial Adviser (IFA) within the validity period. The contract was concluded at a higher rate after third call which resulted in extra expenditure of ` 1.89 Crore.

(Para 5.1)

Under Recovery of Service Tax from the Contractors

Service Tax was not recovered as per the provisions of J&K State Government Act on the gross value of works in five contracts concluded by the Chief Engineer (Project) Vijayak. This resulted in under recovery of `1.06 Crore on account of service tax from the contractor.

(Para 5.2)

Delay in procurement of Water Truck resulted in extra expenditure

The delay in decision making by Director General Border Roads (DGBR) to select the type of trucks to be procured, led to extra expenditure of ` 81 lakh on account of escalation of rates.

(Para 5.3)

Project Management in Terminal Ballistics Research Laboratory Chandigarh

Out of 28 projects selected for audit, 24 projects including two staff and 22 R&D projects were completed by TBRI. We however observed that against the two staff projects, parameters as per qualitative requirements of Army were not completely achieved. Out of the remaining 22 completed R&D projects, success against the prescribed objectives, in qualitative and quantitative terms was achieved only in 10 projects. These projects were however still to be translated into deliverables. In the remaining 12 projects, the objectives were only partly achieved. In spite of monitoring at various levels through Executive Committee, Project Monitoring Committee, 58 per cent projects got delayed mainly due to non-materialisation of supply order.

(Para 6.1)

Production of Weapon Manufacturing Factories

Audit covered the performance of six weapons manufacturing Factories for 2011-12 to 2013-14, on 25 strategic weapon items that together accounted for 79 per cent of total cost of production of 68 weapon items in the product line of these factories.

Meeting the requirements of Indenters

Army's Roll-on-Plan projecting its requirements for 2011-12 to 2015-16, was to aid the Board short term planning. However, indents received from the Army were not matching with the Army's Roll-on-Plan. Ministry of Home Affairs, though projected a Roll-on-plan in 2010, its requirements were largely reduced in the annual target fixation meetings.

The Board faced capacity constraints in 68 per cent of the items and hence, fixed lower targets than the Army's requirements for most of the items. The Board provided original target to the Factories in December/ November of the previous year, giving only three months for advance planning by the Factories against six months' time required for the procurement of input materials. Revision of these targets mid-year also disrupted the production. The Factories achieved the targets by 80 per cent and above for eight to 16 items during 2011-12 to 2013-14. But for five to 10 items, the achievement was less than 60 per cent. Total value of shortfall

in issue of the selected weapons against the revised targets stood at ` 1479 Crore during 2011-12 to 2013-14. Delays in receipt of input stores are the predominant cause for slippages across the Factories.

Marshalling resources for production

Delay in procurement of stores impacted the factories in achieving the production targets. Three out of the six factories placed 60 to 70 per cent of their supply orders in 2011-12 to 2013-14, within five months of identifying the requirements of stores. The remaining factories could meet the timelines in only 3 to 52 per cent of the supply orders. Compounding the inefficiencies in procurement from trade sources was the inability of sister factory in meeting the requirements for forgings for manufacture of barrels for high calibre weapons at Field Gun Factory Kanpur. The factories could not complete the quality control of stores within prescribed 15 days time in 40 to 63 per cent.

Quality Control and Quality Assurance

Quality problems besiege the factories with impact on cost, achievement of targets and above all, the reputation of the Board and its products. The incidence of " Return for Rectification" and rejection declared by senior Quality Assurance Establishment (SQAE) were high on certain products like 5.56 mm rifle, 7.62 mm MAG, 30 mm cannon and spare barrel T-90. The recurrence of defects previously pointed out by the SQAE in its Quality Inspection Notes indicates inadequate attention to these Notes. Defects such as variations in gauge dimensions to be covered in the inspections by the Factory Quality Control section, remained undetected and were raised at subsequent stages by SQAE. The users, the Army noted the erosion of trust infield units because of weapon defects.

Financial Management

The practice of fixing issue price for products in the beginning of the year based on the trends in the past three years could have worked in a set-up in which cost control was effective and fluctuations, especially in overheads were controlled. This was not, however, the case in these factories, which operated on high overheads, particularly, the fixed overheads. The apportionment of the overheads over products was irrational, overloading it on some products, making them uneconomical. Ordnance factories are generally focused on meeting the demand placed on them without due regard to cost control and cost reduction. The availability of assured funds with the Armed Forces helped them to accept the products from the Board regardless of the high issue prices.

Planning for future

The Board prepared a perspective Plan 2007-12 to provide the armed forces with "timely supply of state-of-the-art technology with greater value for money". The dreams of the Perspective Plan could not be translated into reality, with implementation marred by delays in development of the new items.

Even as the Board did not prepare a plan for the subsequent period, the environment has changed substantially. The Army prepared the Long Term Integrated Perspective Plan (LTIPP) covering a period of 15 years, to which the Board was yet to formulate a plan to position itself as an important player.

Small Arms Factories were facing multiple challenges like declining demand from indentors and quality problems; lacklustre response from clients for its new products; and delays in projects for new generation carbines. The traditional weaponry in the high calibre range 81 mm Mortar, 05 mm LFG is facing a downturn. Beside, delayed indigenisation and continued reliance on imports of certain assemblies posed a challenge to the factories in meeting the demand.

(Para 7.2)

Production of Chemical manufacturing factories

The Chemical Group of Factories is a sub-group under the operating group 'Ammunition & Explosives (A&E)'. This group accounted for 35 per cent of the total cost of production during 2011-12 to 2013-14. Four chemical producing Factories, with an average annual cost of production of ` 755 Crore, during 2011-12 to 2013-14 contributed to around five per cent of the cost of the production of the Ordnance Factory Board.

Meeting the requirement of indenters

Mid-year enhancement of targets by the Board to Factories covering majority of products did not, in most cases, result in target achievement as the factories were unable to meet even the original targets.

The Chemical Group of Factories is required to meet the production targets by January each year, a commitment the Factories were unable to meet. This impacted the production schedules of the ammunition filling factories.

The irregular practice of preparing advance issue vouchers for claiming credit without actual physical issue of products to the indenters persisted at High Explosive Factory Kirkee, Ordinance Factory Bhandara and Ordnance Factory Itarsi.

