Annual Report
2006–2007

Ministry of Defence
Government of India

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1

THE SECURITY ENVIRONMENT

Army soldiers guarding the icy frontiers in Siachen

India shares land borders with seven countries - including Bangladesh (4096 kms), China (3439 kms), Pakistan (3325 kms) and Myanmar (1643 kms) - and maritime borders with five countries.

1.1 India's national security environment is determined by a complex interplay of its geographical attributes, historical legacy, and socio-economic circumstances as well as regional and global developments. India is the seventh largest country in the world with a land area of 3.2 million square kilometres, a land boundary of 15,000 kilometres, peninsular coastline of 7700 kilometres, 600 island territories and an Exclusive Economic Zone of 2.5 million square kilometres. Some of the island territories in the east are 1300 kilometres away from the mainland and virtually adjacent to India's ASEAN neighbours. India shares land borders with seven countries - including Bangladesh (4096 kms), China (3439 kms), Pakistan (3325 kms) and Myanmar (1643 kms) - and maritime borders with five countries.

1.2 Given the size of the country and its role in the comity of nations, our security concerns and interests are not limited to our immediate neighbourhood. India's area of security interest clearly extends beyond the confines of the conventional geographical definition of South Asia. Given its size, geographical location, trade links and the EEZ, India's security environment extends from the Persian Gulf to the straits of Malacca across the Indian Ocean, including the Central Asian region in the North West, China in the North East and South East Asia.

1.3 With geo-economics gaining precedence over geo-politics, the tasking of defence forces the world over, is undergoing a sea change. Our Armed Forces are now playing a pivotal role in creating stable conditions for the nation's economic development. With its economy growing at over 8% per annum last year and set to rise further, India's one billion people are increasingly becoming an engine of regional and global growth and prosperity. Software, manufacturing, agriculture, nuclear energy, space, disaster management, maritime affairs, entertainment and culture are only some of the areas in which India's role is becoming increasingly vital for the region and the world. With the steady growth of the Indian economy, India has now a significant stake in a stable world.

1.4 There are grave challenges facing the region. While India and some other littoral states appear to be on a path of sustained economic progress, high levels of poverty characterise most of the region. As per rough estimates, it is also the locus of 70% of the world's natural disasters. The presence of a number of nuclear weapon or nuclear capable states makes the situation even more critical. In fact India has to operate in a neighbourhood fraught with chronic political instability. There is also an apprehension that the sources of conflict between the states will multiply in the coming days as there will be an intense competition among states for water and non-renewable energy resources like oil. India has to adopt a forward looking policy of constructive engagement with all its neighbours to take on these challenges in future.

1.5 Unlike the other major oceans of the world, the Indian Ocean is bounded by landmasses. Flow of shipping into the Indian Ocean is impeded by many sensitive choke points. Indian Ocean can be accessed from the West only via the Cape of Good Hope; from the North via the Straits of Hormuz and the Persian Gulf; from the East via the Straits of Malacca, the Sunda and Lombok-Straits and the Ombai-Wetar-Straits. It is well known that oil is a critical factor in influencing the geo-political strategies of a nation, and any disturbance in its supply could have serious security ramifications. Considering the fact that India, China and Japan are relying on oil shipments to push forward their economies, it is natural that these countries are sensitive to the security of the sea-lanes of communication (SLOCs) and choke points of the region. Major energy lifelines of the world, carrying 66% of the total world oil trade, pass in close proximity to India, thereby placing a prime responsibility towards safety of this key energy flow. This can only be achieved by having visible and potent defence forces that can effectively deter attempts by any state or non-state actors to destabilize the trade routes. India is a major maritime country in Asia, with blue water – capable Navy, commensurate with its responsibilities and commitments. Apart from the geo-strategic importance of the straits, the increased incidences of maritime crime are prompting several regional and extra-regional countries to discuss and move towards maritime security cooperation.

1.6 It is a fact of life that the end of the Cold War has not made the world any safer. Proliferation of weapons of mass destruction and missiles and their related technologies continue to threaten regional and international security. India is deeply concerned at the nuclear test conducted by DPRK in violation of its international commitments. The test confirms vividly the true

Infantry soldiers crossing a riverine obstacle in the North East

extent and depth of clandestine transfers that have taken place to DPRK. India has all along expressed its concern regarding such proliferation. At the global level there is a wider recognition of India as a responsible power and a growing desire to work with India to eliminate such threats. India has expressed its readiness to be part of any constructive effort at the international level to ensure regional and global security.

1.7 At a time when the international scenario is surcharged with violence, insecurity and tension, it is comforting to see in our immediate neighbourhood that the political violence and social turmoil in Nepal have tapered out, with political space opening up for popular democracy. It is encouraging to see the reconciliation process between the Seven Party Alliance and Maoists moving ahead. However, the overall security environment in our immediate and extended neighbourhood has continued to deteriorate over the years and there is a need to continuously monitor and analyze developments impinging upon our security. The menace of international and cross-border terrorism is growing rapidly in all parts of the world, both in magnitude and in sophistication. Similarly, employment of subversive tactics for resolution of inter-state disputes is continuing. All these factors pose new challenges to international peace and security and need to be taken into account for determining the role to be played by India in the future.

At the global level there is a wider recognition of India as a responsible power and a growing desire to work with India to eliminate nuclear threats. India has expressed its readiness to be part of any constructive effort at the international level to ensure regional and global security.

1.8 The global ascendancy in violence directly impacts on India's internal security scenario. The violence level in the North East has shown a marginal increase in 2006, mainly in Assam and Nagaland . Terrorist violence was also witnessed during the year in Varanasi, Mumbai, Malegaon and other parts of India, in which the role of externally supported terrorist groups was strongly evident. Naxal violence is also an area of concern. While the number of naxal violent incidents has shown a marginal decrease in 2006, casualties of civilians and security personnel have remained at the same level as in 2005.

1.9 On the Jammu & Kashmir issue, India is ready to look at options, short of redrawing the boundaries. On 24 March 2006 and again on 20 December 2006 at Amritsar, the Prime Minister declared India's readiness to find a pragmatic solution to resolve the J&K issue. He also envisaged a situation where the two parts of Jammu & Kashmir can, with active encouragement of the governments of India and Pakistan, work out cooperative, consultative mechanisms so as to maximize the gains of cooperation in solving problems of social and economic development of the region.

1.10 India is continuing to have security concerns with Pakistan on cross-border terrorism. Terrorist groups continue to operate freely in Pakistan. They also find shelter, support and training for operations across the border/LOC from elements in Pakistan. Recent incidents of terrorism and suicide bombings in some countries have demonstrated the ever-increasing reach of Pakistan-based terrorist organisations, such as the homegrown Lashkar-e-Taiba. India is committed to peace, friendship and good neighbourly relations with the people and the government of Pakistan. In pursuance of this goal, Government of India has taken a number of policy initiatives. It has proposed several confidence-building measures aimed at enlarging the areas

of convergence and building trust. We have repeatedly reiterated the need for Pakistan to fulfil its commitment outlined in the joint Press Statement of 06 January 2004 of not permitting the use of territory under its control to support terrorism in any manner. In fact, the whole dialogue process hinges on building an atmosphere of trust and confidence, free from violence and terror. Infiltration has to stop and Pakistan needs to take decisive action on dismantling the infrastructures of terrorism. For an effective end to terrorism, the training camps, launching pads and communication networks of terrorist organizations must be eliminated. There cannot be a segmented approach to terror.

1.11 In the wake of Mumbai blasts, Prime Minister declared that the terror modules behind the dastardly attacks in Mumbai on 11 July 2006 are instigated, inspired and supported by elements across the border. India has tried to impress upon the Government of Pakistan that it is extremely difficult for any Government to carry forward the peace process unless acts of terrorism are controlled. As a positive move, India and Pakistan have instituted a Joint Anti- Terror mechanism in November 2006. It is India's hope that demonstrable action will be taken by Pakistan against terrorism, and make this mechanism work effectively.

1.12 India-China relations are progressing. China today is India's second largest trading partner with over 20 billion US dollars worth trade a year. Mr. Hu Jintao's visit in November 2006 is the first visit by a Chinese President to India in ten years. The Joint Declaration issued during the visit contains a ten-pronged strategy for the development of the India-China "strategic and cooperative partnership". Earlier, Premier Wen Jiabao's visit to India in April 2005 had yielded an important agreement on the political parameters and guiding principles for the settlement of the boundary question. The Memorandum of Understanding (MoU) signed on the 29 May 2006 during the visit of Defence Minister to China envisages regular and institutional contacts between the armed forces and defence officials and experts of the two countries. This MOU is

T-90 Tank exercising in desert terrain

expected to serve as an instrument for a regular and sustained dialogue on defence issues between the two countries. Peace and tranquillity continued along the long India-China border as did differences in perception with regard to the boundary issue.

1.13 China's military modernisation, with sustained double-digit growth in its defence budget for over a decade and continued upgradation of its nuclear and missile assets, development of infrastructure in the India-China border areas and its growing defence links with some of India's neighbours continue to be monitored closely. The Chinese assistance to Pakistan's nuclear and missile programme has been a matter of concern as it has adversely impacted on India's national security environment. We have also taken note of the recent destruction by China of one of its own satellites in polar orbit through direct ascent anti-satellite test.

1.14 India is committed to developing close, friendly and mutually beneficial relations with Bangladesh. Although India appreciates the commitment and assurance given by the Government of Bangladesh that its territory will not be allowed to be used for activities inimical to India, we are yet to see the commitment being translated into concrete and visible action. The rise of fundamentalism in Bangladesh is a threat not just to Bangladesh but also to the entire region including India. India is seriously concerned about the recent involvement of certain Bangladesh outfits or nationals in terrorist activities within India. India wishes to see a strong, stable and prosperous Bangladesh. India will be happy to extend all assistance and cooperation to help Bangladesh achieve that goal.

1.15 India has very strong and traditional people – to – people ties with Nepal, which also extends to their armed forces. A unique feature of this relationship is that we have open borders and a large number of Nepalese citizens serve in the Indian armed forces. We also play a key role in training the Nepalese forces.

1.16 Momentous developments have taken place in Nepal in the recent past. The people of

Patrolling along the fence at LOC in J&K

Nepal have demonstrated their disenchantment with monarchy and have asserted their rights to adopt a more liberal form of democratic government. As a result of this popular movement, spearheaded by the Maoists of Nepal, a new Seven Party Alliance government has been formed. We respect the wishes of the Nepalese people in whatever future political arrangements they choose. We wish to see a peaceful, stable, and prosperous Nepal. The most important issue confronting Nepal at the moment is the rehabilitation of its economic, social and political fabric and rapid economic and social development. India is willing to provide necessary assistance within its means, in Nepal's effort to move forward.

Troops slithering down Army aviation helicopter

1.17 India – Afghanistan bilateral relations are fast moving towards a partnership, which is very special to us. A sovereign, stable, democratic and prosperous Afghanistan is not only in India's best interest but also essential for peace and stability in the region. India has been closely associated in Afghanistan's reconstruction. While India will not get militarily involved in Afghanistan without a UN mandate, it has been fully involved in rebuilding Afghanistan's civil society, in the fields of transportation, health, education and industry, with a commitment of over US$ 600 million in assistance in these fields. We need to closely watch the changing scenario in Afghanistan since it has ramifications on the security environment of the region. We wish to see a strong Afghanistan capable of protecting its frontiers and citizens and becoming a democratic and self-reliant member of the international community.

1.18 India is concerned over the escalation of violence in the recent months in some parts of Afghanistan. Indulgence in violence by remnant elements of Taliban, Al-Qaeda and Hizb-e-Islami continue to be the primary source of insecurity. India is particularly concerned about the anti-India rhetoric being used by some of these terrorist groups.

1.19 Traditionally, India has enjoyed friendly relations with its southern neighbour Sri Lanka. In recent times, the relationship has acquired a strong economic dimension. India has an abiding interest in the security of Sri Lanka and is committed to its unity, sovereignty and territorial integrity. As regards the ethnic issue, India favours a negotiated, political settlement that is acceptable to all communities in Sri Lanka and which respects democracy, pluralism and human rights.

1.20 With Bhutan, our ties are historic and our relationship is extremely close. These relations are conducted in a spirit of complete mutual understanding and respect, and rest on solid foundations.

India has been closely associated in Afghanistan's reconstruction. While India will not get militarily involved in Afghanistan without a UN mandate, it has been fully involved in rebuilding Afghanistan's civil society, in the fields of transportation, health, education and industry, with a commitment of over US$ 600 million in assistance in these fields.

1.21 Myanmar has considerable significance for our strategic interests. Myanmar borders our north-eastern states affected by insurgency. In the past the Myanmar army has conducted operations against Indian insurgent groups operating from Myanmar. There have been regular exchanges of high level visits and a bilateral interaction mechanism in defence cooperation is in place.

1.22 India – Maldives relations are close and cordial. Both the countries remain engaged in developing infrastructure and capacity building in the Maldives through economic and technical assistance programmes, besides providing training facilities to Maldivian nationals in various fields.

1.23 The security scenario in the extended neighbourhood of India in Southeast, East, West and Central Asia has been closely watched, as it evolved during the year. The conflicts in Iraq, the Israel – Palestine

Combat Manoeuvres by IN Ships during Defence of Gujarat Exercise 2006

confabulations, West's growing confrontations with Iran and North Korea have impacted India's economic and energy security concerns adversely. These developments are also a matter of concern to us, as we share close cultural and civilizational affinities with some of these troubled states.

1.24 To sum up, India's relationship with all her neighbours is cordial and wide-ranging. There are however, a few areas of increasing concern:

(a) Promotion of terrorism by fundamentalist groups in the neighbourhood.

(b) Large scale human migration into India across our borders, by people seeking a better economic and stable life.

(c) Proliferation of Weapons of Mass Destruction (WMD) and missiles, especially the development of mobile and increasingly accurate solid fuel missiles by Pakistan.

(d) Continuation of political instability in India's neighbourhood.

1.25 An unprecedented proliferation of narcotics and small arms trafficking in the region threatens the stability of states and societies in the region. India is located in the middle of the world's major narcotics producing and exporting regions, viz., North West Pakistan and Afghanistan on the one side and Myanmar on the other. The involvement of insurgent and criminal groups in the global drug trade is also a major cause for concern. Militant training camps in Taliban-controlled areas in Afghanistan are a major source of international terrorist activities.

1.26 In the coming years, India hopes that its rapidly expanding defence cooperation and ties with all friendly countries including its main defence partners such as France, Israel, Russia, United States, and United Kingdom will enhance not just the security environment in the region, but also the global security scenario. India is making every effort to enhance its defence ties with its extended neighbourhood in Southeast Asia, Northeast Asia, Central Asia, the Gulf and Middle East regions. Within her means and resources, India seeks to extend its ties with the countries in other parts of the world including Africa, Europe and Latin America by sharing with them our growing expertise in defence matters.

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1.27 As India's economy is growing, it has an interest in a safe, secure and stable neighbourhood. India is ready to join any endeavour at the regional or international level to bring peace, prosperity and stability to the region and the world. India has a unique ability to evolve as a peaceful, multi-cultural society, a functioning democracy and a vibrant economy. There is an understanding gaining strength in India that prosperity for only the privileged is unsustainable. India is prepared to share its experience with others in the region and has invited its neighbours to participate in its economy and to reap the benefits of its growing market.

1.28 At the same time, we understand that a strong defence is a necessary prerequisite for growth and stability. In fact, India is fully alive to issues concerning its defence and security and is committed to raising the levels of its defence preparedness to deter any potential threat emerging from outside. In fashioning its nuclear doctrine of credible minimum deterrence, India

has demonstrated a defensive posture, restraint and responsibility. India has a declared policy of no-first-use of nuclear weapons and a firm commitment to avoidance of nuclear weapons against non-nuclear weapon states, except in the event of major WMD attack. India is willing to strengthen the commitment on no-first-use by undertaking bilateral agreements as well as engaging in discussions on a global no-first-use agreement. India believes that a global no-first-use agreement would be the first step towards the delegitimisation of nuclear weapons. India's commitment to global, non-discriminatory nuclear disarmament, which would enhance its security and that of all states, remains unaltered. With reference to recent developments, India has made clear that it does not support the emergence of new nuclear weapon states.

2

ORGANISATION AND FUNCTIONS OF THE MINISTRY OF DEFENCE

Beating Retreat

The principal task of the Ministry is to obtain policy directions of the Government on all 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, a 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 created.

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.

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 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, who is the Scientific Adviser to the Raksha Mantri. 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 Special 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 The three Services Headquarters, viz., the Army Headquarters, the Naval Headquarters and the Air Headquarters function under the Chief of the Army Staff (COAS), the Chief of the Naval Staff (CNS) and the Chief of the Air Staff (CAS) respectively. They are assisted by their Principal Staff Officers (PSOs). The Inter-Service Organisations, under the Department of Defence are responsible for carrying out tasks related to common needs of the three Services such as medical care, public relations and personnel management of civilian staff in the Defence Headquarters.

To ensure transparency in defence deals Defence Procurement Procedure for capital acquisition and Defence Procurement Manual for revenue procurements, have been revised in 2006.

2.7 A number of Committees dealing with defence related activities assist the Raksha Mantri. The Chiefs of Staff Committee is a forum for the Service Chiefs to discuss matters having a bearing on the activities of the Services and also to advise the Ministry. The position of Chairman of the Chiefs of Staff Committee devolves on the longest serving Chief of Staff, and consequently rotates amongst the three Services. To facilitate the work of the Chiefs of Staff Committee, a number of sub-committees have been established.

2.8 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 from April 1, 2006 onwards is given in Appendix-II to this report.

DEFENCE (FINANCE)

2.9 Finance Division in the Ministry of Defence, deals with all matters having a financial implication. This Division is headed by Secretary (Defence Finance) and is fully integrated with the Ministry of Defence and performs an advisory role.

2.10 To facilitate greater efficiency in administration and quicker disposal of cases Ministry of Defence enjoys enhanced delegated financial powers in consultation with the Finance Division. With a view to ensuring transparency in exercise of these powers and compliance with the laid down policy guidelines, Defence Procurement Procedure and Defence Procurement Manual were brought out in 2005. While the Defence Procurement Procedure deals with capital acquisitions, the Defence Procurement Manual deals with revenue procurements. The Defence Procurement Procedure and Defence Procurement Manual were revised in 2006 to incorporate experiences gained since 2005.

2.11 Some of the important features of the Defence Procurement Procedure 2006 are:

(a) All decisions to be taken simultaneously for reducing the timeframe for acquisitions;

(b) Enhanced transparency by placing the generic requirements on Ministry of Defence website and generating vendor registration through internet;

One of the important functions of the Finance Division is preparation and monitoring of the Defence Services Estimates, Civil Estimates of the Ministry of Defence and the Estimates in respect of Defence Pensions.

(c) Increased transparency in the conduct of field trials;

(d) 'Integrity Pact' made compulsory for all contracts above Rs 100 crores; and

(e) 'Offset' obligation for all contracts above Rs 300 crores.

2.12 The Defence Procurement Procedure-2006 contains Fast Track Procedure 2006 as also the Defence Procurement Procedure for the 'Make' category.

2.13 Major highlights of the Defence Procurement Manual 2006 are as follows:

(a) Incorporation of GFR – 2005 provisions relating to Limited Tender Enquiry, Cash purchase limit, purchase through Proprietary Article Certificate, price variation clause and limits for advance payment;

(b) Apportioning quantity to L2 and L3 when L1 does not have capacity to supply as per RFP requirement, at L1's rate, in line with CVC's guidelines;

(c) Re-floating tenders, when the Tender Evaluation Committee shortlists only one vendor, after reformulating Services Qualitative Requirement to ensure competitive bidding.

(d) Providing level playing field to indigenous vendors vis-à-vis foreign vendors by comparing CIF price with indigenous vendors' offer without Excise Duty, Sales Tax and local levies.

(e) Rate contract for common user items up to three years to ensure economy of scale while providing safeguard provisions like fall clause and short closure in the event of fall in prices.

(f) Reduction in repeat order quantity to 50%, with such orders to be placed within six months by certifying no downward trend in prices.

2.14 Financial powers are further delegated to various echelons in the Services. These powers are also generally exercised by the designated competent financial authority in consultation with and with the concurrence of the designated integrated financial advisors. In July 2006 more financial powers were delegated to all the three Services. This includes powers for capital schemes up to Rs 10 crores.

2.15 Finance Division prepares and monitors the 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 2004-05 and 2005-06, as also the Revised Estimates for 2006-07 and Budget Estimates for 2007-08 are given in the Tables and charts at the end of this Section.

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

2.17 A three-day seminar was organized at Vigyan Bhawan from November 13 to 15, 2006 on defence economics. Seventy two delegates from 26 countries, apart from more than 300 delegates and

Finance Division organised a three day International Seminar in Delhi to promote the discipline in defence economics in which 72 delegates from 26 countries and more than 300 delegates and invitees from India participated.