The internal controls in the Board to monitor production against targets were routing and hence their effectiveness diminished.

Marshalling resources for production

The Factories could not achieve compliance with the timeframe prescribed by the Board on placing supply orders in one-third of the procurements. Further, if the lead time for delivery of stores were to be factored, procurement would consume most of the production year. Due to the delays in procurement, the factories could not maintain even flow of production, with productions peaking in the fag end of the year. The labour productivity reported by the Factories was high and did not correlate with the performance against targets.

Quality Control and Quality Assurance

There were rejections in quality control and inordinate time was taken in proof establishment, causing cascading effect on achievement against targets.

Absence of dedicated proof range at Factories caused delay in conduct of dynamic proof; a project sanctioned in December 2008 was abandoned and alternatives have not come to fruition.

Financial Management

The Factories ran on high overheads that inflated the cost of production. The practice of fixing issue price for products in the beginning of the year based on the trends in the past three years could have worked in a set-up in

which cost control was effective to closely monitor abnormal fluctuations in cost. This was not however the case in the factories with the two controls: the shop Budget Committee and the Quarterly Financial Review, being inadequate interventions suffering from structural deficiencies.

Ordnance Factories being sole production unit for the armed forces are generally focused on meeting the demand placed on them without due regard for the considerations of cost control and reduction.

Environmental Issues

Factories did not identify the specific environmental risks or prepare a perspective plan for progressive risk mitigation measures. The investment of funds on environmental measures was low in all the factories.

Large number of pending recommendations in energy audit indicated the future potential savings that will require investment of funds.

The general trend of the accidents, especially in Ordnance Factory, Itarsi indicated a gap in safety training of the staff.

(Para 7.3)

Loss of ` 1.37 Crore due to non-fulfilment of contractual obligation against export orders.

Ordnance Factory Board delayed the delivery of the Kavach system against an export order due to slippages in development of the Kavach system and non-supply of Fire Control System (part of the Kavach) by an Indian firm. Consequently, the foreign firm deducted penalty of ` 1.37 Crore from the bills of the Board.

(Para 7.4)

Non-utilization of feeder system

A new substation installed by Rifle Factory Ishapore (RFI) at a cost of ` 4.09 Crore in June 2006 remained unproductive owing to RFI's failure to procure and install switchgears for it. (April 2015).

(Para 7.6)

Procurement and Inventory Management – Bharat Earth Movers Ltd.

One of the many factors contributing to decrease in profits was high inventory levels impacting on the working capital. Vendore negotiations resorted to by the Company were in deviation to the Purchase manual and CVC guidelines. The amount of Bank Guarantees obtained for advances paid was not in accordance with the CVC guidelines. Documentation of all the activities relating to procurement was inadequate. Vendore management was not fool proof due to non-availability of data regarding all the tenders in the system. Vendor list contained duplicates indicating lack of sufficient controls in SAP. Advances remained unadjusted and also could not be monitored due to inclusion of payments made against proforma invoices, ad-hoc payments against pending POs, etc. under advances. Stores manual was not updated for last 23 years. Due to inadequate security features, SRM system of the Company lacked confidence of foreign vendors. No integration of data between SAP and SRM was provided.

(Para 8.1)

Blocking of funds due to accumulation of Inventory-` 16.14 Crore

Continued procurement of raw materials by M/s BEML Limited when the new technology was yet to be proven and production of dumper without matching shovel resulted in blocking of inventory valued ` 16.14 Crore.

(Para 8.3)

Report No. 51 of 2015

EXECUTIVE SUMMARY

1. Why did we do this performance audit

Government of India, Ministry of Defence (MoD), in December, 2002 sanctioned a health care scheme namely "Ex-servicemen Contributory Health Scheme (ECHS)" to cater for Medicare of all ex-servicemen (ESM) in receipt of pension, including disability and family pensioners, as also their dependents, to include wife/husband, legitimate children and wholly dependent parents.

The total strength of the ex-servicemen and their dependents across the country as of April 2015 was ` 47.24 lakh. The Scheme aims to provide healthcare on cashless basis to all beneficiaries as applicable in Central Government Health Scheme (CGHS) through a network of ECHS Polyclinics, Service hospital and private empanelled/ Government hospitals spread across the country. The scheme came into effect from April 1, 2003.

2. What does this performance audit cover

We took up the performance audit of the Scheme for the period from 2012-13 to 2014-15 to obtain reasonable assurance that:

- The ECHS was able to fulfil its mandated aims and objectives;
- The scheme was being run efficiently and adequate manpower, infrastructure and equipment were available with the ECHS as per authorisation.
- The referral mechanism in place was adequate to ensure that inflated bills/ unauthorised payments were not made to empanelled hospitals;
- Provisioning and issue of medicines to polyclinics are made as per requirement.
- The online bill processing by the Bill Processing Agency was effective, efficient and the integrity of the data of the Bill processing system was ensured.

3. Key findings

Irregularity in agreement for smart cards

In contravention of the laid down provisions for the renewal/ repeat orders, Central Organisation, ECHS renewed the agreement for supply of smart cards for the ECHS beneficiaries for a period of five years, with the same firm with increased cost for which no sanction of the CFA was produced to Audit. No evidence was found with the Central Organisation to corroborate that the trend of Market price had been verified before renewal of the agreement.

(Para 2.1.1)

Issue of ECHS Smart Cards to beneficiaries on chargeable basis

One-time contribution at the rates prescribed for CGHS pensioners was to be recovered from retiring service personnel to become member. No other charges were specified by the MoD to be recovered from retiring service personnel under the Scheme. Against spirit of this, the entire cost of smart cards was charged from the beneficiaries in addition to membership fees without the approval of the MoD.

(Para 2.1.2)

Multiple enrolments of beneficiaries under ECHS

Comparison of data maintained by ECHS and M/S SITL, disclosure that 7,431 cards were stated to be issued by ECHS in excess of total cards produced by M/s SITL resulting in extra payment of ` 6.69 lakh to the firm by ECHS.

(Para 2.1.3)

Short Supply of medicines to the polyclinics

The percentage of medicines not issued (NA) by the Armed Forces Medical Stores Depot (AFMSD) Mumbai against the indents of dependent polyclinics ranged from 63 to 76 per cent, whereas in case of AFMSD Delhi Cantt., the percentage of NA medicines ranged from 30 to 45 per cent. Thus, supply of medicines by the two AFMSDs to their dependent polyclinics was inadequate and led to huge deficiency of medicines in the polyclinics.

(Para 2.3.4)

Non disposal of life expired medicines/ drugs

As per guidelines issued by the Director General Armed Forces Medical Services, the vendor is liable to replace medicines lying unconsumed, if informed three months before date of expiry of shelf life of the medicine. However, AFMSD Delhi Cantt, and Polyclinic Lodhi road were holding life expired medicines worth ` 73.44 lakh without its replacement/ disposal, thus defeating the very purpose of its procurement and consequential loss to the State.

(Para 2.3.5)

Diversion of ECHS Funds/ Medical Stores for service personnel by Service Hospitals

Government policy on allotment/ expenditure of funds meant for ECHS provides that medical stores procured for ECHS should be accounted for separately and utilised for the benefit of members of ECHS. However, we noticed at Army Hospital Research & Referral (AHRR) Delhi Cantt. that separate accounting of medicine/ drugs for ECHS beneficiaries had not been done and the funds/ stores meant for the ECHS amounting to ` 40.78 Crore diverted/ utilised for treatment of regular services personnel.

(Para 2.3.9)

Shortage/ Deployment of Manpower with polyclinics

Against authorisation of 6,800 contractual manpower for polyclinics all over India, only 5,353 persons were in position as on December 31, 2014. Thus, there was a deficiency of 21 per cent of the manpower with the PCs, adversely affecting the proper

Medicare of the beneficiaries. Despite this the manpower employed and meant for PCs was irregularly being posted and utilised at Central Organisation and Regional Centres at Delhi.

(Para 2.4.2 & 2.4.3)

Deficiencies in raising of Emergency Information Report (EIR) by empanelled hospitals

In emergencies and life threatening conditions, the patients are permitted to be admitted to nearest empanelled hospital. In such circumstances the empanelled hospital/ facility is required to informed the nearest polyclinic, within a period of 48 hours, regarding the particulars of patient and the nature of admission. We observed that empanelled hospitals were not following the above timeline in case of admission of beneficiary in emergency; and the EIR was delayed between three to 584 days which rendered the provision of emergency referral by nearest polyclinic redundant and led to issue off take EIRs in some cases with a scope to private hospitals to manipulate their bills.

(Para 2.5.3)

Raising of claims by two empanelled hospitals for the same patient during the overlapping period

Analysis of the claims data revealed that claims had been preferred by an empanelled hospital in respect of beneficiaries for the period under which that beneficiary was admitted for treatment in other empanelled hospital as indoor patient. There were 64 such claims amounting ` 42.67 lakh which had also been approved and paid. The raising and payment of such claims in this manner revealed the absence of validation checks in the system for online bill processing by BPA.

(Para 2.5.4)

Non-invoking of penal clause of MoA against defaulting hospitals

Despite specific mention in the MoA to provide cashless facility to the beneficiaries and not to indulge in unethical practices, the empanelled hospitals were violating the provisions, such as, over-charging from the ECHS beneficiaries, preferring claims for items already included in the package rates, refusal of cashless treatment, etc. However, no penal action had been initiated against defaulting hospitals.

(Para 2.5.5)

Irregular payment towards unaccounted bills of empanelled hospitals

Unaccounted 4,986 manual bills of empanelled hospitals amounting to ` 23.61 Crore were paid irregularly by SHQ (ECHS Cell) Delhi Cantt. We observed the following cases of double payments and also the absence of control in accounting which substantiates the audit finding:

22 bills (same number) amounting to ` 8.20 lakh, of empanelled hospitals, were admitted and paid twice by SHQ Delhi Cantt., through 44 paid vouchers amounting to ` 16.40 lakh, which resulted in double payment of ` 8.20 lakh.

Empanelled hospitals raised 123 duplicate bills in respect of patients where the name, referral number, nature of ailment, period

of treatment, amount claimed etc., were the same. The SHQ Delhi Cantt. Failed to detect the duplicate bills and paid additional amount of ` 23.18 lakh.

No bank reconciliation statements were prepared and submitted to the PCDA, WC Chanidgarh by Station HQ Delhi Cantt.

(Para 2.6.1.1)

Overpayment due to non-adherence to MoA

Test check revealed overpayment of ` 3.51 Crore to the empanelled hospitals on account of inflated bills in excess of authorized package rates (` 1.92 Crore); non reduction of 10 per cent package rate for treatment in General ward (` 11.96 lakh); charging of higher accommodation rate from ECHS beneficiaries as compared to non-ECHS patients (` 26.78 lakh) higher procedure rates for Total Knee Replacements (Bilateral) as compared to non ECHS patients in one empanelled hospital alone (` 99.49 lakh) and non availing of 10 per cent rebate on oncology medicines by ECHS (` 20.55 lakh).

(Para 2.6.1.2)

Provision for discount on medicines in MoA

As per the terms of the MoA between the ECHS and empanelled hospitals, the ECHS had paid cost of medicines supplied to in-patient beneficiaries at MRP, which was considerably higher than the local market rate. It was proved form the facts that polyclinics were procuring medicines at discount on MRP which ranged upto 35 per cent. Further, payment of cost of an injection to empanelled hospitals under RC Jalandhar at higher rates than the procurement cost of the same injection during the same period by MH Jalandhar resulted in extra expenditure of ` 89.53 lakh.

Apparently, there is sufficient scope of inclusion of provision in the MoA with empanelled hospitals for obtaining discount over MRP in medicines being issuing by them to the ECHS beneficiaries, as cost of medicines formed 32 per cent of the medical treatment related payments made to empanelled hospitals (` 540 Crore out of ` 1,702 Crores).

(Para 2.6.1.3)

Non-adherence of the time limit for payment of bills by BPA/ CFA resulting in non availing of discount

In MoD's sanction for online bill processing a provision was made for obtaining discount of two per cent of amount payable to empanelled hospital, if the payments were made within 10 working days of receiving hard copy of bill or settlement of all queries by the hospital, whichever was later. We observed that stipulated time limit was not being adhered to in the bills processed by BPA and CFA. Due to taking more than 10 working days in processing and payment of bills individually as well as commonly by BPA, CFA and paying Agency, the discount of two per cent amount to ` 34.10 Crore could not be availed.