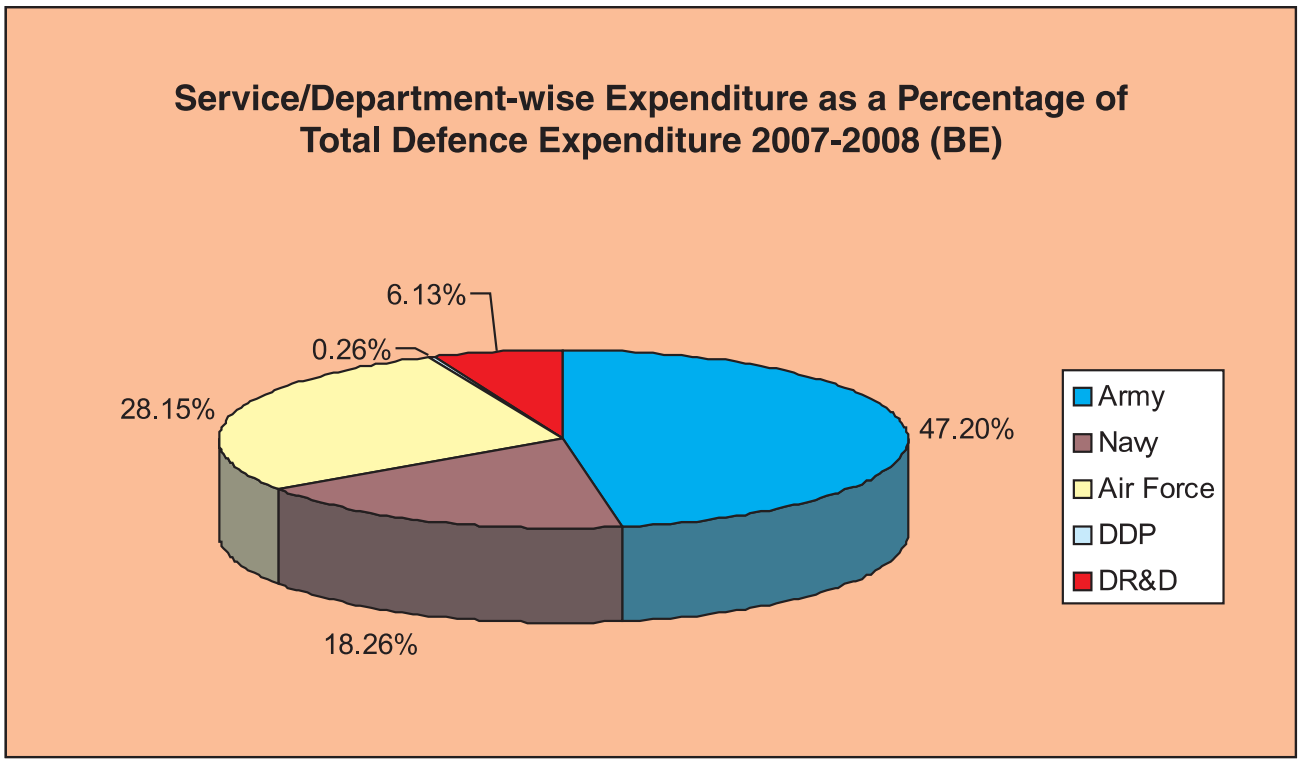
invitees from India, participated in the seminar, which also had representation from the lead Think Tanks and oversight agencies of the world. The seminar was inaugurated by Mr Pranab Mukherjee and Sh. A.K.Antony gave the valedictory address.

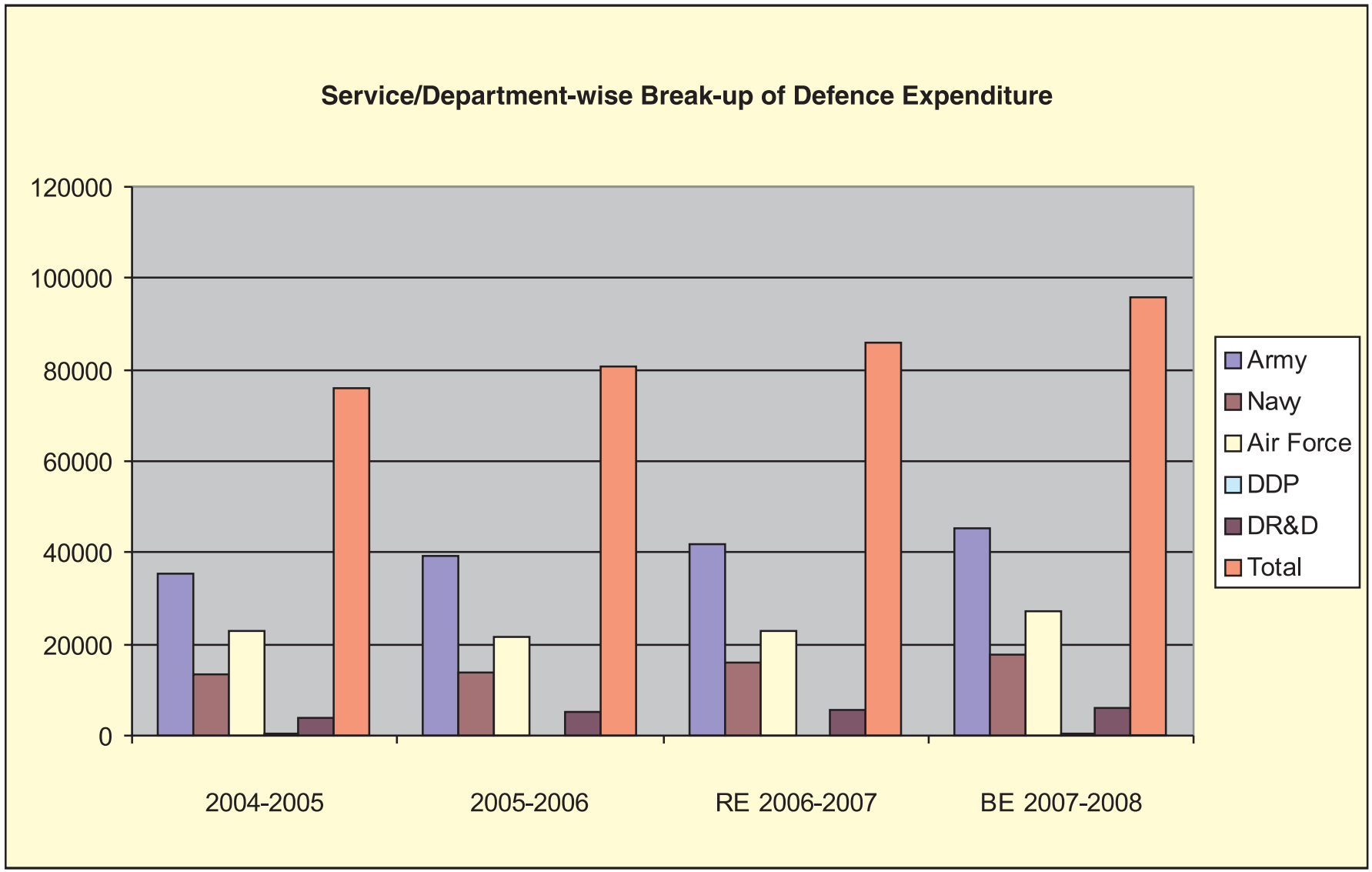
Table 2.1

Service/ Department-wise Break-up of Defence Expenditure

(Rs. in crore)

Service/ Deptt.		2004-2005	2005-2006	RE 2006-2007	BE 2007-2008
Army		35252.40	39458.03	41730.28	45316.54
Navy		13529.29	13966.99	15794.37	17529.44
Air Force		23035.91	21703.91	22874.01	27021.74
DDP	**DGOF**	-69.24	-208.35	-238.10	-202.41
	DGQA	392.29	345.04	382.07	447.47
	Total	323.05	136.69	143.97	245.06
DR&D		3715.27	5283.36	5457.37	5887.22
Total		75855.92	80548.98	86000.00	96000.00




Service/Department-wise Break-up of Defence Expenditure
120000
100000
80000
60000
40000
20000
0
2004-2005
2005-2006
RE 2006-2007
BE 2007-2008
Army
Navy
Air Force
DDP
DR&D
Total

3

INDIAN ARMY

GRAD Ballistic Missile 21 Multi Barrel Rocket Launcher

The Indian Army is equipped with requisite modern technology and equipment to meet all challenges.

3.1 The contours of India's security challenges are numerous and varied. To the military complexities arising out of the problems of unsettled borders, the challenges of the proxy war in Jammu and Kashmir, the insurgency in the North East and the growing naxal menace in Central India, we can now add the ever enlarging spectre of terrorism and numerous non-military threats to our security. The Armed Forces are constantly reviewing preparedness to meet these challenges.

MODERNISATION OF ARMY

3.2 Modernization and upgradation of the Armed Forces is a continuous process. The Indian Army is equipped with requisite modern technology and equipment to enhance its combat capabilities. The focus of modernization has been on Capability for Network Centre Warfare, NBC Protection, Increased mobility, Improvement in fire power, Enhanced surveillance capability and Night fighting capabilities.

BMP-II in action

3.3 **Mechanized Forces:** Mechanized Forces' ability to operate by night is being addressed on priority, by procurement of a range of Night Vision Devices. The mobility and navigational capabilities of T-72 tank are being enhanced by upgradation of its power pack and Global Positioning System (GPS) and Advanced Land Navigation System (ALNS).

3.4 **Artillery:** Main focus for Artillery has been acquisition and engagement of long range targets by means of Gun fire/ Rockets, missiles and its mobility. The modernization plan for the Artillery includes acquisition of long range guns and missiles along with all weather surveillance devices.

The role of the Territorial Army is to relieve the Regular Army of their static duties and to aid the civil authorities in dealing with natural calamities and maintenance of essential services.

3.5 **Army Air Defence:** Army Air Defence is acquiring new guns (Static/ Self Propelled) as well as upgrading their existing weapon system. An important aspect is early fructification of an automated Control and Reporting System. The Army Air Defence equipment at present in service are RADAR Flay catcher, STRELA 10M. ISPTA Lakshya, ZU-23MM-2B Gun, IGLA 1M Missile and KVADRAT Missile System.

3.6 **Aviation:** The capabilities of Army Aviation are being strengthened by replacing existing utility helicopters with higher capacity helicopters and induction of armed helicopter for special operations as well as Tactical Battle Support Helicopters.

3.7 **Engineers:** Procurement of state-of-the-art Mine Mark-II has enhanced the deterring power of our minefields. The Army has also achieved the capability of detecting and assessing levels of radiological, chemical and biological contamination so as to provide adequate safeguard to the troops.

3.8 **Signals:** For effective communication, the following nationwide communication networks have been commissioned to strengthen the communication at strategic, operational and tactical level:-

(a) Army wide Area Network (AWAN)

(b) Mobile Satellite Station (MSS) Hub

Cheetah Helicopters ready for operations in high altitude conditions

(c) Large Very Small Aperture Terminal (LVSAT) Phase I

(d) Army Static Switch Communication Network (ASCON) Phase-III

3.9 **Infantry:** The modernized Infantry Battalion of the Indian Army is provided with the state-of-the-art weapon systems of great lethality, range and precision, thermal imaging devices, bullet and mine-proof vehicles and secure radio sets enhancing its combat potential, surveillance and counter-insurgency capabilities.

3.10 **Containerization of Ammunition and Explosives:** For safe and secured transportation of ammunition and explosives through containers, a contract has been concluded with M/S Container Corporation of India Ltd (CONCOR). The ammunition, explosives and other sensitive stores are now being transported in sealed containers with enhanced security measures. Armoured escorts with "Live-in" Containers with all essential facilities accompany the containers. Initially, M/s CONCOR has established four serving terminals for providing containers.

The surge in tourism and enthusiastic participation of the people in the local civic bodies elections are a manifestation of the desire of the common Kashmiri for peace.

TERRITORIAL ARMY

3.11 The Territorial Army (TA) is a voluntary, part time Army consisting of otherwise gainfully employed Indian citizens, eager to perform their role in the country's defence in the event of a national emergency by relieving the Regular Army of their static duties and to aid the civil authorities in dealing with natural calamities and maintenance of essential services. It also provides units for the Regular Army, when required. There are a total of 66 TA Units of all types including 42 non-departmental Infantry Battalions/ units and 24 Departmental Battalions. There are four types of Departmental TA units namely, Eco Battalions, Railway Engineer Regiment, General Hospitals and Oil Sector Units.

3.12 **Home and Hearth Battalions (TA):** Seven Home and Hearth Battalions (non-departmental) have also been raised under TA for the purpose of generating gainful employment for local youth in border states.

Counter Insurgency Operation

3.13 Army assists the Civil Authority in handling internal security situation as and when called for and directed by the Government.

3.14 **Jammu & Kashmir:** The current phase of the proxy war in Jammu and Kashmir has shown a marked improvement as compared to the previous years. A combination of factors – both external and internal – provides the opportunity to move decisively towards conflict resolution in the State.

3.15 The ceasefire on the borders is holding out with a few minor aberrations. Local level flag meetings are encouraged to resolve differences and diffuse tensions along the border ensuring that the Indo-Pak peace process does not get vitiated due to inadvertent or malicious acts by mischievous elements. However, there are no signs of the terrorist infrastructure across the borders being dismantled.

3.16 There has been a marginal rise in infiltration since last year. Government is taking measures to arrest the upward trend. It is noteworthy that there is a sharp rise in the terrorists violence. While the surgical and professional operations based on hard intelligence continue, the focus is also on inducing surrenders amongst local terrorists, while encouraging them to join the mainstream.

3.17 In conduct of operations all precautions are taken to see that minimum inconvenience is caused to the local populace. The Army remains particularly sensitive to allegations of Human Rights Violations. Any complaint received in this regard is investigated in a fair and transparent manner.

3.18 The other notable trends are that overall violence levels have dropped, notwithstanding the occasional incident related spurt. Terrorists are increasingly on the defensive, the most visible manifestations being the fact that they are avoiding contact with Security Forces and resorting to strikes at police organizations, soft targets, grenade lobbing in urban areas and the like.

The Rashtriya Rifles have also played a role in winning the heart and minds of people by providing assistance in health and education and carrying out relief and rescue operations during natural calamities.

3.19 The surge in tourism and enthusiastic participation of the people in the local civic bodies elections are a manifestation of the desire of the common Kashmiri for peace. The recent targeting of tourists in the Kashmir valley has led to protests against such attacks. Also, there has been no decrease in the number of tourists and pilgrims visiting Jammu or Ladakh. The Amarnath Yatra saw pilgrim traffic surging to 2.7 lakh. People are opposing recruitment efforts by various terrorist tanzeems. Intelligence inputs by the local people on terrorist activities have helped in the launch of successful operations, elimination of top terrorist leaders and recovery of arms and ammunition. The opening of the Punch- Rawalakot Bus Link and other Confidence Building Measures undertaken by the Government have been well received.

3.20 **Assam:** The 'Suspension of Operations' agreements with the National Democratic Front of Bodoland (NDFB), and United Peoples Democratic Solidarity (UPDS) have ushered in relative peace and stability in most parts of Assam. Conduct of peaceful and incident free elections in the State

Tactical Battle Support Helicopter in action

has been a noteworthy achievement. The Security Forces were able to positively shape the security environment for the Government to take a decision for "Cessation of Offensive Operations" against the United Liberation Front of Asom (ULFA). However, ULFA's failure to seize the opportunity and negotiate directly with the Government forced the latter to once again commence offensive operations against ULFA after six weeks. The influence of ULFA however, is on the decline. It is active only in a few districts of Assam which have been its traditional stronghold. Instances of common people resisting extortion demands and protesting against violence by ULFA are on the rise, which is a welcome sign.

3.21 **Nagaland:** In general peace prevailing in the State, the security environment is however being vitiated due to violence by both the NSCN factions involved in a turf war against each other. Firm and deft handling of the situation by the Army and Assam Rifles has ensured that the "Peace Process" remains on track. The resolve of the people to seek peace has been a significant development. Many times, people have intervened to stop clashes and drive out the factions from towns and villages.

3.22 **Manipur:** In Manipur, the initiative to sign a 'Suspension of Operations' agreement with sixteen groups has been a major achievement. More groups are being encouraged to join the national mainstream. Consequent to the launch of successful operations in the southern districts of Manipur, normalcy in the area is getting restored gradually. Measures are now being taken to consolidate the gains with a view to denying operational space to the terrorists.

Recently the 4 SIKH Battalion deployed in Lebanon displayed exemplary commitment during the 34 day Israel-Hezbollah war. The Battalion was awarded a Unit Citation and 73 individual citations for gallantry in recognition of its efforts by the International Community.

3.23 **Tripura:** The overall situation in the State continues to remain peaceful. Due to sustained operational pressure of the Security Forces on the terrorists, 79 cadres of National Liberation Front of Tripura (Bishen Mohan) [NLFT (B)] and 30 cadres of All Tripura Tiger Force (ATTF) surrendered till December 31, 2006.

3.24 **Other States:** The situation in the states of Arunachal Pradesh, Meghalaya and Mizoram is by and large peaceful. In Mizoram the decade old unrest over the Bru refugees is likely to be resolved finally. The Bru Liberation Front of Mizoram (BLFM) which was based in Tripura and waging an armed struggle against the Mizoram Government finally surrendered on October 26, 2006. The surrender will facilitate the peaceful return of Bru refugees from Tripura to Mizoram.

3.25 **Surrender and Rehabilitation:** Sustained operational pressure on most of the terrorist groups in the North Eastern States has resulted in increasing surrenders by the militants. Till October 31, 2006 a total of 1357 militants of different groups surrendered to various Government agencies in the region.

3.26 **Naxal Violence:** The revival of Naxal Violence poses an additional challenge to national security. The Army is engaged in capacity building through rendering training to police forces and Central Para Military Forces in Counter Naxal Operations, Counter IED Operations and Training of Trainers. 16 Companies and 4800 Ex-Servicemen have already been trained while an additional 92 Companies and 5000 Ex-Servicemen will be trained by May 2007. The experiment of providing officers on deputation for

setting up a Counter Terrorism and Jungle Warfare College at Kanker, as also offering ex-servicemen expertise has worked well.

RASHTRIYA RIFLES

3.27 The sanctioned strength of the Rashtriya Rifles is 63 battalions and they are deployed in the Northern Command. Due to sustained pressure of Rashtriya Rifles, terrorist organizations have lost their cohesion resulting in in-fighting amongst various groups. The Rashtriya Rifles have also played a role in winning the heart and minds of people by providing assistance in health and education and carrying out relief and rescue operations during natural calamities.

PARTICIPATION IN UNITED NATIONS PEACEKEEPING MISSIONS

3.28 Since 1950 when Indian troops were sent to Korea, the Indian Armed Forces have participated in the United Nations peacekeeping operations. The ongoing Peace Missions are UNIFIL – Lebanon, UNMEE- Ethiopia –Eritrea, MONUC - Congo, UNMIS- Sudan, UNDOF- Golan Heights, Israel. Indian Army has made significant contribution in maintaining peace and stability in conflict areas under the aegis of the United Nations.

3.29 India has so far, provided 12 Force Commanders in various UN Missions. Towards the fulfillment of India's commitment to the UN and peace, 122 Indian soldiers have, so far, made the supreme sacrifice. In recognition of their gallant and distinguished service while serving the noble cause of world peace, Indian Army personnel have been honoured with 1 Param Vir Chakra, 5 Maha Vir Chakras, 1 Kirti Chakra, 19 Vir Chakras, 3 Shaurya Chakras, 4 Yudh Seva medals, 10 Sena Medals and 2 Vishishth Seva Medals.

3.30 Recently the 4 SIKH Battalion deployed in Lebanon displayed exemplary commitment during the 34 Day Israel-Hezbollah war. The Battalion was awarded a Unit Citation and 73 individual citations for gallantry in recognition of the efforts by the International Community.

Distinguished service of our UN peacekeeping forces while serving for world peace

3.31 The Centre for UN Peacekeeping (CUNPK) has been set up as a joint venture of Ministry of External Affairs, Ministry of Defence and the Service Headquarters to impart training and conduct familiarization programme for the troops of Indian Armed Forces deployed for various peacekeeping missions. The Centre conducts a wide range of national/ bilateral/ international training events/ seminars/ exercises on peacekeeping aspects for officers and PBORs as well as advanced courses for civilian police officers. The details of programmes conducted and number of personnel trained by CUNPK in the last two years is as under:-

Year	Programmes	No. of participants.
2005-06	6	558
2006-07	10	958

ARMY ADVENTURE AND SPORTS

3.32 Life in the Army demands that its soldiers be able to adapt themselves easily to hazardous conditions to be able to prevail upon adversaries in wide ranging situations. Adventure activities like mountaineering develop determination, courage, inner resolve and comradeship in abundant measure along with self-discipline, dependability, humility, physical and mental resilience, initiative and ability to take decision under the ever present threat of personal safety. Some of the adventure activities organized during the year are given in the succeeding paragraphs.

3.33 **Army Expedition to Mount Cho Oyu (8201M) Tibet, China:** The expedition comprising 19 members successfully scaled the peak in two groups on May 24 and 26, 2006.

3.34 **8th Maruti Suzuki Raid De Himalaya Car Rally 2006:** The Army, fielding six teams, won the overall Team Championship Trophy at the 8th Maruti Suzuki Raid De Himalaya Car Rally conducted by Himalayan Motor Sports Association from September 28 to October 7, 2006 from Shimla to Leh and back passing through Narkanda-Jalori Pass-Manali-Rohtang La-Patsio-Pang-Leh-Lukung-Leh and back to Manali.

T-90 in action

3.35 **3rd Open National Rafting Championship:** Four Army teams selected from the best Army rafters in Army Adventure Challenge Cup 2006, participated in the 3rd Open National Rafting Championship conducted near Rishikesh, Uttarakhand from November 13 to 19, 2006 by the Indian Rafting Foundation (IRF). Army teams won first 3 positions.

MISSION OLYMPICS

3.36 The Mission Olympic Wing (MOW) was established under the aegis of Military Training Directorate in 2001 to raise the overall standard of sports especially at the Olympic Games. Ten sporting disciplines were identified.

MAJOR SPORTING PERFORMANCES

3.37 Major noteworthy sporting performances under 'Mission Olympics' in the year 2006 are as under:-

(a) **Shooting:**

(i) **Commonwealth Games, Australia March 2006**: The Army shooters won Four Gold medals and Two Silver medals.

(ii) **ISSF World Cup, Cairo May 2006:** Lieutenant Colonel RVS Rathore, AVSM won the Gold Medal in Double Trap and secured a berth for Beijing Olympics 2008.

(iii) **SAF Games, Colombo, August 2006:** The Army shooters won nine gold medals, seven silver medals and three bronze medals, making a total tally of 19 medals.

(iv) **ISSF World Shooting Championship, Zagreb, Croatia, August 2006:** Havildar Bapu Vanjare of Army Shooting Node, Mhow won a Bronze Medal in the 10 m Air Pistol event in ISSF World Shooting Championship.

Glacier training in Siachen

(v) **Asian Clay Pigeon Shooting Championship, September 2006:** Lieutenant Colonel RVS Rathore, AVSM won the Gold Medal in Individual as well as the Team events.

(vi) **ISSF World Cup Final, Spain October 2006:** Lieutenant Colonel RVS Rathore, AVSM won the Bronze Medal in Double Trap.

(b) **Archery - SAF Games, Colombo, August 2006**: Naib Subedar Tarundeep Rai, VSM won the Individual Silver medal in the Championship and was part of the Team winning Gold medal.

(c) **Boxing:**

(i) **Commonwealth Games, Australia in March 2006:** Havildar V Johnson won the Bronze medal in Super Heavy weight category.

(ii) **SAF Games, Colombo, August 2006**. The ASI, Pune boxers won one Silver medal and one Bronze medal.

(d) **Weight Lifting - Commonwealth Games, Australia in March 2006:** Havildar Mohd A Zakir of ASI, Pune won the Silver medal in the 77 Kg category.

(e) **Athletics:**

(i) **Singapore Half Marathon, 2006:** The Indian Army Half Marathon team registered a commendable performance in the Singapore Half Marathon held on August 26, 2006 by coming first amongst 13 teams in the foreign Military category.

(ii) **Vernier Annual Ultra Half Marathon, Switzerland:** Dfr Binning L won the Vernier Annual Ultra Half Marathon, Switzerland held on July 15, 2006.

(iii) **SAF Games, Colombo, August, 2006:** The Army athletes won three Gold medals, one Silver medal and one Bronze medal.

(f) **Equestrian: Asia Pacific Challenge Cup, September 2006:** Major Rajesh Pattu, SJRP, VSM won the Individual Gold medal and **Asia Pacific Challenge Trophy**. Lieutenant Colonel Deep Ahlawat, VSM won the Individual Bronze medal. The Indian Team also won the Team Gold medal.

4

INDIAN NAVY

The Indian Navy - A Multi Dimensional Force

It has been the objective of the Navy to prepare for all manner of contingencies through meticulously planned operations that hone the skills of personnel; exhaustively evaluated induction of the most appropriate equipment; and focussed training to get the best from the personnel.

4.1 The Indian Navy has grown in stature as a self confident, highly professional and responsible force for stability and support in the region. The Indian Navy, today, is a complete reflection of the nation's growing economic, technological and diplomatic eminence. Strength of Indian Navy lies not only in high technology ships, submarines and aircraft but also in the cadre of highly disciplined, professionally competent personnel who man these machines.

4.2 **New Construction Ships:** The Indian Navy's continued emphasis on self reliance is in accordance with the Maritime Capability Perspective Plan. These include destroyers, stealth Frigates and the Scorpene submarine project at Mazagaon Docks Limited (MDL), Mumbai; Offshore Patrol Vessels at Goa Shipyard Limited (GSL), Goa; the Landing Ship Tank (Large), Anti-Submarine Warfare (ASW) corvettes and Fast Attack Craft at Garden Reach Ship Engineers Ltd, (GRSE); and, the Indigenous Aircraft Carrier at Cochin Shipyard Limited (CSL), Kochi. The first of the follow-on Project 15 class ships, was launched on March 30, 2006 at Mumbai and the third Landing Ship Tank (Large), Yard 3016 (Airavat) was launched on March 27, 2006 at Kolkata. A landmark event was the signing of the contract for three follow-on 'Talwar' class stealth frigates with Russia. These ships would be equipped with the indigenous ASW and Communications suite and equipped with the Indo-Russian BrahMos Cruise Missile. Another important milestone is the transfer of the USS Trenton to the Indian Navy in January 2007.

The year saw the induction of sunrise technologies in the Navy for the first time. Highly sophisticated Early Warning systems, both indigenous and imported, have given the Fleet a highly potent capability.

4.3 **New Technology Inductions:** The year saw the induction of sunrise technologies in the Navy for the first time. Highly sophisticated Early Warning systems, both indigenous and imported, have given the Fleet a highly potent capability. Network centric operations, are being given adequate impetus in order to integrate all our shore facilities with our sea going assets which include ships, submarines and aircraft. To achieve this, a Naval Communication Satellite is being developed by ISRO. A joint development project between the DRDO, Israel and the Indian Navy to develop a highly sophisticated Long Range Surface to Air Missile system is in progress.

4.4 **Information Technology (IT):** Networking and e-enabled solutions are two key thrust areas the Navy has identified in the field of IT. A large number of IT applications were initiated in the current year. These initiatives are aimed at enhancing efficiency in the fields of maintenance, health care management, human resource and material management, which have a direct bearing on resource planning and war fighting capability.

4.5 **Decommissioning of Ships:** During the year, Indian Navy Ships SDB T-54, Amba, SDB T-57 and Malpe were decommissioned after several decades of glorious service to the Navy.

MAJOR EVENTS

4.6 Prime Minister's Day at Sea: The Prime Minister sailed with the Indian Naval Fleet off the western coast in May 2006 to witness combat manoeuvres being undertaken by the Fleet. This included a demonstration of the Barak Surface to Air Missile fired by INS Ganga, accurately shooting down a low flying surface to surface missile.

4.7 **Commissioning of INS Shardul:** The Raksha Mantri had commissioned INS Shardul, a Landing Ship Large (Tank) [LST (L)], on January 4, 2007. The ship is based at Karwar and would be the first LST (L) to be based on the western seaboard. INS Shardul is the first of three LST (L)s, constructed at Garden Reach Ship Engineers Ltd., to be commissioned in to the IN.

4.8 The Raksha Mantri also embarked Western Fleet and witnessed naval operations to get a first hand view of the same. During the 'Day at Sea' with the Fleet, the Raksha Mantri, witnessed fleet manoeuvres, aircraft and helicopter operations at sea, naval weapon firing including that of Barak shooting down a surface to surface anti ship missile.

4.9 **RRM Day at Sea:** Raksha Rajya Mantri's day at sea was held off Visakhapatanam on September 12, 2006 in which IN Ships Baratang and Karmuk demonstrated combat manoeuvres including weapon firings.

MAJOR OPERATIONS AND EXERCISES

4.10 **TROPEX-06A:** The Joint Fleet exercise 'TROPEX-06A' was conducted off the western seaboard from April 5 to 21, 2006. This included a 'Joint Work-Up Phase' with both Fleets operating together from April 5 to 11, 2006 and followed by a 'Deployment and Tactical Phase' from April 12 to 21, 2006.

Indian Navy Warships dressed up ceremonially for the President's Fleet Review off Visakhapatnam

Table 4.1

Ships	Region	Remarks
Submarine Sindhughosh	Atlantic Ocean and Mediterranean sea	During return passage on completion of refit in Russia in January 2006.
Survey ship Sarvekshak	South Indian Ocean	From January 4, 2006 to March 4, 2006 for survey tasks off the island of Agalega and Port Louis harbour and until April 10, 2006 for survey tasks at Seychelles. **The completed charts of Seychelles were formally handed over to the Vice President of Seychelles on April 9, 2006.** The ship also transported ten stranded Indian crew of 'MV Al Manara' to Kochi.
Mumbai	Persian Gulf and East Coast of Africa	Off Oman from March 3 to 7, 2006 and re-deployed off the Somalia Coast from March 13 to 16, 2006 in connection with the hijacking of Indian Dhow 'Bhakti Sagar'.
Darshak	South Indian Ocean	The ship was tasked to tow ex-INFAC Tillanchang to Maldives for handing over, by the Raksha Mantri, to the Maldives Coast Guard on April 16, 2006.
Suvarna, an Offshore Patrol Vessel	South Indian Ocean	INS Suvarna towed Mauritius Coast Guard Ship 'Guardian' from Mumbai to Port Louis on completion of her refit at Naval Dockyard(Mumbai) and thereafter transported personnel and logistics supplies from Port Louis to Agalega Island (Mauritius).
Tir, Krishna and Tarangini	Red Sea	Ships of 1st Training Squadron were deployed off Bahrain and Oman in April 2006 and visited Manama (Bahrain) and Salalah (Oman) along with IN Sail Training Ship 'Tarangini'. Tarangini embarked one junior officer each from the Oman, Qatar, Bangladesh and Sri Lanka navies whilst on passage from Salalah to Kochi as observers.
Rana, Rajput, Jyoti, Kirpan and Kulish	South China Sea	The Eastern Fleet under the Command of the Flag Officer Commanding Eastern Fleet, was deployed to the South China Sea in June 2006. Bilateral naval exercises were carried out with several navies.
Tabar	South Indian Ocean and Pacific Ocean	The ship called at Perth, Sydney, Auckland, Nuku'alofa(Tonga), Suva (Fiji), Port Moresby(Papua New Guinea) and Singapore during its deployment in July 2006.

Ships	Region	Remarks
Mumbai, Brahmaputra, Betwa and Shakti	Mediterranean Sea	The Western Fleet, under the command of the Flag Officer Commanding Western Fleet was deployed to the Mediterranean Sea in June 2006. The ships called at Israel, Egypt, Greece, Turkey and Libya and carried out bilateral exercises with various navies.
Mumbai	South Indian Ocean and off Cape of Good Hope	Deployed off Mozambique, South Africa and Kenya from September 2, 2006 to October 18, 2006 including participation in the 'Africa Aerospace and Defence Exhibition' at Cape Town, South Africa. The ship conducted an exercise with South African Navy Ship Isandlwana.
Ranvijay, Karmuk and Guldar	Andaman Sea	IN Ships Ranvijay, Karmuk and Guldar visited Yangon from November 13 to 16, 2006. IN ships Ranvijay and Karmuk also visited Mergui on November 17, 2006.
Tir and Sujata	Off Sri Lanka and South East Asia	Ships of the Ist Training Squadron, were deployed off Singapore, Belawan and Colombo from October 14 to November 4, 2006. At Colombo 72 cadets, eight Midshipmen and 13 Sub Lieutenants were embarked onboard for a sea sortie.

4.11 **Defence of Gujarat Exercise:** Defence of Gujarat exercise (DGX 06) was conducted on the Western Seaboard, off the Gujarat coast, from September 12 to 23, 2006. The aim of the exercise was to develop and validate plans for the protection of off-shore assets, including the protection of ports in the Gulf of Kutch and shipping in the Deep Water Channel leading to these ports.

OVERSEAS OPERATIONS

4.12 **Operational Turn Around (OTR):** Ships and aircraft undertook OTR at various ports for replenishment of fuel, rations and stores in the course of their deployments and exercises with own ships and those of friendly foreign countries. Eighteen ships availed operational turn around facilities in 9 ports and 16 IN aircraft, on surveillance and reconnaissance missions in the Indian Ocean Region (IOR), availed operational turn around facilities in 9 airports during the year.

4.13 **Operational Deployments:** The Naval Fleet saw several overseas deployments in furtherance of the maritime interests of the nation and to meet specified diplomatic objectives. A summary of these deployments is shown in Table 4.1.

EXERCISES WITH FOREIGN NAVIES

4.14 **Building Confidence through Interoperability:** Navies from many countries are keenly desirous of exercising with the Indian Navy. These exercises are at the bilateral level and provide a firm foundation to develop professional skills, establish interoperability regimes and procedures, and above all are an excellent confidence building mechanism. Over the years the exercises have increased in scope and

content while enhancing interoperability. Conduct of bilateral exercises have been institutionalized with USA, Russia, France, UK, Oman, Sri Lanka and Singapore and joint patrols continue with Indonesia and Thailand.

4.15 **Bilateral Exercises:** During this year, extensive exercises with the Singapore Navy, French Navy, US Navy and Royal Navy were conducted. Many firsts were established which included two carrier joint exercise, dissimilar air combat training with French and US Navy aircraft, and basic level tactical "war at sea" exercises.

Fast Attack Crafts Bangaram, Bitra, Batti Malv and Baratang; and INS Shardul, a Landing Ship Tank were inducted during the year.

4.16 **MILAN 06:** 'MILAN' is an institutionalised biennial event to engage navies of the Bay of Bengal and Andaman Sea area in mutual cooperation at sea and in harbour. MILAN 06 was held at Port Blair from January 9 to 14, 2006. A total of eight countries participated in the exercise namely Sri Lanka, Bangladesh, Myanmar, Indonesia, Singapore, Thailand, Australia (delegation only) & Malaysia.

DISASTER MANAGEMENT AND HUMANITARIAN RELIEF

4.17 **Operation Rahat -2:** Operation 'Rahat-2' was executed on May 28, 2006. INS Rajput, deployed to the South China Sea, was diverted to Jakarta with seven tons of relief material and a medical team to provide humanitarian assistance to the Indonesian people affected by the earthquake in central Indonesia. The ship was the first foreign ship to reach Jakarta.

4.18 **Operation Sukoon:** IN ships, Mumbai, Brahamaputra, Betwa and Shakti, returning from deployment to the Mediterranean Sea were tasked for evacuation of Indian nationals from Beirut during the Israel-Lebanon conflict. After evacuating 2280 Indian, Nepalese and Sri Lankan nationals from Beirut to Larnaca and transporting 65 tons of relief supplies from Larnaca to Beirut the ships returned to their home port in August 2006.

Marine Commandos demonstrating beach assaulting during an exercise

INDUCTIONS AND DE-INDUCTIONS

4.19 **New Commissions:** Fast Attack Crafts (FACs) IN FACs Bangaram, Bitra, Batti Malv and Baratang, and INS Shardul, a Landing Ship Tank, built at Garden Reach Shipbuilders and Engineers (GRSE), Kolkata were inducted during the year.

TRAINING

4.20 **Training of Foreign Personnel/ Foreign Training Delegations:** During the year, 23 countries were allotted vacancies for training with the Indian Navy. A total of 413 officers and 217 sailors from friendly countries underwent various training courses in India.

4.21 **Deputation of IN Personnel for Courses Abroad:** 35 personnel availed training courses with foreign navies.

4.22 **Civilian Personnel:** The Indian Navy continued to focus on the training and development of its civilian personnel. This is particularly relevant, as civilians comprise approximately 50% of the naval strength and are involved in Operations, Maintenance and Logistic support functions.

The year saw an added emphasis on issues relating to welfare of sailors. New initiatives include review of the performance appraisal system, better promotion prospects, changes in transfer policies and accommodation rules, increase in education facilities for naval children, improvements in quality of uniforms, opportunities for training in foreign languages and assist post retirement opportunities.

MISCELLANEOUS

4.23 **Indian Antarctic Expedition:** One officer and two sailors took part in the XXV Indian Antarctica Expedition. In addition, one officer and one sailor took part in the pioneering expedition to the Larsemann Hills, the site for the new Indian Base Station in Antarctica.

4.24 **INHS Patanjali:** An ultra modern Naval Hospital (INHS Patanjali) catering for 141 beds in Phase I (to be upgraded to 400 beds in Phase II) has been commissioned on December 26, 2006 in Karwar, Karnataka.

4.25 **Year of the Sailor:** The Chief of the Naval Staff declared 2006 as the "Year of the Sailor (YOTS)". The year therefore saw, an added emphasis on issues relating to welfare of sailors. New initiatives include review of the performance appraisal system, better promotion prospects, changes in transfer policies and accommodation rules, increase in education facilities for naval children, improvements in quality of uniforms, opportunities for training in foreign languages and assist post retirement opportunities through establishment of an Indian Navy Placement Agency.

4.26 **Western Pacific Naval Symposium:** The Western Naval Pacific Symposium (WPNS) is a grouping of navies of the western pacific region comprising 18 member and four Observer countries. India is an Observer to the WPNS. The WPNS Seminar on "Multilateral Naval Cooperation – Retrospect and Prospects," focussing on Interoperability and human resource training for the future, was the first ever WPNS event hosted by the Indian Navy. The seminar was conducted from December 3 to 6, 2006. Forty-seven participants from 20 countries attended in the seminar.

ADVENTURE AND SPORTS

4.27 **Sky Diving:** Five naval personnel have been trained in Sky Diving Instructor Course in Australia. The team thereafter conducted a joint Army Navy Sky Diving course at Deolali.

4.28 **Ski Traverse to South Pole:** The Indian Navy has despatched a team to ski traverse to

the geographical South Pole in December 2006 – January 2007. This expedition was flagged off by CNS on November 16, 2006. This is the first ever all Navy ski expedition, in the world, to the South Pole.

4.29 **World Military Sailing Championships:** The Indian Navy hosted the 40th World Military Sailing Championships at Mumbai in September 2006 under the aegis of the Council of International Military Sports. Seventy participants from 15 nations attended and the Indian Team was the overall winner at the event.

4.30 **Achievements of Naval Sportsmen:** Achievements of Naval Sportsmen are given in Table 4.2.

CONSERVATION AND ENVIRONMENT

4.31 **Conservation Efforts:** Energy conservation has been given an added thrust with a shift to solar lighting on roads and streets and CFL lighting in residential areas. Rainwater harvesting is being implemented in several establishments of Navy and two Waste Water Recycling Plants have been commissioned in Mumbai.

4.32 **Coastal Cleanup:** September 16, 2006 was observed as the International Coastal Cleanup Day to spread awareness on effects of coastal pollution on the flora, fauna and ecology of seas/lakes. Personnel were educated on the negative impact of polythene bags on the environment and to ensure that coastal areas become a 'Polythene Free Zone'.

4.33 **Environment:** The World Environment Day was celebrated in June 2006 by organising a workshop at Naval Dockyard, Mumbai. The Naval Commands have also initiated actions to conserve electricity by changing over to energy efficient lamps at jetties and main roads. Also, an anti plastic drive by the Navy has now ensured that all Naval bases are polythene free zones.

Table 4.2

SNo.	Name	Rank	Event	Achievement
10th SAF Games held at Colombo from August 18 to 28, 2006				
1.	Manoj Kumar	CHELP	50M Rifle Prone	Gold Games Record
2.	Manoj Kumar	CHELP	50M Rifle 3 position	Gold (Team Silver (Individual)
3.	PT Raghunath	CHME	10M Air Rifle	Gold (Team) Games Record Silver (Individual)
4.	Naveen	PORTEL	Kabaddi	Gold
5.	Harpreet Singh	PO	25M Rapid Fire Pistol	Silver (Team)
6.	AL Lakra	CPOPTI	Boxing (Feather Weight)	Silver
7.	Vikash Jangra	POPTI	Squash	Silver
8.	Bibu Mathew	POPTI	Triple Jump	Bronze
Commonwealth Games 2006				
9.	CPR Sudhir Kumar	CPOPTI	Weight Lifting (69KG)	Bronze
10.	Sanjeev Rajput	POQA3	50M Rifle Prone	Bronze
ISAF Nations Cup Regional Finals at Dubai (UAE) from April 2 to 7, 2006				
11.	R Mahesh	LCdr	Yacht Match Racing Event	Gold
12.	GL Yadav	MCPOI	Yacht Match Racing Event	Gold
13.	SS Chauhan	PO	Yacht Match Racing Event	Gold
14.	RS Dhulaji	PO	Yacht Match Racing Event	Gold

5

INDIAN AIR FORCE

The Indian Air Force is looking into increased interoperability with sister services and constantly making changes in the organization to evolve efficient methods of packaging forces, use of cost effective weapons systems, quality training and methods of rapid deployment.

5.1 The IAF has come a long way since its inception on October 8, 1932. Over the years the IAF has grown from a tactical force to one with transoceanic reach. The strategic reach emerges from induction of Force Multipliers like Flight Refuelling Aircraft (FRA), Unmanned Aerial Vehicle (UAV) and credible strategic lift capabilities. There is emphasis on acquiring best of technology through acquisitions or upgradation, be it aircraft, systems, precision missiles or net centricity. There is significant advancement towards integrating Information technology and net connectivity. As the IAF enters its Platinum Jubilee Year, it is on the path to becoming a formidable force.

MAIN INDUCTIONS AND ACQUISITIONS

5.2 **New Jaguar Twin Seater Aircraft:** Jaguar Twin Seater aircraft are in the phase of Initial Operational Clearance. All aircraft will be soon upgraded to Final Operational Clearance standard in a phased manner.

Mirage 2000 in flight

5.3 **New Single Seater Jaguar Aircraft:** New single seater Jaguar aircraft are being procured from Hindustan Aeronautics Limited (HAL), Bangalore.