(Para 2.6.2.3)

Approval of payment to empanelled hospital by CFA (ECHS) after rejection of the same by BPA

BPA had recommended 1,088 claims amounting to ` 1.16 Crore for rejection.

This was on account of claims being without valid referral, claims without mandatory documents, separate claims for items forming part of package, claims without pre and post procedure images, hospital not being empanelled for treatment and claims without necessary approval of SEMO. However, CFA (ECHS) had passed such claims against the BPA's recommendation without justification.

(Para 2.6.2.4)

Incorrect room type entitlement in case of indoor treatment for ECHS beneficiaries

Payment of room charges at higher rates that entitlement of ECHS beneficiaries to the empanelled hospitals resulted in an over payment of ` 90.43 lakh in 1,487 claims to the empanelled hospitals.

(Para 2.6.2.7)

Non-development of audit module for post audit and inadequate post audit by PCsDA

CGDA, while concurring the case file of online bill processing by BPA, stated that BPA should agree for online concurrent audit along with system audit. The online bill processing commenced initially in five RCs from April 2012 was extended to all the 28 RCs from April 2015. However, the online post audit module has been implemented partially in only one PCDA. Further, the PCsDA/ CsDA failed to carry out the post audit of the bills as per the laid down financial procedure.

(Para 2.6.2.10 & 2.6.2.11)

Report No. 19 of 2015
EXECUTIVE SUMMARY

Ready availability of ammunition plays a critical role in overall preparedness of the Army. Director General Ordnance Service (DGOS) at Army Headquarters (AHQ) is responsible for overall management of ammunition in the Army and carries out annual provisioning and procurement. Most of the ammunition for the Army is procured form Ordnance Factory Board (OFB). To meet this requirement, ten factories of Ammunition and Explosives group under OFB are engaed in production of ammunition and explosive. Balance requirement of ammunition is met from trade and ex-import.

Why did we do this Review?

The review was undertaken to ascertain the effectiveness of procedures and practices and built-in controls relating to management of the ammunition in the Army in terms of operational preparedness and resource utilization.

In order to review the existing systems, which included implementation of existing policies on ammunition management, stocking policies, implication of short falls in production/ procurement and import, storage and distribution problems and disposal of unserviceable/obsolete ammunition. Review of related records at AHQ. Directorate General of Quality Assurance (DGQA) and OFB was carried out for the year 2008-2009 to 2012-13.

KEY FINDINGS

1. Shortage of ammunition

In disregard of the War Wastage Reserve scale of 40(1) days, based on which Annual

Provisioning of ammunition was carried out by DGOS, indent for procurement of ammunition by AHQ was placed on the basis of 'Bottom Line'or 'Minimum Acceptable Risk Level (MARL) requirements which averaged to 20(1) days. As a result, the policy for the size of national stockpile was not implemented by the agencies responsible, citing the reasons of budgetary constraints, and inadequate production capacity with OFB. Stocking of ammunition even at MARL was not ensured, as availability of ammunition as on March, 2013 was below the MARL in respect of 125 out of a total 170 types of ammunition (74 per cent). We found that availability has been dwindling over the years as types of critical ammunition (available for less than 10 days (1) had increased from 15 per cent in March 2009 to 50 per cent in March 2013. The percentage of critical ammunition in High calibre ranged up to 84 per cent during the five years period of audit. The critical shortage impacted the operational preparedness and training regimen of the Army.

(Chapter-II)

2. Non fructification of procurement orders place in OFB

OFB is the main source for supply of ammunition to the Indian Army. In order to build up ammunition stock level up to MARL and to provide enough lead time to OFB for procurement of raw material and streamlining the production, Ministry of Defence (Ministry) placed a five year Roll on Indent on OFB in January, 2010. Even though the ammunition requirement covered under Roll on Indent had been worked out in consultation with OFB and the corresponding annual budgetary requirements accepted, in principle, by the Ministry at the time of approval of the Roll on Indent, the projection of the requirement of fund by OFB was much lesser vis-à-vis the targets fixed. It was therefore, a foregone conclusion that the OFB would fail to supply the targeted quantity. Despite the acceptance of targets for supply of ammunition covered under the first Roll on Indent, the OFB failed to supply the targeted quantity, with shortfalls ranging up to 73 per cent of the total types of ammunition.

(Chapter-III & IV)

3. Delay in finalization of imports

Army imports ammunition through capital and revenue route. Import, as an alternate source of procurement, provide to be unreasonably slow as no procurement of ammunition took place against the nine items initiated for procurement through capital route during the period 2008-2013 due to single vendor situation, complexities in TOT, delay in finalization of GSQR, etc. In case of revenue procurements also, the success rate of fructification of contracts was as low as 20 per cent. Thus, due to delay in finalization of import contracts, the built-up of ammunition has been badly hampered.

(Chapter-III)

4. Deficiencies in Quality Control and Quality Assurance systems

During manufacturing process, the role of DGQA is to carryout Final Acceptance inspection for which limited tests on sampling basis are carried out by SQAE. The concerned Ordnance Factories are required to carry out 100 per cent checks for the quality of stores being manufactured by

them, which include check of input material, inter-stage and final product. Ineffective quality controls by the Ordnance Factories led to rejections of finished products at Quality Assurance stage. QA was returning cases for rectification (RFR) which was not in its mandate. Even the products accepted by QA were not found up to the mark and due to persistent quality problems, ammunition worth ` 1,618 Crore was lying as rejected in depots. Ammunition worth ` 814 Crore was declared unserviceable within shelf life by the depots due to poor quality.

(Chapter-V)

5. Inadequacies in supply chain management and depot activities

When any ammunition meets an accident, Army impose ban on use of that particular lot of ammunition. Such ammunition is kept segregated till its further sentencing. We also observed that ammunition worth ` 3,578 Crore were lying in segregated condition awaiting sentencing and ammunition worth ` 2,109 Crore was lying in Repairable Major condition awaiting repairs.

The movement of ammunition within various echelons in army suffered from inadequacies such as delays in issue of ammunition. Non-accountable of ammunition by depots, transportation of ammunition by other than specified explosive vans etc. Further, the depots were functioning with risk of fire accident, as the fire fighting equipment were not held as per requirement/ authorisation.

On line connectivity among AHQ, depots and user units to enhance visibility of assets, speedy issue and receipt and effective overall ammunition management through computerization have eluded the Army as the computerization project was delayed by more than 10 years.

(Chapter-VI)

Summary of Important Audit Observation-Report of the Comptroller and Auditor General of India, Union Government, Defence Services (Air Force) No.17 of 2015 laid in Parliament on May 8, 2015

- ADA's decision to advance building of two prototypes from Full Scale Engineering Development (FSED) Phase-II to FSED Phase-I on the ground of accelerating the development process of LCA, failed to yield the desired results as the FSED phase I was closed in March 2004 involving a delay of six years and without completing all the activities which were carried forward to FSED Phase II. More Importantly, this decision of ADA rendered the prototypes deficient of critical on board systems (Multi-Mode Radar, Self-Protection Jammer, Radar Warning Receiver) and led to ADA using the Limited Series Production aircraft (meant for IAF) use) towards flight testing/evaluation of these critical on board systems, in contravention to the commitment given to the GoI while obtaining sanction(November 2001) for building of these aircraft.

(Para 2.1)

- LCA Mark-I, which achieved Initial Operational Clearance (December 2013) has significant shortfalls (53 permanent waivers/ concessions) in meeting the ASR as a result of which, it will have reduced operational

capabilities and reduced survivability, thereby limiting its operational employability when inducted into IAF squadrons. Shortcomings in LCA Mark I (increased weight, reduced internal fuel capacity, non-compliance of fuel system protection, pilot protection from front, reduced speed) were expected to be overcome by development of LCA Mark-II, an aircraft with lower weight and a higher thrust engine which is expected to meet the ASR, had been taken up by ADA in November 2009 and is scheduled for completion by December, 2018.

(Para 2.3)

- IAF would be constrained to induct fighter LCA without availability of trainer LCA, adversely impacting pilot training. Production of trainer aircraft at HAL was delayed as the trainer LCA had not achieved IOC/ FOC. As regards flight training simulator, IAF was using an upgraded Full Mission Simulator (FMS) at ADE for pilot training, pending supply of a FMS by HAL at LCA operating base.

(Para 2.3.1)

- Addition of new weapons by Air HQ for operational edge of LCA (March 1997, December 2009) necessitating design changes on the aircraft, coupled with delayed specifying (December 2009) of integrating R-73 E missile with Multi-Mode Radar/ Helmet Mounted Display and Sight and delayed identification (December 2009) of Beyond Visual Range Missiles also contributed to the delays in achieving IOC/ FOC by L.C.A.

(Para 2.3.2, 2.3.3)

- LCA Mark I is deficient in Electronic Warfare capability as specified by IAF, as the Self Protection Jammer could not be fitted on the aircraft due to space constraints and the Radar Warning Receiver/Counter Measure Dispensing System fitted on the aircraft are having performance issues, which are yet to be overcome (January 2015) .

(Para 2.3.4)

- LCA programme is being monitored by General Body, Governing Body, involving the representation of MoD, Ministry of Finance at the highest level, various committees at ADA/ HAL, Empowered Committee chaired by Chief of Air Staff. In spite of this, delays in completion of work packages which affected the LCA programme schedules, indicates that coordination of efforts at various levels and monitoring of the programme by all the agencies involved, has not been as envisaged.

(Para 2.4)

- Need for a Liaison Group between Air HQ and ADA to ensure closer interaction between the design team and the user for better appreciation of mutual perception, had been recommended by the LCA PDP Review Committee as early as in 1989. However, no such liaison group was formed and active user (Air HQ) participation in the LCA Programme started only after November 2006, which also impacted the LCA development.

(Para 2.5)

- Government of India had emphasized (June 1993) on increasing the indigenous

content of LCA while sanctioning FSED in phased manner, but ADA did not make any roadmap for indigenization during LCA development. As a result, indigenous content of LCA estimated by ADA as 70 per cent actually worked out to about 35 per cent (January 2015).

(Para 3.1)

- LCA systems such as Kaveri engine, Multi-Mode Radar, Radome, Multi Functional Display System and Flight Control System Actuators taken up for indigenous development could not be developed successfully, resulting in LCA's continued dependency on import of these systems. Development of Jet Fuel Starter, though achieved indigenously, had performance issues which are yet to be resolved (January 2015).

(Para 3.1.1)

- Prototype version (PV) and Limited Series Production (LSP) of LCA built by HAL had low serviceability due to delay in snags analysis, slow recovery of aircraft from rectification, shortage of critical LRUs at flight hangar, aircraft being used as test rigs, large number of unproductive sorties etc. which impacted availability of aircraft for flight testing and contributed to delays in development of LCA.

(Para 4.2.2)

- The manufacturing facilities crated at HAL presently cater for production of only four aircraft per annum against the envisaged requirement of eight aircraft per annum due to delays in procuring plant and machinery, tools and jigs and also construction of production hangars, which would further impact production of LCA and induction into IAF squadrons.

(Para 4.3)

- Repair and Overhaul (ROH) facility for LCA, as specified in the ASR has not been created fully at HAL. Out of the 344 Line Replaceable Units of LCA, 90 LRUs were considered non-repairable. Of the remaining 254 LRUs while ROH facilities in respect of 185 LRUs were available, ROH facilities in respect of 185 LRUs were available, ROH facilities were yet to be established for 69 LRUs (January 2015).

(Para 4.4)

- Design, development and productionisation of LCA through concurrent engineering did not compress the development time as envisaged in the FSED Phase-II sanction (November 2001) since LSP aircraft were built in a phased manner with specific capabilities for the purpose of flight testing/ evaluation and even LSP-8 fell short of the ASR in terms of weight and speed, for which permanent waivers had to be granted by Air HQ when LCA achieved IOC (December 2013).