5.4 **Light Combat Aircraft (LCA):** Successful design and development of LCA is a major achievement, catapulting India into the group of few nations self reliant in production of modern fighter class aircraft. The LCA is scheduled to replace the ageing MiG-21 fleet in the IAF. The formation of first squadron of LCA is planned in 2010.

Successful design and development of LCA is a major achievement, catapulting India into the select group of nations self reliant in production of modern fighter class aircraft.

5.5 **Intermediate Jet Trainer (IJT):** The Indian Air Force needs to replace Kiran trainer aircraft utilized in the Intermediate Stage Training. HAL has been assigned the task for Design and Development of this new trainer aircraft. A contract for the procurement of a few aircraft in the Limited Series Production (LSP) has been concluded with HAL. The delivery is expected from 2008.

5.6 **Advanced Light Helicopter (ALH):** IAF is procuring ALHs from HAL as a replacement to its Chetak/ Cheetah fleet as a utility helicopter. Few ALH have already been delivered to the IAF.

5.7 **Hawk Advance Jet Trainer (AJT):** The manufacture of Hawk AJT aircraft for supply to IAF has commenced in UK and deliveries are planned from September 2007. Additionally, the HAL license built Hawk AJT will be delivered from 2008 to 2010.

5.8 **Airborne Warning and Control System (AWACS):** Airborne Warning and Control System (AWACS) aircraft are being procured to meet the long felt needs of the IAF. The IL-76 based AWACS will significantly enhance the surveillance and monitoring of Aerial Vehicles/ Aircraft.

INDIGENISATION

5.9 Indigenisation of critical spares is being resorted to in an effort to improve self-reliance.

A5 AWACS with Phalcon Radar

More than 70000 lines of spares have been successfully indigenised at Base Repair Depots. The under-mentioned projects have been taken up for indigenisation: -

(i) **Indigenous Blade Manufacturing Unit:** A Blade Manufacturing Unit for aero engines of helicopters and transport aircraft is being set-up at HAL.

Low Level Light Weight Radars have recently been inducted and deployed for operations.

(ii) **LCA:** The first Squadron of Light Combat Aircraft (LCA) is planned to be formed by 2010.

(iii) **MiG-27 Upgrade:** The MiG-27 aircraft is being upgraded with improved avionics, navigation and targeting systems at Hindustan Aeronautics Limited.

AIR DEFENCE

5.10 **THD-1955 Radars:** During the current year transmitters and receivers of THD radars are likely to be upgraded to achieve enhanced reliability and increased life span.

5.11 **Low Level Light Weight Radar (LLLWR):** Low Level Light Weight Radars (LLLWR) have recently been inducted and deployed for operations.

5.12 **Precision and Surveillance Approach Radar Systems:** A number of Precision and Surveillance Approach Radar Systems are being procured to help guide aircraft for landing during bad weather/ poor visibility.

TRAINING AND EXERCISES

5.13 **'SINDEX-06'**: A joint exercise was conducted between Royal Singapore Air Force and IAF at Kalaikunda in June 2006 providing an opportunity to project our capabilities.

International Co-op Air Exercise SINDEX

5.14 **IAF-RAF Joint Exercise - INDRA DHANUSH 06**: A Joint Exercise between IAF

MI-35 Attack Helicopters

and RAF, named INDRA DHANUSH-06, was conducted from October 2-13, 2006 at Air Force Stations Gwalior and Agra.

5.15 **Flying Training on Hawk Advanced Jet Trainer (AJT**). The contract for Hawk Advanced Jet Trainer (AJT) was signed on March 26, 2004. As per the contract, up to 75 officers were to undergo interim training on Hawk in UK over a period of approximately three years. Till date 39 pilots have completed training and 17 are in UK undergoing training. The last batch of pilots is scheduled to complete training by January 2008.

FLIGHT SAFETY

5.16 The most prominent decline in the accident rate of the IAF has been during the last two years. The Force recorded its lowest ever accident rate of 0.44 per 10,000 hrs in 2005-06. The accident rate during the current financial year is 0.37 per 10,000 hours (till February 10, 2007). The IAF is continuously striving to reduce the accident rate.

PLATINUM JUBILEE EVENTS

5.17 The Platinum jubilee celebrations of the IAF commenced with the Air Force Day Parade on October 8, 2006 at the Air Force Station, Hindon. A parachute descent by the Chief of Air Staff at Hindon airfield was followed by a spectacular Air Display by 66 aircraft which was the highlight of the Parade cum Investiture ceremony. Multifarious activities are planned in all the Air Force Commands throughout the year to commemorate the occasion culminating on October 8, 2007.

5.18 **West - East Power Hang Gliding (PHG) Expedition:** Power Hang Gliding (PHG) expedition concluded in November 2006 at AF

IAF UN Peace Keepers extending Medical Aid in Congo

Station Chabua after covering 21 Air bases enroute, through a distance of 3700 km. 307 joy rides were given to school children/ civilians. Flight data has been forwarded for inclusion in the Limca Book of Records as the longest PHG cross-country expedition.

IMPORTANT MILESTONES/ ACHIEVEMENTS

5.19 **President Flies Su-30 MKI:** On June 8, 2006, the President of India Dr. A.P.J. Abdul Kalam became the first President to fly a fighter jet as the oldest Indian co-pilot.

Multifarious activities are planned in all the Air Force Commands throughout the year to commemorate Platinum Jubilee which would finally culminate on October 8, 2007.

5.20 **Golden Jubilee of No. 20 Squadron:** No. 20 Squadron, "The Lightenings", completed 50 years of service on May 31, 2006. The squadron, which flew the "Vampire" aircraft at its inception, now flies the Su-30 MKI aircraft, the most technically advanced weapon platform in the world.

5.21 **Phase Out of MiG-25:** The MiG-25 aircraft was phased out in June 2006. The phase out ceremony of this strategic asset was held at Bareilly in May 2006.

5.22 **President's Standards to 37 and 48 Squadron :** In recognition of decades of tireless efforts by the two Squadrons the President of India awarded the Presidential Standards to 37 and 48 Squadron on February 15, 2007 at Air Force Station, Bhuj (Gujarat).

5.23 **UN Mission:** The IAF has deployed two aviation contingents in the Democratic Republic of Congo, one aviation contingent in Sudan and one Airfield Services Unit in Democratic Republic of Congo earning considerable praise from the international community for their exemplary contribution in these United Nations Peace Keeping Operations.

5.24 **Helicopter Display Team:** Advanced Light Helicopter Display Team 'Sarang', showcasing the professionalism of the IAF and capabilities of the indigenously manufactured ALH has been actively performing at various air shows and events within the country and abroad. From April 2006 till November 15, 2006 the team has performed at 11 air shows.

5.25 **Air Force Museum:** A foundation stone was laid on November 30, 2006 for a world class, state-of-the-art Air Force Museum at Delhi, to preserve the history of aviation in India. The museum, when completed, will depict the different stages of evolution of combat aviation in India and display the aeronautical equipment of historic interest and significance becoming major tourist attraction in the National Capital.

5.27 **International Congress on Aero Space Medicine:** An International Congress in the field of Aviation and Aero Space Medicine,was organised by Institute of Aviation Medicine from December 10 to 14, 2006 at Bangalore.

6

COAST GUARD

Indian Coast Guard Ship in Exercise with Maldives Forces

The Coast Guard is responsible for keeping India's Exclusive Economic Zone under regular surveillance.

6.1 The Indian Coast Guard was commissioned as an independent service on August 19, 1978 under the Coast Guard Act 1978, although it was in existence as an interim Coast Guard Organisation under Naval Headquarters since February 1, 1977. Ever since its inception, the Coast Guard has been acquiring a wide range of capabilities, both surface and airborne to discharge assigned tasks during peace time and to supplement the efforts of Indian Navy during war.

ORGANISATION

6.2 The command and control of the Coast Guard lies with the Director General of Indian Coast Guard, at New Delhi. The Organisation has three Regional Headquarters i.e. Mumbai, Chennai and Port Blair. The three Regional Headquarters command the entire coastline of India, through 11 Coast Guard Districts .

DUTIES AND FUNCTIONS

6.3 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 zones.

(b) Providing protection to fishermen including assisting them at sea while in distress.

(c) Taking such measures as are necessary to preserve and protect the maritime

Coast Guard's Helicopter monitoring Merchant Vessel Kew Bridge grounding off Ratnagiri

environment and to prevent and control marine pollution.

(d) Assisting 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 zones.

(f) Such other matters, including measures for the safety of life and property at sea and collection of scientific data, as may be prescribed.

EXISTING FORCE LEVEL

6.4 The Indian Coast Guard has a force level of 42 ships, 24 boats/craft and 45 aircraft and helicopters in its fleet to carry out regular surveillance of the maritime zones of India and the areas of interest. Four Fast Patrol Vessels - Aruna Asaf Ali, Subhadra Kumari Chauhan, Savitribai Phule and Meera Behn were commissioned during 2006. Three Coast Guard stations Kakinada, Beypore and Pondicherry were also commissioned during the year. A total of 20 ships and boats are at various stages of construction in Indian Shipyards.

Four Fast Patrol Vessels and three Coast Guard stations were commissioned during 2006.

OPERATONS AND EXERCISES

6.5 **Pollution Response Operations off Sri Lanka:** In response to a request from the Government of Sri Lanka, two Indian Coast Guard Ships (Offshore Patrol Vessel Class with Integral Helicopter) were deployed off Galle Harbour to mount pollution response operation resulting from sinking of a merchant vessel in the western limits of Traffic Separation Scheme off Dondra head. The Vessels jointly carried out surface and aerial surveillance around the datum and successfully neutralized the slick.

6.6 **Operations Undertaken for Recovery of Narcotics:** Indian Coast Guard has effected five narcotics hauls in the year 2006 in joint operations with Narcotics Control Bureau. The details of apprehensions/ seizure during joint operations are given in Table 6.1.

6.7 The Indian Coast Guard carried out the following exercises during the year 2006:-

(a) **Search and Rescue Exercise(SAREX) 2006:** Search and Rescue Exercise (SAREX - 2006) was carried out off Mumbai on January 11, 2006. Indian Coast Guard Ships Sagar, and Kamladevi, Coast Guard Air Station Daman and 842 Sqn (Coast Guard) participated in the exercise.

(b) **Operation Suraksha:** Operation Suraksha was conducted from January 12 to 15, 2006 to provide seaward security to the pilgrims during the mela at Ganga Sagar.

Table-6.1

S. No.	Date	Quantity.	Value(Rs.)	Place of Apprehension/ seizure
1.	January 07, 2006	4.34 Kgs Heroin	4.3 Crores	Tuticorin
2.	February 19, 2006	17.3 Kgs Brown Sugar	17.3 Crores	Village Pudumadam, Mandapam highway
3.	February 20, 2006	6.95 Kgs Heroin	7.0 Crores	Trichendur coast in Gulf of Mannar
4.	June 2, 2006	200 Kgs Cocaine	200 Crores	Off Mumbai harbour
5.	October 10, 2006	10 Kgs Heroin	10 Crores	Trichendur

Sucheta Kripalani, H-182 and 700 Sqn (Coast Guard) participated in the operation.

(c) **Tropical Exercise (TROPEX) 06:** Tropex 06 was conducted from April 5 to 26, 2006 in the Western region.

(d) **Operation Pradushan 01/06:** After Indian Naval Ship Prahar sank due to collision with Motor Vessel Rajeev Gandhi, Operation Pradushan was conducted off Goa on April 22, 2006 to monitor oil pollution and neutralize it.

(e) **Operation SMOG:** Operation SMOG was conducted in the Eastern region from May 9 to 12, 2006 after Dredging Corporation of India Tug VI sank off Point Calimere.

(f) **SAHYOG 06:** Indo-Korean joint exercise SAHYOG 06 was conducted off Chennai during the visit of Korean Coast Guard ship Taepyungyang from July 3 to 7, 2006.

(g) **Sahyog-Kaijin 06:** Indo-Japan Coast Guard combined exercise on Search and Rescue, combating piracy and armed robbery; "SAHYOG-KAIJIN 06" was conducted off Mumbai on November 24, 2006. Along with Indian Coast Guard ships and aircraft, Japan Coast Guard Ship Shikishima, aircraft sea Duck 1/Sea Duck 2 and one Shipping Corporation of India ship also participated in the exercise.

6.8 **International Coastal Cleanup-2006:** The Indian Coast Guard is the lead agency in coordinating International Coastal Cleanup every year. This year Coast Guard had organised International Coastal Cleanup - 2006 event in India on September 18, 2006 to mark the International Coastal Cleanup day under the aegis of United Nations Environmental Programme (UNEP) – South Asia Cooperative Environment Programme (SACEP) as part of Regional Environmental programme. A total of 14,738 personnel from Coast Guard and their families, personnel from Military/Para Military Services, Police, Schools, Colleges, Educational Institutes, Central/ State Governments and NGOs took part all over the West, East and Andaman Nicobar Island coasts and made the occasion a grand success by collecting a total of 54,088 Kgs of debris from an area of 105.75 kms.

7

DEFENCE PRODUCTION

Surya Kiran Aerobatic Team (SKAT) performing at the AERO India 2007

The Department of Defence Production deals with the indigenization, development and production of defence equipment both in the public and private sectors.

7.1 The Department of Defence Production deals with the indigenization, development and production of defence equipment both in the public and private sectors. The Department has 8 Defence Public Sector Undertakings and 39 ordnance factories with a wide-ranging production infrastructure. The products include aircraft and helicopters, warships, submarines, heavy vehicles and earthmovers, missiles, a variety of electronic devices and components for the defence sector, and alloys and special purpose steel and other alloys. Since Independence, the defence production sector has been developing steadily, with the objective of achieving self-reliance.

7.2 The following are the major organizations directly under the Department of Defence Production :

- Ordnance Factory Board
- Hindustan Aeronautics Limited
- Bharat Electronics Limited
- Bharat Earth Movers Limited
- Mazagon Dock Limited
- Goa Shipyard Limited
- Garden Reach Shipbuilders & Engineers Ltd
- Bharat Dynamics Limited
- Mishra Dhatu Nigam Limited
- Directorate General of Quality Assurance
- Directorate General of Aeronautical Quality Assurance
- Directorate of Standardisation
- Defence Exhibition Organisation

7.3 Defence equipment today is very technology intensive demanding high levels of quality. The Directorates General of Quality Assurance and Aeronautical Quality Assurance, and the Directorate of Standardisation have been set up to ensure these quality levels.

7.4 With the introduction of the new Defence Procurement Procedure 2005, Government has stipulated a 30% offset for contracts exceeding Rs 300 crore. The vendors concerned will have to source goods or services to this extent from Indian defence industry. This would give the industry a significant opportunity to improve exports as well as manufacturing capabilities.

7.5 The Defence Exhibition Organisation has regularly been organising two major international events - “Defexpo” and “Aero India” since 1996. The Defexpo is a biennial event in which a large number of manufacturers, participating countries and businessmen take part; its focus is on land and naval systems. Aero India, on the other hand, is for the aviation sector and aerospace. Over the years, both events have secured considerable international recognition, and have also grown significantly in terms of the number of participants and the area occupied.

ORDNANCE FACTORIES

7.6 The Ordnance Factories Organization is the largest and oldest departmentally run production organization in the country. It is primarily engaged in the manufacture of Defence hardware for the Armed forces. The Ordnance Factories were established with a mandate to ensure self-reliance in manufacturing of Defence hardware.

7.7 The Ordnance Factories Organization is a fine blend of old and state-of-the-art factories. The first Ordnance Factory was established in 1801 at Cossipore, near Kolkata. There are 39 Ordnance Factories, geographically distributed all over the country at 24 different locations. The 40th Factory is being set up with the state-of-the-art technology at Nalanda, Bihar, for production of Bi-modular changes required for 155mm Ammunition.

7.8 **Organisation Structure:** The Ordnance Factory Board has a Chairman and 9 functional Members. Out of these, five Members head operating divisions and four Members are for Staff functions. The operating divisions are based on the main products/or group of products. The five operating divisions are:

- Ammunition and Explosives (A&E)
- Armoured Vehicles (AV)
- Materials and Components (M&C)
- Ordnance Equipment Group of Factories (OEF)
- Weapons, Vehicles and Equipment (WV&E)

The staff functions are:

- Personnel
- Finance
- Planning and Material Management
- Projects & Engineering and Technical Services.

7.9 In addition, the Government has constituted a Special Board, with representation from the Ministry of Defence, Army and Defence Research and Development Organisation and for providing appropriate inputs on resource planning, upgrading technology of products & process and on various other critical issues, necessary for the efficient functioning of OFB.

7.10 **Human Resources:** Ordnance Factories have a large pool of qualified and experienced personnel. Total strength of ordnance factories was 1,16,911, as on April 1, 2006. Ordnance factories plan to optimize manpower strength keeping in view the planned perspective requirements of major indenters. National Academy of Defence Production (NADP) Nagpur, a premier training institute, caters to the training need of Gr. 'A' officers, 8 Ordnance Factories Institutes of Learning (OF, IOL) take care of the training need of Gr. 'B' officers and staff. All the 39 Ordnance Factories have training institutes for training industrial employees and trade apprentices.

7.11 **Product Profile:** The product range of Ordnance Factories is as under:

Weapon Items - Small Arms (Rifles, Pistols, Carbines, Machine Guns), Tank Guns, Anti-Tank Guns, Field Howitzers, Artillery Guns, Mortars, Air Defence Guns and Rocket Launchers.

Ammunition Items - Ammunitions for all the above weapon systems, Rockets, Missile Warheads, Mortar Bombs, Pyro-technique (Smoke, Illuminating, Signal), Grenades and Bombs for Air Force, Naval ammunition, propellant and fuzes.

Armoured & Transport Vehicles - Tank T-72 'Ajeya', Tank T-90 'Bhishma', Infantry Combat Vehicles, Armoured Ambulance, Bullet Proof &

Mine Proof Vehicles, Special Transport Vehicles and Variants.

Troop Comfort Items - Parachute for Army & Air Force, High Altitude & Combat Clothing, Tents of Various Types, Uniforms & Clothing Items, Floats For Light Assault Bridges.

Opto Electronics - Optical Instruments and Opto-Electronic Devices/ Fire Control Instruments for Armoured Vehicles, Infantry And Artillery Systems.

Others - Special Aluminium alloys for aviation and space industry, Field Cables, Water Bowser etc.

7.12 **Performance:** The issues of Ordnance Factories have grown steadily over the years and recorded Rs. 6891.68 crore during 2005-06. In 2006-07, the issues from Ordnance Factories are expected to touch about Rs. 7200 crore.

OFAJ became the first manufacturing unit in the country to produce higher size cast billets of Aluminium Alloy (AA 2014), meeting stringent Ultrasonic quality to AMS 2630B Class "A".

7.13 **Diversification into Civil Trade and Exports:** As a policy, major thrust is being given to achieve optimum capacity utilization not only by securing additional workload from the Armed Forces but also by making sustained efforts through diversification to non-defence customers and exports.

7.14 Ordnance Factories produce a large variety of chemicals for industries in the civil sector. They also manufacture a wide range of textiles, leather goods and sporting arms and ammunition for the civil sector. During 2005-2006, items worth Rs. 1247 crores (18.09% of the total issues) were sold to non-defence customers.

7.15 Ordnance Factories have made vigorous marketing efforts to boost exports. Some of the notable products exported during the year are:-

(a) 40 mm L-70 gun and its spares

(b) Brake Parachutes for Sukhoi-30 and Jaguar Aircraft.

(c) Mine Protected Vehicles.

(d) Bolt Action Rifles and 14.5mm Cartridges

7.16 Highlights: Some of the important achievements of Ordnance Factories in the current financial year are:-

(i) **Ordnance Factory, Ambajhari (OFAJ)** – OFAJ became the first manufacturing unit in the country to produce higher size cast billets of Aluminium Alloy (AA 2014), meeting stringent Ultrasonic quality to AMS 2630B Class "A". OFAJ has planned supply of billets worth Rs. one crore against orders already secured.

(ii) **Ordnance Cable Factory, Chandigarh (OCFC)** – OCFC has completed an order for supply of 50 Km Anti Microphonic Cable, for Centre for Fire and Explosive Safety, Delhi. OCFC has also developed and issued a single mode six fiber optic cable to South Western Command (SIGS), Army HQ, for the first time.

(iii) **Ordnance Clothing Factory, Avadi (OCFAV)** – OCFAV has successfully supplied the first batch of 270 sets of the New Combat Uniforms with Army logo. Further, 5000 sets of this Uniform have been supplied to Army for extensive user trials.

7.17 **Quality Management:** Implementation of Total Quality Management (TQM) concept has been given a major thrust in all the Ordnance Factories. All the 39 Ordnance Factories have switched over to Quality Management System conforming to ISO-9001: 2000 standards. All the 52 laboratories in 29 Ordnance Factories are accredited to National Accreditation Board of

Laboratories (NABL) and conform to ISO/IEC 17025 standards. The quality audit report shows that on an average, performance level of the factories have increased from 51% in 2004-05 to 73.65% in 2006-07.

7.18 The responsibility of vendor development and inspection of input materials has been transferred to OFB from DGQA to make manufacturers accountable for product quality.

All the 39 Ordnance Factories have switched over to Quality Management System conforming to ISO-9001: 2000 standards.

7.19 **Modernisation:** A capital investment of Rs. 1167 crore has been made during the 10th Plan period (upto 2005-06) and investment of Rs.339 crore has been planned in 2006-07. For the 11th Plan Period, an investment of about Rs. 4,200 crore, has been planned for modernization of Ordnance Factories.