(Para 4.5.1)

- Awarding of the 20 IOC contract by MoD to HAL in 2006 when LCA design was nowhere near finalization, was premature, as only Technology Demonstrators/ Prototypes were flying and LSPs were yet to be built. This lead to delay in productionisation of LCA and formation of squadrons by IAF, as

HAL is yet to supply any aircraft against the contract (January 2015).

(Para 4.6.1)

- Awarding of contract (December, 2010) for supply of 20 FOC configuration aircraft by MoD to HAL even before commencement of supply of IOC configuration aircraft, freezing of designs and achieving of FOC was premature. Further, HAL had advances of `1509.22 Crore since 2010 without utilising it against the contract. (January 2015).

(Para 4.6.2)

- Due to delay in manufacture and supply of LCA, IAF had to undertake alternate temporary measures such as up-gradation of existing aircraft at a cost of ` 20,037 Crore to overcome depleting squadrons with obsolete aircraft and IAF is looking forward for early induction of LCA to overcome the drawdown of squadrons.

(Para 4.7)

Summary of Important Audit Observation-Report of the Comptroller and Auditor General of India, Union Government, Defence Services (Air Force) No. 38 of 2015 laid in Parliament on December 18, 2015

I. Operation and Maintenance of 'AA'

The Ministry of Defence concluded a contract (March 2004) for procurement of three 'AA' and its sub-systems at accost of 1108 MUSD (` 5,042 Crore).

There was sub-optimal utilisation of operational capabilities of 'AA' in terms of flying task achieved mainly due to un-serviceability of ÁA'. Besides, scope for increasing operational efficiency of 'AA' aircraft was restricted due to absence of training to aircrew on air to air refuelling (AAR) and non-acquisition of additional land for extension of runway length at AF Station 'S-3'.

There was delay in installation of Ground Exploitation Station (GES) at intended location ('S-1') due to lack of due diligence in planning of work services. There was shortage of aircrew which may impact the operations of the 'AA' aircraft during hostilities.

No long term arrangements existed for repair and maintenance of 'AA' which was being managed with interim maintenance services contract. Supply of defective Automatic Test Equipment for Communication System, non-supply of 'I' level facility for Identification of Friend or Foe (IFF) system and short provisioning of stores/ rotables had adversely affected the serviceability of 'AA'.

Certain infrastructure facilities were not synchronised with the induction of 'AA' as there was delay in completion of work services for modified hangars, independent storage facility and separate training-cum-accommodation centre at AF station 'S-3', which affected smooth functioning of 'AA.

(Para 2.1)

II. Operational works in IAF

Operational works are undertaken to meet the temporary requirement of operational necessity and hence have significant role in operational preparedness of IAF. ` 90.35 Crore was spent by IAF on operational works during 2010-11 to 2013-14. Audit

found inclusion of ineligible works in Annual Operational Works. Plans (AOWPs) and undefined timelines for all stages of operational works viz. delays in declaring operational works area, approval of AOWPs, award of contracts and execution of operational works.

(Para 2.2)

III. Operation and maintenance of 'C' aircraft

In order to maintain a credible level of deterrence, Indian Air Force (IAF) procured 'C' aircraft from 1996 onwards. Shortfalls in performance of aircraft and airborne system as received from Original Equipment Manufacturer (OEM)/ Bharat Electronics Limited (BEL) were yet (August 2015) to be resolved. Setting up of service support centres were inordinately delayed for want of required systems/equipment. Serviceability of aircraft fleet was also low. Manpower for 'C' aircraft squadron was not sanctioned even after 19 years of its induction.

(Para 2.3)

IV. Up-gradation and maintenance of 'DD' aircraft

The up-gradation programme undertaken by IAF was neither completely successfully nor comprehensive. IAF selected unproven 'BB' radar for use in Air Defence and ground attach role. Performance of radar had not been satisfactory due to various inadequacies in its air to ground range mode and beyond visual range capability. Due to unsuitability/ deficiency of critical airborne electronic warfare (EW) systems the aircraft fleet was vulnerable to EW threats. There was low serviceability and high percentage of Aircraft on Ground (AOG) due to non-availability of spares which resulted in shortfall in flying efforts. There was overall shortage of operational and technical manpower at operating units which affected operation and maintenance of aircraft. The 'D ' level facility created at HAL was limited to diagnostic and repair and therefore, dependence on OEM continued for major repair/ overhaul of upgraded system involving long duration of time which affected the fleet serviceability.

(Para 2.4)

V. Inappropriate procurement of tent based medical shelter

Tent Based Medical Shelter (TBMS) which were planned to be light weight and meant for immediate and temporary deployment for medical relief in disaster area could not be utilized, as critical medical equipment were deleted and housing package including staff accommodation, flooring, hospital furniture, etc., were added to initial scope, which made it heavier. Resultantly user Rapid Action Medical Team (RAMT) found it difficult to transport and deploy. Thus, even after spending ` 10 Crore on procurement of TBMS for providing assistance during disasters, the nation was deprived of its intended benefits due to its heavy weight.

(Para 2.5)

VI. Excess procurement of Speech Secrecy equipment

Excess procurement of 127 speech equipment by IAF, resulted in avoidable expenditure of ` 4 Crore.

(Para 2.6)

VII. Procurement of Intelligence system

Incorrect identification/ delayed evaluation of the identified platform by IAF resulted in delay in installation of state-of-the-art intelligence system. Further, the system acquired after twelve years of 'in principle approval' and after incurring expenditure of ` 88.70 Crore remained afflicted with software issues, raising concerns on its performance as envisaged. Annual Maintenance Contract (AMC) for the system was yet (May 2015) to be concluded post expiry of warranty (December 2014).

(Para 2.7)

VIII. Arbitrary planning in the resurfacing of extended portion of runways

Resurfacing of newly extended portion of runways within three years of previous resurfacing without identifying any defect/ deterioration was arbitrary which indicated lack of due diligence in taking up the work and therefore resulted in injudicious expenditure of `1.48 Crore. It was also done without getting the approval from Competent Financial Authority i.e. MoD.

(Para 2.8)

IX. Procurement of compressor working fluid

Failure on the part of Air HQ in not ordering staggered supply of compressor working fluid worth ` 2.52 Crore led to expiry of its shelf life.