HINDUSTAN AERONAUTIC LIMITED (HAL)

7.20 Hindustan Aeronautics Limited (HAL) in its present form as a Public Sector Undertaking (PSU) under the Ministry of Defence and fully owned by Government of India, came into existence on October 1, 1964, when the erstwhile Aeronautics India Limited and Aircraft Manufacturing Depot were merged with Hindustan Aircraft Limited. HAL's major supplies/ services are to the Indian Air Force, the Navy, the Army, the Coast Guard and the Border Security Force. As a spin-off, Transport aircraft and helicopters have been supplied to Airlines as well as State Governments.

7.21 HAL, ranked 45th amongst world's top 100 defence companies (Defense News, 2006), cruised past the Rs 5,000-crore mark with a sales turnover of Rs 5,341.50 crore ($1.20 billion) during the financial year 2005-06. All the

Indigenous Light Combat Aircraft 'TEJAS' on its take off path

production divisions of HAL have ISO 9001-2000 accreditation and ten Divisions have ISO-14001-1996 Environment Management System Certification.

7.22 **Significant Achievements:**

(i) The dividend of Rs. 228.62 crores (including dividend tax of Rs.38.89 crores for year 2005-06 has been paid.

(ii) Around 4000 items were indigenized with an anticipated FE savings of Rs.25.62 crore per annum. Indigenisation support was provided for non-HAL produced aircraft/ helicopters also.

(iii) To realize its aim of achieving self reliance and to develop the Indian aerospace industries, the Company outsourced work packages worth Rs.282 crore to Indian industries during the year 2005-06.

(iv) Intermediate Jet Trainer and Dhruv Helicopter were displayed in Farnborough Air Show.

(v) Exports to the tune of Rs. 136.25 crores were achieved during the Financial year 2006-07 (upto November, 2006).

(vi) During 2006-07, HAL has planned to obtain the ISO 9001 – 2000 QMS certification in one more new division (LCA-LSP).

7.23 HAL received "Raksha Mantri's Awards for Excellence for the year 2003-04" on June 9, 2006 in the Institutional awards for Excellence in Performance, and Best Performance in Exports. HAL was awarded the "Enterprise Excellence Award 2004-05" for the financial and operations strength by Indian Institution of Industrial Engineering on May 19, 2006.

BHARAT ELECTRONICS LIMITED (BEL)

7.24 Bharat Electronics Limited (BEL) is the leading professional electronics company in the country engaged in the design, development and manufacture of sophisticated state-of-the-art electronics equipment/ components for the use of defence services, para-military organizations and other infrastructure providers in the telecom sector.

7.25 BEL is a "MINI RATNA" category I company. Based on the MoU performance, the company has been rated in the "Excellent" category continuously for the last 8 years by the Department of Public Enterprises (DPE).

7.26 With its 9 production units and 31 manufacturing divisions spread across 7 states, the company's focus on Research and Development to generate business using the 'state-of-the-art' manufacturing and testing facilities, has been well recognized, manifesting in the large number of recognitions/ prizes.

7.27 In the area of Quality Assurance, BEL has adopted the Total Quality Management (TQM) approach. A Corporate Quality Group – Total Organizational Quality Enhancement (TORQUE) has been set up to oversee all activities relating to enhancement of quality in the company. All the manufacturing Divisions of the Company have acquired ISO 9000 certification.

7.28 The company has adopted Six Sigma Concept – a concept that has been successfully implemented by global giants like Motorola, General Electric etc for quality enhancement and total quality management of its products.

7.29 The company has also adopted the Business Excellence Model as laid down by the CII-EXIM Bank Excellence Award criteria. Five of the Unit/ SBUs have got recognition for their strong commitment towards the Total Quality Management principles. The company has set internal targets for coverage of all the Units and SBUs under the Excellence Model by 2006-07.

7.30 Satellite Based Systems Solution (e-Governance, Telemedicine, Distance Education,

EDUSAT, POLNET), Smart Card Based Systems (Access Control, MNIC, Security & Regulatory Applications), X-Ray Baggage and Cargo Inspection System, Under Carriage Vehicle Inspection & Vehicle Authentication System, are some major areas of diversification.

Important business achievements of BEL are as follows: -

* BEL won a contract against stiff competition for supply, integration, annual maintenance and facility management of the state-of-the-art Call Data Record based Convergent Billing System for MTNL in Delhi & Mumbai.
* Company obtained an order from Army to set up a test bed for CDMA-based communication network.
* Company bagged a contract to set up a Satellite Communication Network in Nigeria.
* EDUSAT Programme has already been implemented in Karnataka, Rajasthan, Haryana and is under implementation in West Bengal. BEL is in the process of setting up networks in the states of Madhya Pradesh, Uttarakhand, West Bengal, Tripura, Nagaland, Mizoram, Arunachal Pradesh and Meghalaya as well as for the Guru Nanak Dev University.
* Company supplied a large quantity of Solar House Lighting Systems and Solar Street Lighting Systems to remote and inaccessible villages of Tripura, West Bengal and Tamil Nadu and also supplied 10KW Solar based power plants to villages in Rajasthan.

BHARAT EARTH MOVERS LIMITED (BEML)

7.31 Bharat Earth Movers Limited (BEML) was established in May 1964 and commenced operations from January 1965. At present, Government of India holds 61.23% of equity shares of the company and continues to be a majority shareholder. Financial Institutions, employees and Indian public hold the rest of the equity. BEML is a leading manufacturer of earthmoving and construction equipment in the country. BEML also manufactures ground support equipment for the Indian Armed Forces both for movement of men and material. The Company manufactures rail coaches and wagons for Indian Railways and Defence Forces and has recently diversified its business to metro coach manufacturing by supplying coaches to Delhi Metro Rail Corporation (DMRC) under a sub-contract from M/s Rotem of South Korea. In addition, the Company has ventured into trading of the non-company products for Indian and overseas customers and opened a technology division to provide e-engineering solutions in specialized areas such as automotive, aeronautics, etc.

BEML is a leading manufacturer of earthmoving and construction equipment in the country.

7.32 BEML has 8 manufacturing units located at 3 locations viz. Bangalore, Kolar Gold Fields (KGF) and Mysore. All the manufacturing units are accredited with ISO 9001-2000. BEML also has a subsidiary steel foundry, Vignyan Industries Limited (VIL), located at Tarikere. All the production units of BEML are well equipped with state-of-the-art manufacturing facilities including sophisticated Computer Numerically Controlled (CNC) machines and other fabrication and welding facilities. BEML has a dedicated R&D Centre at its KGF Complex, which provides technology support in terms of product upgradation, design & development of new products, technology absorption & adaptation and standardization to meet specific customer requirements.

7.33 BEML products are exported to more than 30 countries across the world in the Middle East,

Syria, Tunisia, Jordan, Sri Lanka, Bangladesh, UK, South Africa, North African and Latin American countries. During the year, BEML has enlarged its global reach by securing orders from Morocco and China.

7.34 **Significant Achievements:**

(i) Department of Defence Production, Ministry of Defence has conferred BEML with Category-I Mini Ratna status, giving greater autonomy on financial and other matters.

(ii) BEML paid a dividend of 100% for the year 2005-06. This is the second consecutive year that the Company is paying 100% dividend to its shareholders.

(iii) BEML has achieved "Excellent" MOU rating for the year 2005-06 after a gap of 15 years.

MDL was accorded Mini Ratna Category-I Status in September 2006.

(iv) BEML received Construction World-NICMAR 2005 Award for 'The fastest Growing Company' registering highest turnover in equipment category.

(v) 'Enterprise Excellence Award" 2004-05 conferred on May 19, 2006 by Indian Institute of Industrial Engineering in recognition of BEML's financial and operational strength.

(vi) Awarded "Second Most Popular Company" next only to ONGC by Business and Economy magazine in July 2006.

(vii) BEML successfully supplied 180 state-of-the-art stainless steel metro coaches to Delhi Metro Rail Corporation (DMRC) under technical collaboration with M/s Rotem of South Korea.

MAZAGON DOCK LIMITED(MDL)

7.35 The leading Warship building yard in the country, Mazagon Dock Limited (MDL) was taken over by Government of India in May, 1960. Over the years, it has developed indigenous design capabilities and expanded its product range to include destroyers, frigates, missile boats, corvettes, submarines and patrol vessels for the defence sector and merchant vessels and dredgers for the civil sector. It is the only shipyard in the country to have built submarines, a feat achieved by very few companies worldwide

7.36 **Significant achievements:**

(i) Stealth Frigates and missile destroyers are under construction at present.

(ii) On the civil front, the construction of Cutter Suction Dredger for Dredging Corporation of India (DCIL) is in progress.

(iii) Special repairs of Submarine (INS SHISHUMAR) were completed in March 2006 and post refit activities of modernization cum warranty have also been completed in September 2006.

(iv) MDL was accorded Mini Ratna Category-I Status in September 2006.

GOA SHIPYARD LIMITED(GSL)

7.37 Goa Shipyard Limited (GSL) is the largest Public Sector Enterprise in the State of Goa employing about 1652 people. It is located at Vasco da Gama, midway on the West Coast, on the mouth of River Zuari, in close proximity to the Mormugao Port, Vasco Railway Station and Dabolim Airport.

7.38 Primarily a Shipbuilding company, GSL has diversified itself into activities like marketing Stern Gears, design and construction of Damage Control Simulator (DCS), Survival at Sea Training Facility (SSTF) and GRP boats. The shipyard has built and delivered 181 vessels to the Navy, Coast Guard and other authorities.

7.39 **Significant Achievements:**

(i) GSL has bagged the SODEF Golden Award for Technology Development & Innovation.

(ii) The Yard has delivered all the 5 Fast Patrol Vessels on order for Indian Coast Guard, each 5-6 months ahead of contractual delivery schedules. It has commissioned Fast Patrol Vessel "ICG Subhadra Kumari Chauhan" and launched Fast Patrol Vessel "ICG Savitribai Phule" and Advanced Offshore Patrol Vessel "ICG Sankalp" all on a single day on April 28, 2006.

GSL has delivered all the 5 Fast Patrol Vessels on order for Indian Coast Guard, each 5-6 months ahead of contractual delivery schedules.

GARDEN REACH SHIPBUILDERS AND ENGINEER LTD (GRSE)

7.40 Taken over by the Government of India on 1.4.1960, GRSE was put on a dynamic path of growth and diversification.

7.41 GRSE has gradually extended and modernized to improve its growing maritime needs - particularly those of the Navy and the Coast Guard. GRSE is among the leading shipyards in the country and the premium yard in the East. To meet the emerging needs, GRSE builds a wide range of ships - from sophisticated warships to ultra modern commercial vessels, from small Hovercraft to fast and powerful patrol vessels. India's first ever tanker fleet too was born at GRSE. The latest on the list is new generation hovercraft. Range alone, of course, does not show GRSE's versatility. Today, it is among the few shipyards in the world with its own Engineering and Engine Manufacturing divisions.

GRSE is among the few shipyards in the world with its own Engineering and Engine Manufacturing divisions.

7.42 **Significant Achievements:**

(i) The Company has paid dividend of Rs. 12.38 crore in the financial year 2005-06.

(ii) The Company has orders for construction of three Landing Ship Tank (Large) {LST (L)} The first of which was delivered to the Indian Navy in November 2006 and four Anti-Submarine Warfare (ASW) Corvetts are scheduled for delivery between 2008-2011. They have also received orders for construction of follow-on First Attack Crafts (FACs).

(iii) Four FACs built for the Indian Navy were delivered well within the contracted date.

(iv) GRSE was accorded Mini Ratna Category-I Status in September 2006.

(v) GRSE has acquired the Rajabagan Dockyard (RBD) from Central Inland Water Transport Corporation Ltd, a Public Sector Undertaking under Ministry of Surface Transport. The RBD has been transferred to GRSE w.e.f. July 1, 2006.

MISHRA DHATU NIGAM LIMITED (MIDHANI)

7.43 Mishra Dhatu Nigam Limited (MIDHANI) was incorporated as a Public Sector Undertaking in 1973 to achieve self-reliance in areas of Superalloys, Titanium alloys and Special Purpose Steels required for strategic sectors like Aeronautics, Space, Armaments, Atomic Energy, Navy, Special products like Molybdenum wires & plates, Titanium and Stainless Steel tubes, alloys for electrical and electronic application like Soft Magnetic alloys, Controlled expansion alloys and Resistance alloys.

7.44 **Significant achievements:**

(i) The Company has received award for Development of Technology and Innovation from Society of Defence Technologists for significant contribution in the area of extensive development of Titanium and its alloys for Aerospace in general and development of niobium based alloy (NIOBHAT-101) for satellite applications.

MIDHANI has received award for Development of Technology and Innovation from Society of Defence Technologists for significant contribution in the area of extensive development of Titanium and its alloys for Aerospace in general and development of niobium based alloy (NIOBHAT-101) for satellite applications.

(ii) Company has successfully developed trial heats of Supercast 247A (directionally solidified Super alloy) required for Kaveri Aero Engine Blade/ vane application (characterization in progress)

* Beta alloy (TItan -42) required for future replacement of Titan-31 used by VSSC and supplied, for the first time, in form of forged slabs has also been developed.
* MDN-155 grade Barrel required by Field Gun Factory, Kanpur, meeting all specificational requirements also developed.
* Superni-718 Rotor forgings required by LPSC for critical applications and supplies effected for the first time meeting all specification requirements has been developed.
* Ti-600 (equivalent to IMI-831) Titanium alloy was developed for the first time meeting all specificational requirements during type testing.

- MIDHANI received prestigious orders worth Rs.51.35 crore from Department of Space, Rs.20.56 crore from Hindustan Aeronautics Limited, Rs.19.20 crore from Ordinance Factories, which includes order for supply of 94 sets of "Kanchan Armour".
- Company supplied its products worth Rs. 47 crore to Department of Space, Rs.15.36 crore to ATVP, Rs.11.19 crore to Department of Atomic Energy respectively.

7.45 MIDHANI was awarded "SCOPE (Standing Committee of Public Enterprises) Award for Excellence and Outstanding contributions to the Public Sector Management" for the year 2004-05 under Special Institutional Category (Turnaround) in recognition of the contribution made by it in the areas of Business Performance, Customer Satisfaction Management, Quality Management, New Product Development, Systems and Strategies etc.

7.46 Orders worth 4.41 crore of Titan 31 grade bars and rings were executed for Vikram Sarabhai Space Centre (VSSC). Superni 80A rings worth 2.19 crore were supplied to BHEL, Hardwar for power generation applications.

7.47 MIDHANI in the month of November 2006, received a single order of record amount worth Rs. 156 Crore from ATVP for supply of low alloy steel and stainless steel welding electrodes for supply during next 5 years.

7.48 **Up-gradation & Modernization:** The Company was able to inject fresh funds for upgrading and modernizing its plant and equipment, with the active cooperation, assistance from major customers of MIDHANI like Department of Space, Defence Ordnance Factories (OFs), Hindustan Aeronautics Ltd., (HAL) etc.

7.49 Department of Space had extended its active support by funding to the extent of Rs.30 crore in establishing facilities at MIDHANI, for dedicated use in their specific space programmes and a further sum of Rs.35 crore for establishing new equipment and facilities towards up-gradation programme. The execution of these projects is at an advanced stage.

BDL successfully developed Twin Missile Launcher for deployment on BMP II and ABHAY infantry vehicles. Internal evaluation was carried out successfully.

Bharat Dynamics Limited (BDL)

7. 50 Bharat Dynamics Limited was set up in 1970 for manufacture of Guided Missiles. It is amongst a few strategic industries in the world and possesses the capability to produce advanced Guided Missile systems. The Company has two units. BDL's products are single shot weapons, which call for very high degree of reliability ensuring greater kill probability. Hence quality is accorded top most priority. Missiles Design & Engineering (D&E), Electronics and Information technology divisions have ISO 9001:2000 certifications.

7.51 **Significant achievements:**

(i) **3 UBK – 20 (INVAR):** Proof firing of 910 CKD Kits received from M/s Rosobronexport after repairs at their manufacturing unit has been successful and efforts are underway to ensure delivery to the user before end of the current financial year.

(ii) **Life Extension of Missiles:** Work on Life extension of Anti Tank Guided Missiles is underway.

(iii) **Drill & Practice Torpedoes:** Drill and Practice Torpedoes against Navy orders have been produced and delivered.

(iv) **TAL (Advanced Light Weight Torpedo):** Qualification Tests have been completed and RFP for fresh requirement of 25 sets is awaited.

(v) **Varunastra (Heavy Weight Torpedo):** Naval Science and Technological Laboratory (NSTL), Vishakapatnam is developing an Indigenous High Speed Heavy Weight Torpedo and desires to productionise this Torpedo under concurrent engineering mode in association with Bharat Dynamics Limited. An MOU has been signed with NSTL for Development & Production under concurrent engineering mode as envisaged by NSTL.

(vi) **Counter Measures Dispensing System (CMDS):** BDL was awarded The Golden Peacock award for the design and development of CMDS by Design & Engineering division of Kanchanbagh unit. The system was successfully flight-tested for the Jaguar platform at ASTE, Bangalore in June 2006. Development work of CMDS with regard to other platform like LCA, ALH and AEW&C is under progress.

(vii) **3 Km Anti Tank Guided Missile (ATGM):** Existing range of Milan missile is only 2 Km. BDL has now developed a missile to cover a distance of 3 Km. It was successfully test fired against the target kept at a distance of 3 Km in Shamirpet field firing range.

(viii) **Twin Missile Launcher:** BDL successfully developed Twin Missile Launcher for deployment on BMP II and ABHAY infantry vehicles. Internal evaluation was carried out successfully.

7.52 **Sales of Ordnance Factories and Defence PSUs:** The total value of sales/ issues by Ordnance Factories and Defence Public Sector Undertakings during the last threes years, is as follows:-

(Rupees in crore)

Year	Ordnance Factories Total Sales	Public Sector Undertakings Total Sales	Grand Total
2004-05	6186.65	11248.59	17435.24
2005-06	6891.68	13025.07	19916.75
2006-07 (upto Nov.06)	3574.26	6232.73	9806.99

7.53 Defence Public Sector Undertakings and Ordnance Factories have exported items worth Rs 256.88 crore during the year 2006-07 (upto November, 2006).

7.54 Dr. Vijay Kelkar Committee set up to examine and recommend changes in the acquisition process, which submitted its report in two parts has made 40 recommendations in Part-I. These recommendations essentially address issues related to promotion of private sector industry in defence production, so that all available recources are fully exploited for further enhancing Defence preparedness. Out of 40 recommendations, 26 have been accepted fully, 8 with certain modifications and rest are pending further deliberations. 23 recommendations have been implemented, one recommendation has

Advance Light Helicopters Aerobatic Team 'SARANG' displaying their skills

been dropped. Part-II of the Report is under examination.

7.55 **Private Sector Participation in Defence Production:** In May, 2001, the Defence Industry sector, which was hitherto reserved for the public sector, was opened up 100% for Indian private sector participation, with Foreign Direct Investment (FDI) upto 26%, both subject to licensing. Department of Industrial Policy and Promotion (DIPP) notified detailed guidelines for licensing production of arms and ammunition in January 2002.

7.56 A Standing Committee has been constituted in the Department of Defence Production under the chairmanship of Joint Secretary (Supplies) to consider all applications, for grant of Industrial Licence for the manufacture of arms and armaments, received from DIPP and to communicate the recommendation of the Ministry of Defence to that Department. The Committee also considers all matters relating to Private Production of Defence equipment viz. applications for self-certification, permission for export of products manufactured under licence as well as cases for cancellation of licence due to breach of licensing conditions or security provisions etc. DIPP has, so far, issued 37 Letters of Intents (LOIs)/Industrial Licences (ILs) to private sector companies for manufacture of a wide range of defence equipment on the recommendation of the Ministry of Defence.

7.57 **Raksha Udyog Ratnas:** A Selection Committee for selection of Raksha Udyog Ratnas has been constituted under the chairmanship of Shri Prabir Sengupta, Director, Indian Institute of Foreign Trade. Government purposes to identify tier-I industries of proven excellence, which are capable of contributing in Defence Production, depending upon their technical, managerial and financial strength. Such firms will be accredited as "Raksha Udyog Ratnas" ("RURs") and systematically encouraged to contribute in Defence Production in order to assume the role of system integrators of large weapon systems and producers of platforms required by the Defence Forces. There are independent technical, management and financial experts in the Committee, and Engineers India Limited (EIL) has been tasked to provide technical support to the Committee. The "RURs" would be treated at par with Defence PSUs, for receiving technology and undertaking licensed production with Transfer of Technology (TOT) from overseas sources.

7.58 Detailed guidelines were notified on May 9, 2005 for selection of Industry "RURs" which are also displayed on the Ministry's website. The Selection Committee will make its recommendations by March 31, 2007. The recommendations of the Selection Committee will be placed before Defence Acquisition Council (DAC) for acceptance. Once approved for selection as "RUR", the Company will enjoy the status of "RUR" for a period of 5 years, which can be renewed further. "RURs" will have to follow the Code of Best Practices and sign an agreement in this regard with the Ministry of Defence.

OTHER ORGANISATIONS IN DEPARTMENT OF DEFENCE PRODUCTION

DIRECTORATE GENERAL AERONAUTICAL QUALITY ASSURANCE (DGAQA)

7.59 Directorate General Aeronautical Quality Assurance (DGAQA) is entrusted with the Regulatory functions of Aeronautical Quality Assurance in Military Aviation. The Directorate has 34 establishments at various places in India. DGAQA provides QA coverage in three distinct areas namely Aeronautics, Air Armament and Missiles. The coverage is rendered during Design/ Development, Production/ Manufacturing and Repair/ Overhaul stages of military products and equipment. DGAQA has expertise in

supervising QA activities of complex aeronautical industries, and it ensures adherence to aero standards.

7.60 DGAQA is also providing QA coverage as nodal agency for Missile System Quality Assurance (MSQAA). During the year (upto November, 2006), DGAQA has inspected Aeronautical Stores of the value of Rs. 2150 crores.

DIRECTORATE GENERAL OF QUALITY ASSURANCE (DGQA)

7.61 Directorate General of Quality Assurance (DGQA) is an inter service organisation handling all aspects of Quality Assurance management of equipment from conceptual stages till their discard. It provides consultancy to the Armed Forces (Users) for the complete range of equipment for the Army, for Marine Engineering, Weapons, sensors and support systems for the Navy and common user items for the Air Force. DGQA interacts with users throughout equipment exploitation. It undertakes defect investigations and incorporates modifications in consultation with design and manufacturing agencies.

DGQA handles all aspects of Quality Assurance management of equipment from conceptual stages till they are discarded from service.

7.62 **Organisational Structure:** DGQA Organisation comprises both of Civilian and Service Personnel on a three tier pattern viz., Technical Directorates, Controllerates of Quality Assurance and Quality Assurance Establishments/ Wings. There are ten Technical Directorates each of which is responsible for a distinct range of equipment. Controllerates of Quality Assurance 29 in number and also known as Authority Holding Sealed Particulars (AHSP) constitute second tier in the structure. They are repositories of technical known-how and specifications, drawings and other details of all stores in their specific fields of technologies. The third tier comprises Quality Assurance Establishments/ Wings numbering 79, located all over the country. These basic field units are located alongwith assigned Ordnance Factories, Defence Public Sector Units (DPSUs) and all five metros for dealing with civil industry supported by 45 Test Laboratories and 2 Proof Test Ranges besides Small Arms Ranges.

ACHIEVEMENTS OF DGQA

7.63 The value of stores quality assured during the last three years is given below: -

Year	Value of Stores Quality Assured (in Rs. crore)
2004-2005	16,906.70
2005-2006	16,397.14
2006-2007 (till 30 Nov 2006)	7732.56

7.64 Regular interaction with Users at command level and Field Units is undertaken to obtain first hand feedback and rendering technical advice.

7.65 DGQA awards Self Certification status to Quality Conscious Firms/ Manufacturers who have well established Quality Management Systems and have demonstrated consistent product quality during the execution of successive Defence Supply Orders. Five Manufactures were awarded Self-Certification during the year bringing cumulative total to 57 manufactures.

DIRECTORATE OF STANDARDISATION

7.66 Directorate of Standardisation was constituted in 1962 with the objective to control item proliferation within Defence Services. It has nine Standardisation Cells and six Detachments.

The primary objective of the Directorate of Standardisation is to establish commonality in equipment and components among the three Services so that the overall inventory of the Defence Services is reduced to the minimum.

The primary objective of the Directorate of Standardisation is to establish commonality in equipment and components among the three Services so that the overall inventory of the Defence Services is reduced to the minimum. The objective is sought to be achieved through: -

(a) Preparation of Standardisation documents such as, Joint Service Specifications, Joint Service Preferred Ranges, Joint Service Rationalised Lists, Joint Service Guides, Joint Service Policy Statements and Joint Service Qualitative Requirements;

(b) Codification and Cataloguing of Defence Inventory; and

(c) Entry Control

7.67 Standardisation activities are done through 13 Sub-Committees, Panel/ Working Groups under these Sub Committees and several Specialists Technical Panels (STP) and Defence Equipment Codification Committee (DECC).

7.68 **Significant achievements:**

(a) Five Year Roll-on-Plan (2006-11) was put in place.

(b) Total number of items codified till March 2006 is 2,27,408. Target for the year 2006-07 is 17, 610 against which 11,642 items have been codified till November 30, 2006 thereby making the total number of items codified till date to be 2,40,511.

(c) Target for the year 2006-07 is preparation of 685 standard Documents against which 460 standard documents have been prepared till November 2006.

7.69 **Entry Control**

(i) 210 statement of cases for introduction, scaling and declaring the items obsolescent have been cleared upto November 30, 2006.

(ii) 267 Departmental Specifications were uploaded on the website making a total of 2814 Departmental specifications uploaded till November, 2006.

(iii) Two Inter Service Equipment Policy Committee (ISPEC) Meetings and Fourteen Inter Services Working Group (ISWG) have been held till November 30, 2006. Eight JSQRs have been finalised till November 2006 in the year 2006-07.

DIRECTORATE OF PLANNING & CO-ORDINATION

Directorate of Planning & Coordination is the nodal point for activities related to Defence Acquisitions Council, international cooperation in defence production, major programmes and projects related to development and production of armoured vehicles and armaments in the Ordnance Factory Board, important communication and ship building projects and offsets in defence procurement.

7.70 The Directorate of Planning and Coordination set up in 1964 with the primary objective of preparing overall plans for the production of defence equipment in the country. It functions as an attached office to the Department of Defence Production and provides technical support to various wings of the department. It is the nodal point for

activities related to Defence Acquisitions Council, international cooperation in defence production, major programmes and projects related to development and production of armoured vehicles and armaments in the Ordnance Factory Board, important communication and ship building projects and offsets in defence procurement.

7.71 The Directorate coordinates within the Department of Defence Production, the interaction with the Integrated Defence Staff Headquarters, regarding categorization of the capital acquisition plans of the three services, Defence Procurement Board and Defence R&D Board. The Directorate serves as the secretariat for the Defence Production Board, which is in-charge of the function of monitoring progress emanating out of all "MAKE" decisions taken by the Defence Acquisitions Council (DAC).

The Directorate of Planning & Coordination is responsible for monitoring and implementation of major projects of the Ordnance Factories like the Main Battle Tank Arjun and T-90 (BHISHMA), product improvement of various artillery guns and armoured vehicles and augmentation of overhauling capacity of tanks.

7.72 The Directorate is responsible for monitoring and implementation of major projects of the Ordnance Factories like the Main Battle Tank Arjun and T-90 (BHISHMA), product improvement of various artillery guns and armoured vehicles and augmentation of overhauling capacity of tanks. Major Research & Development

Raksha Mantri at the Inaugural Day Press Conference at AERO India 2007

and indigenization programmes of armaments are other key activities of the Directorate. The Directorate also monitors various strategic and tactical communication projects and other critical projects of BEL for three Services and shipbuilding projects of the three defence shipyards.

7.73 The Directorate is the nodal point in the Department of Defence Production for International Cooperation in defence production and defence exports. The Directorate supports the Export wing of the Department during deliberations with various bilateral Defence Policy Groups and Joint Working Groups with other countries. The Directorate also functions as the secretariat for the Defence Offsets Facilitation Agency (DOFA).

DEO is primarily responsible for organising and coordinating Defence exhibitions in India and abroad, as part of promoting export for defence-oriented products and services, developed and manufactured by the Indian Defence Industry.

Defence Exhibition Organisation (DEO)

7.74 The Defence Exhibition Organisation (DEO), an inter-Service Organisation, was raised in 1981. It is primarily responsible for organising and coordinating Defence exhibitions in India and abroad, as part of promoting export for defence-oriented products and services, developed and manufactured by the Indian Defence Industry.

7.75 **Standing Defence Exhibition:** For the benefit of distinguished visitors, foreign dignitaries, delegates and purchase missions, DEO maintains throughout the year, Standing Defence Exhibition at Defence Pavilion, Pragati Maidan, New Delhi, which gives them a glimpse of the range of products and services being offered by the Indian Defence Public Sector Undertakings (DPSUs) and the Ordnance Factory Board (OFB). For the first time Defence Research and Development Organisation (DRDO), Directorate General of Quality Assurance (DGQA) and Directorate General of Aeronautical Quality Assurance (DGAQA) have also put permanent display at Defence Pavilion during the current financial year.

7.76 **Participation in India International Trade Fair (IITF):** Defence Pavilion participates at IITF held every year from November 14-27. Products manufactured/ developed by the DPSUs, the OFB and the DRDO are displayed at the pavilion during IITF. Defence exhibition is a major attraction during IITF. The Defence Pavilion has been awarded 8 Gold, 3 Silver, 3 Bronze and one special appreciation during the last 25 years, perhaps highest for any Central or State Pavilion. For this years' edition of IITF (November 14-27,2006), the Pavilion was awarded 'Silver Medal' in the Central Government Category for excellence in display.

7.77 The sixth edition of Aero India was held at Air Force Station, Yelahanka (AFSY) from February 7-11, 2007. The salient features of Aero India 2007 included an exclusive business chalet area, expansion of scope to include civil aviation sector, international aviation seminar and Aero India Golf tournament in addition to increase in the number of participating countries, Indian and foreign companies and enhanced display of aircraft. The 2007 edition of Aero India was co-organized with Federation of Indian Chambers of Commerce and Industry (FICCI) and Farnborough International Limited (FIL) as the Event Manager.

7.78 **Defexpo India:** Defexpo India was launched in 1999. The fourth edition of Defexpo India was organised at Pragati Maidan, New Delhi from January 31 to February 3, 2006 in association with Confederation of Indian Industry (CII). With an unprecedented participation of 410 companies from 30 countries including 198 Indian

companies, the Exhibition was the biggest ever; not only in terms of the number of exhibitors but also in terms of area with net exhibition space of 16400 Sqm which was 25% more than the last edition. All the DPSUs, the OFB and DRDO participated in the exhibition. Special emphasis was laid to encourage participation by the Indian industry in Small Scale Industries (SSI) category. 42 high level delegations from 36 countries visited the exhibition.

7.79 **International Exhibitions Abroad:** To provide a fillip to the export efforts, DEO organises "India Pavilion" in defence exhibitions abroad to develop a potential market for defence products being manufactured by the DPSUs/ OFB. This is part of the attempt to promote 'Made in India' brand in the field of defence products. India now participates in a total of three such events abroad each year.

7.80 For the year 2006-07, India Pavilions were set up at the Defence Service Asia (DSA) 2006 at Kuala Lumpur, Malaysia from May 17-20, 2006, Africa Aerospace & Defence (AAD) 2006 at Cape Town, South Africa from September 20-24, 2006 and Indo Defence 2006 Expo and Forum at Jakarta, Indonesia from November 22-25, 2006.

INVESTMENT

(Rs. in Crore)

Name of PSUs	2003-04		2004-05		2005-06	
	Equity	Govt. loans	Equity	Govt. loans	Equity	Govt. loans
HAL	120.50	-	120.50	-	120.50	-
BEL	80.00	-	80.00	-	80.00	-
BEML	36.87	-	36.87	-	36.87	-
MDL	199.20	-	199.20	-	199.20	-
GRSE	123.84	-	123.84	-	123.84	-
GSL	19.40	-	19.40	-	29.10	-
BDL	115.00	-	115.00	-	115.00	-
MIDHANI	137.34	-	137.34	-	137.34	-
TOTAL	**832.15**	**-**	**832.15**	**-**	**841.85**	**-**

WORKING RESULTS OF DPSUs
VALUE OF PRODUCTION AND SALES

(Rs in Crore)

Name of the PSUs	2003-2004		2004-2005		2005-06	
	Value of Production	Value of Sales	Value of Production	Value of Sales	Value of Production	Value of Sales
HAL	3756.14	3799.78	4984.55	4533.80	5916.62	5341.50
BEL	2807.83	2798.59	3234.97	3212.09	3449.74	3535.99
BEML	1691.86	1765.75	1885.95	1856.01	2179.57	2205.84
MDL	495.77	191.00	540.63	99.54	518.37	164.29
GRSE	486.90	390.76	470.28	881.41	662.18	985.99
GSL	200.83	296.92	141.83	83.49	249.78	106.96
BDL	522.47	524.80	465.79	450.98	534.28	531.53
MIDHANI	116.42	125.13	141.67	131.27	177.60	152.97
TOTAL	**10078.22**	**9892.73**	**11865.67**	**11248.59**	**13688.14**	**13025.07**

Profit After Tax

(Rs. in crore)

Name of the PSUs	2004-05	2005-06
HAL	501.06	771.14
BEL	446.32	582.01
BEML	175.28	186.93
MDL	69.14	60.10
GRSE	27.53	65.53
GSL	9.92	11.50
BDL	27.43	73.49
MIDHANI	6.85	12.03
TOTAL	**1263.53**	**1762.73**

WORKING RESULTS OF OFB

VALUE OF PRODUCTION AND SALES

(Rs in Crore)

2003-2004		2004-2005		2005-2006	
Value of Production	**Value of Sales**	**Value of Production**	**Value of Sales**	**Value of Production**	**Value of Sales**
8259.68	6523.87	8332.00	6186.65	8811.59	6891.68

8

DEFENCE RESEARCH AND DEVELOPMENT

Amphibious Floating Bridge developed by DRDO

The DRDO has emerged as one of the premier scientific and technological organisations in the country with a mission to design, develop and lead to production of state-of-the-art weapon systems, platforms and allied equipment and also to provide combat support for meeting the current requirements of the Armed Forces.

8.1 Defence Research and Development Organisation (DRDO) sprang from a humble beginning in 1958 with an objective to provide in-house capability for Ministry of Defence (MoD) to manage and integrate science and technology across the whole spectrum of its activities and also to build up science and technology based capability to improve performance of the existing weapon systems and other imported equipment and to avoid obsolescence. Later on, in 1970s, it was involved in development of armaments and ammunitions. During 1980s, thrust was given to major programmes like development of guided missiles, electronic warfare systems, aircraft, communication systems, radars, sonars, etc. The Department of Defence Research and Development came into existence in 1980. Over the years, it has grown up multi-directionally. Now, the DRDO has emerged as one of the premier scientific and technological organisations in the country with a mission to design, develop and produce state-of-the-art weapon systems, platforms and allied equipment and also to provide combat support for meeting the current requirements of the Armed Forces. DRDO plays significant roles, like providing scientific and technological advice to the MoD in support of defence policy; as evaluator of defence equipment for the military operational requirements; and generating new technological knowledge to be transferred for development of state-of-the-art weapon systems by the defence industries. The Organisation also advises the Government to make technical assessments of international security threats and the military capabilities of both current and potential adversaries.

ORGANISATIONAL STRUCTURE

8.2 DRDO has a mission-mode structure, headed by the Scientific Adviser to Raksha Mantri (SA to RM), who is also the Secretary, Department of Defence Research & Development (R&D) and Director General, Research and Development. The SA to RM is assisted by the Chief Controllers Naval Systems and Armaments & Combat Engineering; Missiles & Strategic Systems; Aeronautics & Materials Science; Services Interactions; Life Sciences & Human Resources; Electronics & Computer Sciences; and Resources & Management. The Organisation has two tier system, viz. the Technical and Corporate Hqrs at New Delhi; and laboratories/ establishments, regional centers, field stations, etc. located at different stations all over the country.

8.3 **DRDO Headquarters:** DRDO Hqrs, under the Department of Defence Research & Development, is organized in two different types of Hqrs Directorates. Technical Directorates include Directorates of Aeronautics; Armaments; Naval Systems; Combat Vehicles and Engineering; Electronics and Computer Sciences; Materials; Interaction with Services for Business; International Cooperation; Technology Acquisition; Missiles; Naval Research and Development; Life Sciences; Civil Works and Estates; and Technical Examination Cell. These Directorates act as 'single window' to facilitate

laboratories and establishments, functioning under them, in obtaining approvals of new projects from the Government, facilitate in monitoring and review of ongoing projects and also to co-ordinate with other laboratories and directorates. Besides these, Scientific Advisers to Chief of the Army Staff (COAS), Chief of the Air Staff (CAS), Chief of the Naval Staff (CNS) and Deputy Chief of Integrated Defence Staff also act as Technical Directors to render services to their respective Chiefs. Corporate Directorates, like Directorates of Personnel; Human Resource Development; Materials Management; Planning & Coordination; Management Services; Rajbhasha and Organisation & Methods; Budget, Finance & Accounts; Security & Vigilance; Extramural Research & Intellectual Property Rights; and a Centre for Technology Extension & Cooperation assist laboratories in improvement of their infrastructure, creation of new facilities, induction of manpower, answering Parliament Questions, coordinating with other ministries/departments, etc. and also in getting Government approvals for taking up projects in their respective areas. Recruitment and Assessment Centre (RAC) and Personnel Assessment Centre (PEACE) undertake fresh recruitments and assessment on periodic basis for the promotion of scientists and technical staff for all laboratories & Hqrs of DRDO under Defence Research Development Service (DRDS) and Defence Research Technical Cadre (DRTC), respectively.

DRDO executes various programmes/ projects through a network of fifty laboratories/ establishments, field stations, regional centres of military airworthiness, etc. located all over the country.

8.4 **DRDO Laboratories/ Establishments:** DRDO executes various programmes/ projects through a network of fifty laboratories/ establishments, field stations, regional centres of

BrahMos Supersonic Cruise Missile jointly developed by India and Russia

military airworthiness, etc. located all over the country. These are engaged in R&D activities in the field of aeronautics, armaments, missiles, combat vehicles, advanced computing & networking, electronic warfare, life sciences, advanced materials, composites and underwater sensors/ weapons and warship technology. DRDO has two societies, namely, Aeronautical Development Agency (ADA) and Society for Integrated Technology Applications & Research (SITAR). ADA was set up in 1983 at Bangalore to undertake design and development of advanced technology aircraft. SITAR designs digital components and devices required for various projects including high performance computing. Defence Institute of Advanced Technology (DIAT), earlier an establishment of DRDO, attained status of Deemed University in 2005. The Institute organizes courses on wide range of technologies including regular long and short term courses for newly recruited scientists and Post Graduate Programmes to meet defence requirements in general and weapon systems in particular. These are also administered and funded by the DRDO. Gallium Arsenide Enabling Technology Centre (GAETEC) at Hyderabad is a foundry, set up for design, development and fabrication of critical microwave components for various programmes undertaken by DRDO and Department of Space.

Rationalisation of cadre structure, incentive schemes, training policies, enhanced promotional opportunities, exit interviews are some of the mechanisms through which the organisation has endeavoured to ensure optimum utilization of human resource, apart from attracting and retaining best available talents in the country.

HUMAN RESOURCE DEVELOPMENT (HRD)

8.5 DRDO has adopted a policy of dynamic and systematic human resource development. A Human Resource Consultative Body has been constituted to take an integrated approach for development of HRD related policies and strategies for implementation in organisational system. A Manpower Planning Board manages the scientific, technical, administrative and allied cadres. Manpower requirement in all categories for various projects is reviewed periodically. Rationalisation of cadre structure, incentive schemes, training policies, enhanced promotional opportunities, exit interviews are some of the mechanisms through which the organisation has endeavoured to ensure optimum utilization of human resource, apart from attracting and retaining best available talents in the country. The organisation has various schemes for awarding scientists, engineers, technical and administrative staff for their path-breaking research and excellence in performances.

8.6 Every year, scientists are recruited through an annual competitive examination at national level called Scientist Entry Test (SET). In addition to this, talents are also searched through campus interview, scholarship schemes through Aeronautic Research and Development Board (ARDB) and Ph D scholars under Registration of Student with Scholastic Aptitude (ROSSA).

8.7 Manpower Strength: DRDO is a project based Organisation and follows a very dynamic system of manpower planning. Authorised Regular Establishment (RE) is reviewed after every two years to meet the contingent requirements on account of workload and new projects undertaken by the laboratories. At present, the total manpower strength is about 29,000, which includes about 7,500 engineers and scientists, 11,500 scientific and technical staff and 10,000 supporting staff from various cadres. About 700 fresh engineers and

scientists are being inducted every year.

8.8 **Knowledge and Skills Upgradation:** DRDO carries out Research and Development (R&D) activities in multidisciplinary areas. Keeping changing scenario at the global level in view, various training programmes are organized all over the country. Under the continuing education programme, 165 courses were organized by DRDO labs/ establishments in different disciplines. Under Research and Training scheme, a total of 88 personnel have been sponsored to undergo M.E./ M.Tech courses in various disciplines at IIT, IISc and other engineering institutions of repute. Defence Institute of Advance Technology (DIAT), Pune caters to advanced technology training needs in the area of armaments; Institute of Technology Management (ITM), Mussoorie provides advanced managerial training to the scientists, technologists, managerial staff and Service personnel. Another centre at Jodhpur imparts training to administrative and allied cadres. HRD Cells have also been set up in each laboratory and establishment to provide in-house training to the scientific and technical staff on various specialized subjects.

Under the continuing education programme, 165 courses were organized by DRDO labs/ establishments in different disciplines for various categories. Under Research and Training scheme, a total of 88 personnel have been sponsored to undergo M.E./ M.Tech courses in various disciplines at IIT, IISc and other engineering institutions of repute.

Bridge Layer Tank on MBT Arjun

PROJECTS MONITORING AND REVIEW MECHANISM

8.9 DRDO undertakes mission mode projects involving deliverables for the Services, technology development projects to develop technology demonstrators, science and technology projects for emerging technologies and infrastructure projects for setting up infrastructure facilities. To execute these projects, DRDO interacts with Defence Public Sector Undertakings, R&D laboratories, private entrepreneurs, etc for availing the best talent and expertise in the country. To complete the projects, "concurrent engineering" approach has been adopted in technology intensive projects to minimize time lag between development and productionisation of the systems.