(Para 2.9)

X. Inordinate Delay in Commissioning of Low Level Transportable Radar

The critical requirement of Air Defence Surveillance envisaged (1998) to be met by IAF through 37 Low Level Transportable Radars (LLTR) was not met for past 17 years due to inordinate delay in supply of 19 LLTRs despite incurring expenditure of ` 454.48 Crore. None of the first LLTR has been commissioned so far (June 2015), thereby compromising the Air Defence surveillance capability to detect hostile low level ingress.

(Para 2.10)

XI. Savings at the instance of Audit

Air HQ/ Ministry reduced the requirements at the instance of Audit which resulted in corresponding reduction of one set of ordered equipment / spares for the crashed 'E' aircraft leading to savings of `11.45 Crore.

(Para 2.11)

XII. Execution of Mission Mode projects and delivery of system by DRDO

Audit examination of 14 Mission Mode project carried out by DRDO laboratories revealed that all the project failed to achieve their timelines and their probable date of completion (PDC) were extended many times. In five projects there were cost overruns as well.

Further, although Operational Requirements/ Qualitative Requirements/ Broad Technical Requirements of IAF existed in all project, the requirements of IAF were met to their satisfaction only in one completed project viz., project 'Rohini. In the same project the technology was also transferred leading to its productionisation by BEL and final induction into IAF. The systems developed in other closed projects were yet to be accepted by IAF.

The delays can be attributed to inadequate monitoring by different committees as well as to change of requirements by IAF (three project). Lack of harmonisation (where multiple agencies were involved) was also notice in two project.

The projects were therefore not carried out inspirit of Mission Mode which adversely affected Air Defence plans of IAF

(Para 3.1)

XIII Estate Management in Hindustan Aeronautics Limited (HAL), Bengaluru

Discrepancies were noticed in the extend of holding of HAL as per the Compendium of land holdings of HAL, Award Copies and Record of Rights of Tenancy and Crops Certificate (RTC).

HAL did not have the award copies for 402 acres and 3836 guntas (220 survey numbers) of land in Bengaluru Complex with market value of `1,499.53 Crore. There was no indenture for 265 acres and 17 guntas (March 2015) of land at Nasik though the same was in possession of HAL.

HAL had acquired 10 acres and 19 guntas of land despite existence of slums in Bangaluru and as HAL could not evict the slums, land remained under encroachment. In Karapur, out of ` 3,121.15 acres of land held by the division, 50.21 acres were under encroachment by local villagers for over 25 years.

HAL did not execute the lease deed in respect of 552.41 acres of land leased to other organisations and Sale Deed was not executed in13 cases where the land was sold.

HAL had not framed a comprehensive land use policy covering long term development plans both for functional and non-functional needs vis-à-vis adequacy of the existing facilities and suitability of vacant land available with it in the context of development of civilian infrastructure surrounding it.

(Para 4.1)

XIV. Investment in Joint Venture Companies by HAL

Against total investment of ` 225.14 Crore in 11 JVCs, HAL has already made provision for diminution in the value of investment amounting to ` 49.90 Crore made in five JVCs in its annual accounts for the year 2013-14.

BAeHAL, formed as an Export Oriented Unit, made domestic sales upto 63 per cent of total sales during the period from 2004-05 to 2013-14 in violation of Foreign Trade Policy 2004-09 and 2009-14.

HETL (i.e. a JVC) was formed with the purpose of development and manufacture of 3 D technology based products for airborne use, without assessing the relevance of the technology, market demand, technical and financial details of the JV partners as stipulated in DPE guidelines. As such, the JVC was not able to successfully execute the orders placed units for crucial projects of HAL.

HALBIT, formed for marketing, designing and integrating airborne avionics products and

systems, was entrusted with development of hardware for a time bound programme like DARIN-III though the JVC did not have nay previous experience in the field. Consequently, the DARIN-III programme was delayed due to delay in supplies by the JVC.

Investment of HATSOFF without obtaining firm commitment from the Defence Services resulted in non achievement of the intended benefits by the JVC besides additional expenditure of ` 10.93 Crore to HAL due to not ascertaining the actual cost of aircraft data licence.

IRAL, formed for undertaking supply of aviation equipment, providing services for repair and overhaul and ensuring technical and engineering support for exploitation of the aviation equipment and other related activities in India and abroad except former Republics of USSR, engaged only in trading activities and HAL was the major customer.

(Para 4.2)

XV. Acceptance of contract for DARIN-III with fixed delivery schedule led to liquidated damages.

Acceptance of a fixed delivery schedule without freezing of standard of preparation (SOP) and not working through change orders resulted in liability of ` 7.19 Crore towards liquidated damages as on March 2014 and has potential to cause further losses to HAL with the progress of the contract. This decision of HAL was against its financial interest.

(Para 4.3)

Summary of important Audit Observation- Report of the Comptroller and Auditor General of India, Union Government, Defence Services (Navy and Coast Guard) No. 37 of 2015 tabled in Parliament on December 8, 2015

- The Medium Refit (MR) of an EKM submarine was due for commencement in2001, but was carried out from January 2006, by which time the material state of the submarine witnessed extensive deterioration. The MR scheduled to be completed by January 2009 was delivered by the shipyard to the Navy only in June 2015 due to deficiency in manpower deployment by the yard, lack of protection to main line cables, delayed supply of yard materials and modernization of equipment. As a result, the Navy is unable to operate one of their lethal platforms since June, 2004.

(Para 2.1)

- Navy accepted the unsolicited bids of M/s WISL, Mumbai for conversion of Indian Naval Ship (INS) Sujata as cadet Training Ship, on the assumption that it was a merged entity of M/s ABG, Gujarat to whom Request for proposal (RFP) was issued. Further, Navy rejected the bid of M/s WISL in spite of provisions for consideration of unsolicited bids in the Defence Procurement Manual and re-issued the RFP leading to a delay of 18 months in conclusion of contract and avoidable expenditure of ` 20.80 Crore.

(Para 3.1)

- Failure of the Indian Navy to follow the extant system driven Review Programme to determine the procurement Quantities of Roller Steel coupled with the fact that there was reduction in the holding of Sea Harrier aircraft, during the last decade led to the over provisioning and an avoidable expenditure of ` 2.54 Crore. Further, due to imminent scheduled decommissioning of aircraft fleet in December 2015, the prospect of utilisation of this over-provisional quantity of Roller Steel lying in stocks is unlikely.