8.10 DRDO has instituted several review mechanisms to monitor programmes and projects regularly. There is an in-house apex level body called "DRDO Research Council" (DRC), chaired by the Scientific Adviser to Raksha Mantri, to review the progress of major ongoing projects in all the labs/ estts. In addition, Corporate Reviews covering techno-managerial aspects are also carried out by a high level committee for the improvement of health of labs/ establishments. Staff projects for Army are reviewed by the Vice Chief of Army Staff, twice a year. For all major programmes/ projects, there are multi-tier "Programme Management Boards", having representation from the Services, DRDO laboratories and in some cases from academic institutions and other national research laboratories. These Boards periodically monitor and review the programmes and help in early detection of bottlenecks and suggest mid-course corrections.

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DRDO has made great strides towards making the country self-reliant in the areas of military technology. Over the past few decades, it has enabled our Armed Forces to progressively enhance their combat effectiveness through development of the state-of-the-art weapon systems and technologies.

PROGRAMMES AND PROJECTS

8.11 DRDO had made great strides towards making the country self-reliant in the areas of military technology. A number of systems and equipment have been developed, productionised and inducted into the Services in the past categorized broadly into major disciplines, like missiles, aero-systems, electronic systems, combat vehicles, armaments, naval systems, advanced materials, and life sciences. Progress of some of the leading programmes and projects during the current financial year is given in succeeding paragraphs.

(A) **Missile Programmes:** Integrated Guided Missile Development Programme (IGMDP) was sanctioned in 1983 for design, development and productionisation of different types of state-of-the-art missiles to

provide self-reliance in this high technology field. Technological goal of this Programme was to ensure that the systems will be contemporary at the time of their induction into the Services. The Programme envisaged the design and development of missile systems, Prithvi, Trishul, Akash and Nag. In addition, development of Dhanush, Agni, BrahMos and Astra series of missiles have also been taken up. The status of various missiles is as under:

Integrated Guided Missile Development Programme (IGMDP) envisaged the design and development of missile systems, Prithvi, Trishul, Akash and Nag. In addition, development of Dhanush, Agni, BrahMos and Astra series of missiles has also been taken up.

(a) **Prithvi Missile:** Prithvi, a tactical battlefield Surface-to-surface missile, has two versions of ranges 150 km & 250 km with about 1 tonne and 500 kg payloads, respectively. Army version of Prithvi has already been inducted into the Indian Army. Air Force version of Prithvi missile is under induction. Design and development of composite warheads for Prithvi missile consisting of pre-fragmented incendiary, blast cum earth shock submunition have been completed. Production order for these warheads has been placed on Directorate General of Ordnance Factories (DGOF).

(b) **Agni-I Missile:** With a range of 700 km, surface-to-surface Agni-I missile has single stage solid rocket motor and can carry one

Pinaka Multi-Barrel Rocket Launcher

tonne warhead. It can be configured to fire from road/ mobile launcher. With the development of Agni-I, the range gap between Prithvi-II & Agni-II has been bridged. Agni–I has been inducted into Services.

(c) **Agni-II Missile:** The range for Agni-II is more than 2000 km. The salient features of the test firings are mobile launch capability, multi-staging, state-of-the-art control and guidance, re-entry technology and sophisticated on-board packages including advanced communication. Agni–II has also been inducted into Services.

(d) **Dhanush Missile:** It is a Naval version of Prithvi missile with a range of 250 km and a payload of about 500 kg. It can carry both conventional as well as non-conventional warheads. Indian Navy has accepted to have Dhanush on its off shore Patrol Vessel (OPV). The process of weaponisation of INS Suvarna with the Dhanush missile is now complete.

(e) **Akash Missile:** Medium range (25 km), surface-to-air missile, Akash has multiple target handling capacity with digitally coded command guidance system. Electronic Warfare trials evaluation have been completed. Battery Level Radar – III on T-72 chassis are under various stages of fabrication. Development of Akash weapon system is now complete. The technology transfer documents with quality norms are also ready and the weapon system can be productionised after Users' trials and induction phase.

BrahMos (a Joint Venture with Russia) is the best in the family of cruise missiles. The system has been accepted by Indian Navy for induction in their ships. The Army version was successfully flight tested on November 30, 2005 and May 31, 2006.

(f) **Trishul Missile:** It is a low level quick reaction surface-to-air missile for the Indian Army, Air Force and Navy. So far, 82 successful developmental flight trials have been conducted, including 3 trials during the current year providing warhead performance, repeated guidance performance capability and salvo firing capability. With the completion of above flight trials, the design and development of the Trishul Missile is complete.

(g) **Nag Missile:** Nag is a third generation anti-tank missile with "top-attack" and "fire and forget" capability. So far, 62 developmental flight trials have been carried out including 5 flight trials during 2006. The last four User assisted flight trials were undertaken from Pokharan range to show the missile capability at 4 km and 2 km range in day and night on actual target (Derelict Vijayanta Tank).

(h) **BrahMos Supersonic Cruise Missile:** BrahMos (a Joint Venture with Russia) is the best in the family of cruise missiles. It has supersonic speed with a range of 290 km and high level of performance. Starting from 2001, several flight trials have been carried out to test the missile system from land mobile complex and from naval warship against sea and land targets. There have been 11 flight trials and all the flight trials have been successful. The missile armed with a live warhead, impacted on the target ship accurately, destroying it completely. The flight also demonstrated the indigenously developed Fire Control System. The system has been accepted by Indian Navy for induction in their ships. The Army version was successfully flight tested

on November 30, 2005 and May 31, 2006.

(i) **Astra Missile:** Astra is a beyond visual range, air-to-air missile being indigenously designed and developed to engage and destroy highly manoeuvering supersonic aerial targets. It has a range of about 80 km and designated to be a missile for LCA and other Indian Air Force fighter aircraft. Five seekers have been tested for performance.

A multi-role fighter aircraft, Tejas, is being designed and developed by Aeronautical Development Agency (ADA), Bangalore. LCA belongs to light category of aircraft with all-up weight (AUW) of 12,000 kg with modern weapons and avionics system on board.

(j) **Long Range Surface-to-Air Missile (LRSAM):** It is joint development programme of DRDO, Indian Navy and IAI, Israel. It has a range of 70 km using dual pulse rocket motor and active radar seeker in terminal phase and inertial/ mid-course update for guidance.

(B) **Aeronautical Systems:**

(a) **Light Combat Aircraft (LCA), Tejas:** A multi-role fighter aircraft, Tejas, is being designed and developed by Aeronautical Development Agency (ADA), Bangalore. LCA belongs to light category of aircraft with all-up weight (AUW) of 12,000 kg with modern weapons and avionics system on board. It incorporates advanced technologies such as unstable aerodynamics to provide higher agility,

BrahMos Supersonic Cruise Missile

digital fly-by-wire flight control system, advanced avionics, multimode radar and composite materials in order to meet the long term operational requirements specified by Indian Air Force (IAF). IAF has placed an order on Hindustan Aeronautics Limited (HAL), worth Rs. 3,000 crore, for procuring 20 LCA to form one Squadron of their fighting force.

(b) **Light Combat Aircraft (LCA) for Navy:** Development of LCA, Tejas gave a spin-off for similar type of aircraft, with modification, for Indian Navy. The project to develop LCA for Navy was sanctioned in the year 2003 which is to be completed in March 2010. The project cost is Rs. 948.90 crore in which DRDO's share is Rs. 561.67 crore and share of Navy is Rs. 387.23 crore. LCA Naval version will have modified version of landing gears and nose droping down to an angle of 4 degrees.

(c) **Kaveri Engine for LCA:** The scope of the project is to design, develop, test and type certify the Kaveri engine to meet the specific needs of the LCA. Design of the engine, sub-systems, and components has been completed and sixteen Kaveri engines and equivalent sets have been fabricated. Kabini (Kaveri Core Engine) has also been tested on the high altitude test bed in Russia where it was established that the thrust and fuel consumption performances were close to the design intent. As on date, a total of about 1500 hours of testing has been carried out on these prototype engines. Jet Fuel Starter (JFS) system for starting Kaveri engine has been indigenously developed by HAL, with assistance from Gas Turbine Research Establishment (GTRE), Bangalore and is being integrated with Kaveri engine at GTRE, Bangalore.

This has been developed primarily to carry out surveillance, reconnaissance, real-time engagement of target by artillery fire, laser designators and limited electronic intelligence. An order worth Rs 280 crore has been placed on DRDO, which in association with HAL will produce the Vehicles.

(d) **Kaveri Engine for Naval Ship:** Kaveri Marine Gas Turbine (KMGT) was tested at the Naval Facilities at Vizag and engine performed satisfactorily in the desired environment. Presently, turbine blade and engine volute are being modified to achieve the desired output of 19.5 MW.

(e) **Arrester Barrier:** DRDO developed 20 Ton arrester barriers have been installed at various Air Force bases. Presently, an order of 40 ton class arrester barrier has been placed by IAF on Aerial Delivery Research & Development Establishment (ADRDE), Agra. These arrester barriers will be installed at 6 IAF bases, which will be operating sophisticated aircraft-SU 30 MKI.

(f) **Combat Free Fall (CFF) Parachute:** These have been developed for deployment of Army troops in enemy area for meeting any contingencies during war and peace time. System consists of protective clothing and parachute which can withstand the conditions upto a height of 30,000 feet. User trials have been completed for induction of the system in Indian Army.

(g) **Remotely Piloted Vehicle (RPV), Nishant:** This has been developed primarily to carry out surveillance, reconnaissance, real-time engagement of target by artillery fire, laser designators and limited electronic intelligence. The project has been completed successfully on the Qualitative

Requirements (QRs) specified by the Indian Army. An order worth Rs 280 crore has been placed on DRDO for production of the Vehicles in association with HAL.

(h) **Early Warning Suite for Fighter Aircraft (EWSFA):** It consists of an integrated warning system and a jammer to be integrated and mounted inside the aircraft. The basic purpose of the system is to warn pilot, during flight, for any threat either from ground or from air and to provide jamming of the identified threat. This system is being integrated in MIG 27 upgrade and LCA aircraft. Major activity relating to MIG 27 aircraft has been completed, which includes laying of looms in production aircraft.

(i) **Upgrade of MIG 27 Aircraft:** DRDO undertook the task of upgradation of avionics of MIG 27 aircraft with HAL and successfully completed the integration in two flight test aircraft during the year. Line Replaceable Units (LRUs) like Core Avionics Computer (CAC) and Backup Core Avionics Computer (BCAC), Laser Designation Pod (LDP), Photo Recee Pod, Multi Functional Displays (MFDs), etc have been integrated with required upgrade in software.

(j) **Airborne Early Warning & Control (AWE&C) System:** The programme was sanctioned by Government on October 6, 2004 at an estimated cost of Rs. 1800 crore with a time frame of 78 months for commencement of user trials. Development of 1 prototype and 2 operational executive jet based AEW&C systems is envisaged.

(k) **Hypersonic Technology Demonstration Vehicle (HSTDV):** HSTDV is a first

BrahMos - Universal Vertical Launching System on top of Ship mock-up model

technology demonstration project in the Hypersonic area undertaken by DRDO. Overall HSTDV system design review has been completed. Aerodynamic configuration has been evolved. Scramjet engine test facility has been established and the structural design of the airframe has also been completed.

(C) **Electronic Systems:**

(a) **Integrated Electronic Warfare Programme, Samyukta:** It is a joint programme of DRDO and Indian Army. This programme is software and integration intensive and meant for indigenous development of an integrated EW system covering 1.5 MHz – 40 GHz. It has communication (Com) and Non-communication (Non-com) segments. The system comprises vehicles having the capabilities for surveillance, interception, monitoring, analysis and jamming of all communication and radar signals.

Com Segment: Core system has been successfully demonstrated to the Indian Army who placed order on Bharat Electronics Limited for production of three Com Control Center (CC) blocks at a total cost of Rs 425 crore. Two Comunication Control Center blocks had been productionised and delivered to the users after successful demonstration and user trials.

Non-com Segment: Core system demonstration consisting of Control Center (Non-com) Electronic Support Measures, Electronic Counter Measures-low and high frequency entities have been successfully demonstrated to the Indian Army. As a result, the Army has placed an order on Bharat Electronics Limited for production of two Non-com Control Center blocks at a cost of Rs. 430 crore.

(b) **Electronic Warfare (EW) Programme, Sangraha:** It is an integrated EW system for Indian Navy consisting of five EW systems for the different platforms - Kite for Kamov and Chetak helicopters, Eagle for Dornier aircraft and Advance Light Helicopter (ALH), Homi for TU -142 aircraft, Porpoise for EKM submarines, and Ellora for frigates.

(c) **Sujav:** It is a compact communication electronic warfare suit. The system has got direction finding, search and monitoring capabilities covering 30-1000 MHz and jamming in 30-500 MHz frequency range. The system was deployed in J&K by Army and Rajasthan sectors achieving satisfactory performance. Indian Navy has also placed order for the production of 8 such system (called Drishti) for off shore and on shore applications. Indian Army has placed order for 7 Sujav clusters consisting of three Electronic Support Measure (ESM) and one Electronic Counter Measure (ECM) station. One Sujav clusters system has been successfully evaluated in North East and Jammu region.

(d) **Low Level Light Weight Radar, Bharani:** This is a battery powered compact radar which provides 2D surveillance solution for Army Air Defence weapon systems, mainly in mountainous terrain against hostile aerial targets, like Unmanned Aerial Vehicles (UAVs), Remotely Piloted Vehicles (RPVs), helicopters and fixed wing aircraft flying at low and medium altitudes. The radar can be transported by vehicles, mules or group of men. It acts as an early warning system to air defence weapon system. The system is undergoing user evaluation.

(e) **Weapon Locating Radar (WLR):** Weapon Locating Radar is developed based on the proven Rajendra radar technology. Its

primary roles are location of enemy guns, mortars and rocket launchers and own fire direction. The system is developed as a joint collaboration between DRDO and Bharat Electronics Limited. Its sub-systems have been fabricated by BEL based on the design of DRDO and delivered for integration to DRDO. The system is undergoing user assisted trials.

(f) **Three- D Surveillance Radar System, Revathi:** It is medium range 3D-surveillance radar to be fitted in ASW Corvette class of ships to detect air and sea surface targets. The radar is based on proven 3 Dimensional-Central Acquisition Radar (3D-CAR) technologies. Basic objective is to realise a production ready 3-dimensional radar meeting Naval requirements. The system is realized through tri-partite agreement involving Bharat Electronics Limited as the production agency, Larsen & Toubro for antenna stabilisation and other mechanical sub-systems and DRDO as designer and system integrator.

(g) **Multifunction Phased Array Radar, Rajendra:** It has been developed to provide detection and tracking of multiple aircraft targets, tracks and provides command guidance of Akash missiles. Three versions of the radars have been developed. Rajendra-I is mounted on modified BMP vehicle with fixed antenna, Rajendra-II on the modified BMP vehicle with slewable antenna while Rajendra-III on T-72 vehicle.

(h) **Combat Net Radio for Armoured Fighting Vehicle (AFV):** Army had placed order for 500 radios and these have been delivered by Bharat Electronics in May/ June 2006 at an approximate cost of Rs. 34.0 crore.

Bridge Layer Tank and Amphibious Floating Bridge & Ferry System

(i) **Command Information Decision Support System (CIDSS), Samvahak:** It is a Corps to Battalion level decision support system to collect, collate, process and disseminate information between commanders of various formations. The project has been successfully completed on December 31, 2006.Technology has been transferred to Bharat Electronics Limited which is porting the system on the designated Army Formations.

(j) **Samrat:** It is a technology development project for the design and development of indigenous communication EW receivers for search, monitoring, direction finding (single and multi-channel), analysis and decoding in the High Frequency, Very High Frequency and Ultra High Frequency ranges along with associated system control and FLI GENERIC software. Technology has been developed for compact low noise, high dynamic range HF (0.5-30 MHz) and V/UHF (20-3000 MHz) search-cum-monitoring receivers for COMINT. State-of-the-art Narrow Band Signal Classifier, Demodulator and Decoder Sub-system have been successfully developed.

This is the first time in the country that MEMS pressure sensors and accelerometers have been developed for missile applications.

(k) **Portable Non Lethal Dazzlers (PNLD):** Two versions of PNLDs are suitable for counter insurgency operations. These two versions have maximum operation ranges from 50m for hand held and 500m for weapon mounted systems. Both the variants have an integrated low power red laser beam for aiming in twilight and dark conditions. Weapon mounted variant has an integrated day sight also. All the variants are completely non-lethal and produce randomly flickering green laser output to cause a temporary dazzling effect and have an inbuilt safety interlock to prevent misuse.

Production of state-of-the-art MBT Arjun has been streamlined. Heavy Vehicles Factory of (Ordinance Factory Board) OFB is fully geared up to manufacture all 124 tanks against the present Army indent under technology transfer mode from DRDO.

(l) **MEMS-based Pressure Sensors and Accelerometer:** Micro Electro Mechanical System (MEMS) based pressure sensors for pressures of 10 and 30 bars have been developed, packaged and qualified for missile applications. Similarly MEMS based accelerometers for acceleration level of 10 and 30 g have been fabricated and performance demonstrated. This is the first time in the country that MEMS pressure sensors and accelerometers have been developed for missile applications. MEMS-based Rate Gyro of grade 10 degree/hr would be produced by mid-2007.

(m) **Ring Laser Gyroscope (RLG):** Design and development facility for Ring Laser Gyroscope has been established and prototype has been fabricated and qualified.

(n) **Electronic Hydro Servo Valve (EHSV):** Servo valve manufacturing facility for fabrication of servo valves for Prithvi, GSLV and LCA has been established. These valves are banned items from USA and Europe.

(o) **Fiber Optic Gyroscope (FOG):** Gyroscope of 10 degree/ hour has been developed and qualified. This has been successfully tested in MBT Arjun.

(D) **Combat Vehicles and Engineering:**

(a) **Main Battle Tank (MBT), Arjun:** Production of state-of-the-art MBT Arjun has been

streamlined. Heavy Vehicles Factory of OFB (Ordinance Factory Board) is fully geared up to manufacture all 124 tanks against the present Army indent under technology transfer mode from DRDO. After successful User validation trials during summer 2006, five tanks have been handed over to Army in June 2006. Unit Maintenance Vehicle (UMV) and Unit Repair Vehicle (URV), developed by DRDO, as a support vehicle for MBT Arjun, have been cleared for induction into Army.

AERV is an all terrain, all weather engineer reconnaissance platform capable of acquiring accurate data for a variety of combat engineering tasks such as bridging, breaching and track construction. An order for sixteen vehicles has been placed by the Indian Army.

(b) **Combat Improved Ajeya (CIA):** Transfer of technology of CIA to Heavy Vehicle Factory (HVF), Avadi has matured. So far, 268 CIA tanks have been manufactured. These tanks are fitted with Explosive Reactive Armour (ERA) for enhanced protection, accurate Global Positioning System (GPS) for navigation of the tank and reconfigured Smoke Grenade Discharger (SGD).

(c) **Armoured Ambulance:** After the development of ambulance, Indian Army had placed an indent for manufacture of 50 numbers on Ordnance Factory, Medak and these are under production.

(d) **Bridge Layer Tank (BLT) T-72:** Production of 12 BLT T-72 is under progress at HVF, Avadi. Four tanks have been handed over to Army and the balance is likely to be completed by mid-2007.

(e) **Carrier Mortar Tracked (CMT) Vehicle:** The CMT Vehicle has been designed to mount and fire 81 mm Mortar from within the vehicle. An indent for 198 numbers was placed by the Indian Army on Ordnance Factory, Medak at a cost of Rs. 284.54 crore. All the vehicles have been manufactured and issued to Indian Army.

(f) **Infantry Combat Vehicle (ICV), Abhay:** The prototype of Abhay, realized under a multi disciplinary, multi-lab technology demonstration programme, has been put through extensive mobility and firing trials to prove its automotive and armament sub-systems. The successful development programme has imparted a boost to the self-reliance in defence technology. The technologies developed, such as fire control system, composite armour, hydro-pneumatic suspension and host of other automotive and armament sub-systems can be adopted for futuristic ICV and light tracked vehicle projects.

(g) **Armoured Engineering Reconnaissance Vehicle (AERV):** AERV is an all terrain, all weather engineer reconnaissance platform capable of acquiring accurate data for a variety of combat engineering tasks such as bridging, breaching and track construction. The vehicle is equipped with state-of-the-art instrument systems that enable terrestrial and under water survey in hatch down condition. An order for sixteen vehicles has been placed by the Indian Army. Ordnance Factory (OF), Medak and BEL are the prime production agencies. Six AERVs have been supplied so far and complete delivery is planned by mid-2007.

(h) **Armoured Amphibious Dozer (AAD):** It has been designed to carry out earth moving tasks under combat environment to enhance mobility of the forces. An order

for six vehicles has been placed by the Army. Pilot vehicle is under manufacture at OF, Medak.

(i) **NBC Recce Vehicle:** The NBC Recce vehicle, based on BMP-II, has been developed for conducting survey of radiological and chemical contaminated areas. The equipment has been approved for induction into Services. Army has placed an order for eight vehicles.