(Para 3.2)

- Material Organisation, Mumbai procured spare from a foreign firm on Proprietary Article Certificate basis even though the spares were available indigenously at a much lesser cost resulting in extra expenditure of ` 2.43 Crore.

(Para 3.3)

- Lack of due diligence by Navy in consolidating the requirement before issuing the Request for Proposal (RFP) led to issue of two separate RFPs for same type of equipment within eight months. Further, it did not invoke the provision of Tolerance clause included in the RFP that gives the buyer the right to increase or decrease the quantity of goods upto 50 per cent at the same price, before conclusion of the contracts. This resulted in procurement of the same item from the same firm at a much higher rate thus incurring an extra expenditure of ` 1.44 Crore.

(Para 3.6)

- In violation of the prescribed timeline under the Arbitration Award, inordinate delay by the Engineer-in-Chief Branch in taking up the matter for seeking advice of the Legal Adviser (Defence) resulted in an avoidable payment of penal interest of ` 1.15 Crore. Moreover, a Project sanctioned in 2003 at a cost of ` 58.77 Crore is still languishing even after a lapse of 12 years and an expenditure of ` 83.78 Crore.

(Para 3.7)

- Material Organisation, Mumbai [MO (MB)] concluded a contract in May 2009 for purchase of 14 Tachometers at a cost which was about 15 times higher than the last Purchase Price of another contract concluded just two months before in March, 2009, for purchase of 24 Tachometers resulting in extra expenditure of ` 76.44 lakh. Further, in gross violation of Defence Procurement Manual, MO (MB) raised the indents for procurement of Tachometers without assessing the requirement which led to 23 Tachometers worth ` 85.74 lakh lying in stock for the last four years without any demand.

(Para 3.8)

- Acquisition of Inshore Patrol Vessels (IPVs) for Coast Guard on nomination basis for timely replacement of existing 13 IPVs did not fructify due to procedural delays. Resultantly, eight of the thirteen IPVs decommissioned between December 2008 and July 2013 could be replaced after a delay of four to sixty months, while replacement of the remaining five IPVs had not been

received, thereby resulting in restricted operational effectiveness of the Coast Guard.

(Para 4.1)

- Hindustan Shipyard Limited, despite received funds from Ministry of Defence (MoD), did not commence the work of Repair and Refurbishment of Machinery and Infrastructure due to absence of orders from MoD. The funds received were kept in fixed deposits and also temporarily diverted to meet the working capital requirements contrary to the terms of sanction.

(Para 5.3)

Position of Action Taken Notes (ATNs) as on 31.12.2015 in respect of observations made in the C&AG Reports/PAC Reports

Sl. No.	Year		Details of the Paras/PA reports on which ATNs are pending as on 31.12.2015			
		No. of Paras/PA reports on which ATNs have been submitted to PAC After vetting by Audit During 2013-14 (Upto 31.12.2015)	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.	1988-89				1	
2.	1990-91				1	
3.	1996-97				1	
4.	1997-98				1	
5.	2001-02	2			2	1
6.	2002-03					
7.	2003-04	2			1	
8.	2004-05					
9.	2005-06	2				
10.	2006-07	1				
11.	2007-08				3	
12.	2008-09					1
13.	2009-10	1		4	1	
14.	2010-11	2		3	4	1
15.	2011-12	5	1	3	3	
16.	2012-13	8		5	8	
17.	2013-14	11	2	4	8	
18.	2014-15	9	2	9	12	1
19.	2015-16	12	9	24	23	4
	Total	**55**	**14**	**52**	**69**	**8**

Land Audit Reports for the year 2013-14 in 17 DEO circles

(i) 1,65,504 acres of defence land in 17 DEO Circles were yet to be mutated in State Revenue Records. PDs DE/ DEOs are advised to pursue the matter at appropriate level in State Governments. MoD/ DGDE should also take up the matter with Chief Secretaries of the States.

(ii) In respect of 68 cases of acquisition/ transfer of land, ACR proceedings under Rule 10 of ACR Rules, 1944 were not completed. Ministry may either suitably modify the rules or issue clear directions to Military authorities and MES to complete the proceedings.

(iii) Suitable mechanism to ensure compliance of submission of Annual certificates regarding correctness of plans and schedules of Class 'A' land together with report on encroachments and unauthorized constructions as prescribed under Rule 13 of CLAR, 1937 or Rule 14 of ACR Rules, 1944 should be devised.

(iv) After reconciliation of the recorded area with the surveyed area within targeted dates, missing boundary pillars should be erected by submission of proposals and the work should be execute through MES.

(v) DEOs must expedite action for renewal or determination of expired leases on merit of each case and recover arrears of revenue, if any, in 396 leases which have expired.

(vi) The bulk of ex-State Force land in Jammu Cantt has not been mutated by the State Government in the name of Ministry of Defence and a number of structures have been created on such land. Matter should be taken up by the Ministry with the State Government to find a workable solution.

(vii) In all title suits involving about 600 acres of defence land, both DEOs and LMAs should make all out efforts to obtain documentary proof and establish title in favour of Government of India.

(viii) As regard use of Defence Land by LMA for commercial and other purposes, MoD should issue suitable directions to the Military Authorities to ensure that defence land is used for only authorized purposes and revenue earned is deposited into Consolidated Fund of India.

(ix) Proposals for construction of new buildings for DEO offices cum residences need to be sanctioned expeditiously, considering the sensitivities of land records.

(x) In regard to 7 Wasidari leases in Jammu Cantt, the proposals should be processed expeditiously for grant of leases in Schedule VIII of CLAR, 1937.

(xi) Occupation of land by Army in Ladakh region, of the State Government or private land, needs to be regularized expeditiously by way of acquisition/ requisitioning or hiring.

(xii) DGDE needs to monitor cases of expired/ determination of lease for renewal/ determination, as the case may be.

Back Cover: An IAF IL-78 Refuelling Two Su-30 MKIs

Flagship of "INS VIKRAMADITYA" during TROPEX-2015 (Off Goa)

भारतीय वायु सेना