(j) **Propelled Mine Burrier:** The project was taken up to develop a Self Propelled Burrier on high mobility carrier vehicle for laying/ burying indigenous influence mine Adrushy Mk-I, Adrushy Mk-II, NDMK-I & HPD F2 anti tank mines. Engineered prototype of the system has been realized which can lay four types of anti tank mines.

(k) **Automated Mobile Platform for Multipurpose Payload:** The project entails development of a remote control vehicle capable of being driven over a range of 500m line-of-sight both in cross-country and urban environment. Developing Remotely Operated Vehicle (ROV) with stair climbing capability, six degree of freedom manipulator arms actuated by slewing ring bearing and remote operation of payloads integrated on ROV has been completed successfully. Two prototypes have been realized. Project has been successfully completed after technical trials.

(l) **Modular Bridge, Sakav:** This project envisages development of a mechanically launched single span modular bridging system based on TATRA vehicle for deployment in all terrains. The span of the Bridge ranges from 14m to 46m. 20m system has been realized and design verification trials conducted. 46m Bridge superstructure has also been realized and testing under simulated load condition completed.

(m) **Counter Mine Flail on T-72 Tank:** This project envisages to develop flail system on T-72 Tank Chassis to breach a mine field and create a vehicle safe lane of 4m width. First system on Tank based simulator has been realized and technical trials have been completed successfully.

(n) **Mountain Weather Forecast:** A network of meteorological observatories and Automatic Weather Stations (AWS) has been established in various sectors of Jammu & Kashmir, Siachen and Himachal Pradesh in order to capture the weather systems spatially and on real-time basis. Based on the data provided by meteorological observation network, three days weather forecast is issued for the entire western Himalaya including Siachen. A seven-day forecast is given to Army for Kashmir Valley region. Two mountain meteorology centers have been set up at Srinagar (Kashmir) and Sasoma (Siachen) to analyze the weather locally and for dissemination of the forecast to the end-users.

(o) **Automatic Pit Profiling:** The snow cover distribution is inherently non-homogeneous due to local climatic and topographic difference. The knowledge of spatial variability of the snow cover and underlying weakness is essential for the understanding of avalanche formation mechanism. Snow and Avalanche Study Establishment (SASE) has developed software 'SNOWPACK PRO' for obtaining the information regarding internal snow-pack structure and its spatial and temporal variability from the output of high resolution SnowMicroPen.

(E) **Armaments:**

(a) **Multi Barrel Rocket System (MBRS), Pinaka:** The system comprises launcher, loader-cum-replenishment vehicle and command post with fire control computer mounted on Kolos Tatra 8 X 8 (high mobility vehicle). The system is characterized by "Shoot and Scoot" capability with high rate of fire. It can fire a salvo of 12 rockets in 40 second. It is an area saturation weapon with a maximum range of 37.5 km and it is much superior to comparable systems available in the world. General Staff evaluation has been completed. Users have recommended the system for induction into Services. Army has a plan to induct Pinaka weapon system initially for 2 regiments having a production value of approximately Rs. 1300 crore.

Army has a plan to induct Pinaka weapon system initially for 2 regiments having a production value of approximately Rs. 1300 crore. Orders for vehicles/launchers have been placed on the trade.

(b) **Under Barrel Grenade Launcher (UBGL):** DRDO has developed a UBGL compatible with 5.56 mm INSAS and AK-47 rifles. User trials have been completed and Troop trials at three terrains have also been conducted successfully during this year. The last one was in desert terrain.

(c) **Influence Mine Mk II:** State-of-the-art Influence Mine Mk-I to provide a full width attack to immobilize a present day battle tank was already developed by the DRDO. The intelligent anti tank mine incorporating active Influence Fuze Mk II is India's answer to ever-increasing threat posed by the adversary's battle tanks. The design and development of Mk II version of this mine with higher intelligence has been completed. All Transfer of Technology (ToT) documents have been completed. An indent for 20,000 mines at a cost of Rs. 96.76 crore has been placed by the Army.

(d) **Modern Sub Machine Carbine (MSMC):** Development of MSMC, which is a part of Indian Small Arms System (INSAS) family, was taken up by DRDO. Various aspects like, functioning, accuracy, penetration, etc. were demonstrated to the users. User trials were conducted successfully in June 2006.

(e) **High Pressure Closed Vessel System for Evaluation of Gun Propellants:** A system comprising closed vessel and instrumentation has been designed and developed successfully for recording of pressure up to 800 Mpa. Closed Vessel (CV) firings up to a loading density of 0.45 g/ml were carried out successfully.

(f) **Multimode Hand Grenade:** Hand grenade has been developed which uses preformed cylindrical mild steel fragments to achieve uniform distribution. Success rate of >95% was achieved as required by users. Troops trials have been successfully conducted.

(g) **Bund Blasting Device (BBD):** With a view to hastening the process of forward movement of Army, DRDO has successfully developed a man portable device called BBD. Army has placed an indent for supply of 240 sets (1440 units).

(h) **Pitch-based Activated Carbon Spheroids:** Pitch Based Activated Carbon Spheroids has been developed for adsorption of toxic warfare gases. Activated Carbon Spheroids is a strategic adsorbent material and essential for the protection of armed forces in the event of a chemical war.

(F) **Naval Systems:**

(a) **System Simulation using Distributed Computing, Darpan:** System level simulation capability has been established for the sonar system and its environment on a distributed computing environment under Project Darpan. Simulation models developed can be run either as sequential or as parallel programmes. Ported models are collected as library of components and made available for System level simulation.

(b) **Fire Control System:** It replaces the Russian System of the ship with the state-of-the-art modular system capable of firing 6000 rockets and torpedoes of the platform. The indigenous system costs Rs. 4 crore as against Rs. 30 crore for the foreign system. Helicopter Fire Control System (HFCS) has also been developed and delivered to HAL to incorporate in the Naval Light Helicopter. The approximate cost of indigenous HFCS system is Rs. 40 lakh as against Rs. 300 lakh for an imported system.

(c) **Light Weight Mine:** Design and development of Light Weight Mine has been taken up for shallow (coastal) waters applications. The development of all the sub-systems of Light Weight Mine has been completed. System integration is being done for evaluation in Harbour and Sea trials.

(d) **Acoustic Silencer:** An acoustic enclosure for 500 kw Diesel Alternator has been designed, fabricated and installed on board INS RANA. Naval HQs evaluated and recommended for implementation on future ships under design. Acoustic Silencers for engine room blowers have been designed, fabricated and fitted on board INS RANA for noise attenuation. Navy has accepted the items and recommended for consideration in all ships.

(G) **Advanced Materials:**

(a) **Polymeric Rubbing Fenders:** These fenders have been developed as a better substitute of teak wood to protect hull structures from impact. The material is a combination of polymers and has both rigidity and resilience. Indian Navy has inducted the item.

(b) **Thixotropic Pigmented Paint:** The paint when applied under immersed condition dries within 3 hours and subsequent coat can be applied after 4 hours. A portable hand held applicator device for application of the paint has been developed.

(c) **Dynamic Seals and Rubber Holders:** Twelve types of dynamic seals have been developed for Kaveri engine nozzle hydraulic assembly, which have performed satisfactorily in rig trials tests for 10,000 cycles.

(d) **β Titanium Alloy for Orthopedic Implant Application:** A titanium alloy (containing Niobium, Tantalum and Zirconium) has been melted successfully with high strength and low modulus. It is expected to have biocompatibility for implant applications much better than alloy Ti_6Al_4V.

(e) **Active Metal Brazing Alloy:** Bonding ceramic to metal is an important requirement in a number of defence and other strategic applications. The bonding is achieved by using an 'active' metal brazing alloy containing Titanium. DRDO has successfully developed one such alloy containing Silver, Copper & Titanium. Foils of 0.1mm thickness have been produced through a combination of hot and cold rolling.

(f) **Electromagnetic Absorber Coatings and Panels:** The DRDO has developed absorber coatings of 3-3.5 mm thickness which have reflection loss minimum 20 dB in 8-18 GHz and 10dB in 6.5–8.0 GHz frequency regions and the absorber panels of 12.5 mm thickness have reflection loss minimum 15dB in 8-18 GHz frequency region. In panels of 25 mm thickness, the reflection loss of minimum 20 dB in 7-18 GHz and 10 dB in 2–7 GHz frequency region has been achieved.

(g) **Nickel Coated Glass Fiber Chaff for 94 GHz Radar:** A low cost indigenous method has been developed for coating the glass fibers with Nickel having electrical resistance of less than 20 ohm/cm. Such metal-coated fine glass fibers are the most advance chaff material available internationally. At present, Air Force and Navy are importing the material.

(h) **Rapid Repair of Runways:** The user's trials for Rapid Repair of Runways were conducted successfully at AF Station, Lohegaon, Pune. It aimed at evaluation of Pavement Classification Number (PCN – Air Force specification) of the repaired trial slab and testing of standard cubes and beams casted at trial site to check the feasibility of Fast Setting & High Strength Resin System, for Rapid Repair of Runways & ALGs under ambient temperature conditions.

To provide emergency treatment to soldiers affected by HAPO operating at high altitudes, DRDO has developed a HAPO bag. An upgraded version has recently been tried successfully at HAMRC, Leh and Kardungla.

(i) **Two Dimensional (2-D) Imaging Thermal Target:** Two dimensional imaging Thermal Target in actual size (1:1) of T-72 tank has been developed for the first time in India. It represents thermal profile of an actual tank. Four such targets were supplied and successfully demonstrated during field trials of 3rd generation heat seeking NAG Missiles.

(j) **Synthetic Life Jacket Mk-1:** A production order of the Indian Army for 15,000 numbers of Synthetic Life Jackets, Mk-1 has been executed.

(k) **Nuclear Defence Systems:** Order for Limited Series Production (LSP) of 8 NBC Recce Vehicles costing Rs. 47.44 crore and 16306 Radiac meter Personal Locket Dosimeters and 135 Reader for Radiac meter Personal Locket Dosimeters costing Rs. 7.63 lakh have been received from the users and are at different stages of execution.

(H) **Life Sciences Systems/Products:**

(a) **High Altitude Pulmonary Oedema (HAPO) Bag:** HAPO is a hazard associated with rapid ascent to altitude higher than 2700m. To provide emergency treatment to soldiers affected by HAPO operating at high altitudes, DRDO has developed a HAPO bag. The upgraded version of the same has been recently successfully tried at HAMRC, Leh and Kardungla.

(b) **Combat Free Fall Oxygen System and Protective Clothing:** It has been developed for paratroopers consists of pre-breather console, portable bailout oxygen system, demand oxygen regulator and oxygen mask, helmet, jumpsuit, gloves, boots, goggles, jack-knife. The system has undergone successful user trials and shall go for production.

(c) **Water Testing Kit:** Field kit has been developed for analysis of water sample for drinking purposes. The kit is provided with

Reagents for 100 tests. The tests are semi-quantitative and on accept/ reject basis. It provides tests for PH, turbidity, total hardness, chloride, iron, fluoride, nitrate, residual chlorine and coliform bacteria. The kits are cheap, convenient to carry on hill-top and tests can be performed by semi-skilled persons.

(d) **Air Crew Survival Jacket:** It is worn as the outermost garment over normal flying overall that houses personal Rescue Beacon (PRB) which is activated automatically/ manually by the pilot in the event of an emergency ejection and aids to quickly trace the geographical location of the ejected pilot. The user trials of Aircrew Survival Jacket for Mirage 2000, Jaguar, Kiran Mk I & II, Kiran Mk IIA and HPT-32 have been completed. The item has been accepted for induction into service.

(e) **Ration Scales of Armed Forces:** Existing ration scales in all the 3 wings of the defence forces were reviewed for (i) Army: Part I – at plains, high altitude (9000-15000 ft), extreme altitude (>15000 ft) Part II – under desert Conditions and Part-III – During basic military training (ii) Navy: sailors, submarines, marine commandoes & divers and (iii) Air Force.

(f) I**nduction of Standardized Yoga Package in Defence Forces:** Yoga package for Navy developed to promote performance was inducted in the Western and Eastern Naval Command. Around 100 personnel at each formation have been trained as Yoga instructors.

(g) **Automatic Chapati Making Machine:** Five automatic chapatti making machines and dough kneader were installed at different units and users were trained in operation and maintenance of the same. The machines were installed at RR Hospital, New Delhi, Tpt Coy ASC, New Delhi, HQrs 9 Corps, Jyole, HP, DRDL, Hyderabad and DFRL, Mysore.

INTERACTION WITH SERVICES

8.12 To interact with Services and business development, a position of Chief Controller Research & Development has been created in DRDO HQrs. The objective is to bring in more focus the interaction between DRDO, the three Services including HQrs Integrated Defence Staff (HQIDS) and the set up of DG (Acquisition) in MOD to align the various projects and programmes of DRDO with those of Long Term Prospective Plans and immediate needs of the Services.

INTERACTION WITH INDUSTRIES AND TECHNOLOGY TRANSFER

8.13 Continuing the tradition of transferring dual use technologies developed by DRDO to the industry for commercial exploitation, several technologies have been transferred during the year. Some of the important ones are : Aloe Vera Cream (ALOCAL), Multipurpose Dry Chemical ABC Powder, Report Pouch Processing Technology, NBC Filter-FAS RV 220M, Polymeric Rubbing Strakes & Poly List Dock Blocks, Polyoxy Propylene Triol & Triacthylene Glycol Dimethacrylate, Polyurethane Sealant, Acoustic Rubber Tiles, Field Water Testing Kit, Palladium Impregnated Carbon & Impregnated Carbon, Depa Technical and Depa Spray.

DRDO maintains close liaison with industries by way of transfer of technologies. Continuing the tradition of transferring dual use technologies developed by DRDO to the industry for commercial exploitation, several technologies have been transferred during the year.

PARTICIPATION IN NATIONAL AND INTERNATIONAL EXHIBITIONS

8.14 DRDO has been regularly participating in important exhibitions at the national and international levels. During the year, DRDO participated in DEFEXPO India 2006, besides other events such as Aerodrome India, IITF 2006, etc. Major International exhibitions in which DRDO products were exhibited during 2006 are the Asian Aerospace and Defence Exhibition at Singapore, Defence Service Asia 2006 at Kualalumpur and Africa Aerospace and Defence Exhibition at Cape Town, South Africa.

FOREIGN COLLABORATION

8.15 At present, DRDO has MOU/ Agreements with 33 countries for collaboration in the field of defence technologies. The major foreign partners with DRDO are Russia, USA, France, Israel, Germany, UK, Singapore, Kazakhstan and Kyrgyzstan. The areas of collaboration are: missile technologies, avionics and aircraft technologies, microwaves, laser systems, new materials, nano-materials, stealth, hypersonic and naval systems. While all collaborations with foreign countries are made under the overall supervision of the Ministry of Defence, DRDO has Joint Working Groups for collaboration with its major foreign partners. The annual meetings of three such groups, viz., Indo-US Joint Technology Group, Indo-Russian R&D Sub-Group and Indo-Israel Managing Committee, are being organized regularly.

BASIC RESEARCH

8.16 Four Research Boards are functioning in DRDO to provide thrust to basic research in areas of strategic importance. These are: Aeronautical Research & Development Board (AR&DB); Armament Research Board (ARMREB); Naval Research Board (NRB); and Life Sciences Research Board (LSRB).

8.17 **Aeronautical Research & Development Board (AR&DB):** The AR&DB was established in February 1971. The board is currently funding 95 projects with a ceiling of Rs 5 crore per year in upstream area of Aeronautics R&D at 21 academic & research institutions in the country. Funding distribution is about 27% to Indian Institutes of Technology (IITs), 38% to National Aeronautical Laboratories (NAL), 10% to Indian Institute of Science (IISc), and 25% to other institutions. Three Centres of Excellence have been set up at IIT-Mumbai, NAL and IISc-Bangalore in the areas of systems, design and engineering, composite structure technology and computational fluid dynamics with linkages at other organizations.

8.18 **Armament Research Board (ARMREB):** Under the ARMREB, 70 projects have been sanctioned to various academic institutions and other R&D organizations covering fields of high energy materials, sensors, ballistics, combustion & detonics, modeling/ simulation and other fields related to armaments. Out of these, 30 projects have been completed and remaining are being pursued.

8.19 **Naval Research Board (NRB):** The NRB continued to support the basic research applicable to naval/ marine technologies. Since its inception in 1996, 51 projects at a total cost of Rs 11.03 crore have been given to the academic/ research institutions. During the year 17 more new projects have been sanctioned for a sum of Rs 4 crore.

8.20 **Life Sciences Research Board (LSRB):** The LSRB has been sponsoring research and development projects to various research institutes in the country for expanding and deepening the knowledge base of life sciences. So far, a total of 19 projects have been recommended for funding during the year. Three patents have been filed and one is under process. Some of the projects supported by LSRB are

pertaining to evaluation of natural products for anti-hypoglycemic activity, flight simulation task performance, food bio-preservatives, molecular identification, multi drug resistance in cancer, gene expression in drug resistance, etc.

8.21 **Centres of Excellence:** DRDO obtained the Government approval in 2005 to establish Centres of Excellence (CE) at various academic institutions/ universities for creating a strong DRDO – academia link, which is considered crucial for driving innovative technological solutions for defence applications. These Centers would assist DRDO in the highly specialized areas of science. The genesis of establishing Centre of Excellence is to get benefit from the vast resources of an academic institute in terms of knowledge base of faculty, research infrastructure, and young and enthusiastic scientific manpower.

8.22 **The following Centres have been set up:**

(i) Science and Synthesis of High Energy Materials for use as Explosives and Propellants, at University of Hyderabad, Hyderabad.

(ii) DRDO-BU CE in Life Sciences at Bharathiar University (BU), Coimbatore.

(iii) Centre for Millimeter Wave and Semiconductor Devices and Systems at University of Calcutta, Kolkata

8.23 **Contract for Acquisition of Research Services (CARS):** DRDO has introduced an instrument known as Contract for Acquisition of Research Services (CARS) for the procurement of research services from academic institutions. Using this instrument a laboratory can seek the expertise and access the facilities of academic institutions. Under this scheme a laboratory is authorized to award a project worth Rs. 10 lakh to an individual or institution. DRDO laboratories are spending nearly Rs. 8 crores per year under CARS.

EXTRAMURAL RESEARCH/ INTELLECTUAL PROPERTY RIGHTS (ER/ IPR)

8.24 **Extramural Research (ER):** DRDO is actively involved in exploiting knowledge/ expertise available with academia for short/ long term programme of DRDO. Under its ER scheme, the enhanced funding coupled with intellectual resources available in academic institutions catalyse the generation and growth of new ideas leading to innovative technologies.

8.25 The ER Scheme has enlarged its academic reach and due care has been taken for availability of intellectual and infrastructural resources. So far, during the current year, 45 new projects with an aggregate value of Rs. 18 crore have been sanctioned. The projects are spread over 28 academic/ research institutions of repute in the country. 85 national and international conferences organized by academic institutions and R&D centers on a variety of topics of interest to DRDO have been supported by it, involving funds amounting to Rs. 89 lakhs.

8.26 **Intellectual Property Right (IPR):** To accord selective protective legal cover to intellectual property generated through research activities of DRDO, 79 IPR applications (including 13 in foreign countries) were filed on products/ processes in the field of materials, electronics, bio-medical sciences and food technology. During the year, 55 patents were granted and 50 patents were accepted for grant. In addition, 3 copyrights and 3 designs were registered in India. To promote IPR awareness, 6 awareness programmes/ workshops/ patent-clinics were held in different laboratories.

9

INTER-SERVICE ORGANISATIONS

Victory through jointness

Inter-Service Organisations are responsible for developing and maintaining resources and services which are common to the three services in order to economise on costs and cater better services.

9.1 The following inter-Service organisations 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) Army Purchase Organisation

(vii) Services Sports Control Board

(viii) Armed Forces Films and Photo Division

(ix) National Defence College

(x) School of Foreign Languages

(xi) History Division

(xii) College of Defence Management

(xiii) Defence Services Staff College

(xiv) Ministry of Defence Library

MES functions under the overall control of Engineer-in-Chief, who is the adviser to the Ministry of Defence and the three Services on construction engineering.

MILITARY ENGINEER SERVICES

9.2 The Military Engineer Service (MES) is the largest Government construction agency in the country with a current annual workload worth more than Rs. 6,500 crore. It is the premier engineering arm of the Defence Services which provides works services to the Army, Navy, Air Force, Coast Guard, Defence Research and Development Organisation, Directorate General of Quality Assurance, Ordnance Factories, Kendriya Vidyalaya Sangathan and other Central and State Government Undertakings.

9.3 MES functions under the overall control of an Engineer-in-Chief, who is the adviser to the Ministry of Defence and the three Services on construction engineering. It is structured to design works which are executed under the management of Directorate General of Works. It has expertise in a wide spectrum of civil works, ranging from conventional buildings and factories to sophisticated complex laboratories, marine works, jetties, dockyards, wharves, workshops, slipways, air fields, roads, blast pens, etc.

9.4 Major works taken up by the MES during the year are given below:-

(a) **Paramvir:** Construction of a state-of-the-art Officers Mess at Delhi with a Convention centre, two auditoria, exhibition area and basement parking facilities for official functions, conferences, exhibitions, media briefings; is at present under progress.

(b) **World Military Games:** Work is in progress for creation of infrastructure for the proposed 4th Military World Games to be held at Hyderabad and Mumbai from October 14–21, 2007.

9.5 **Married Accommodation Project (MAP):** At present Phase 1 of the project, under which 58,391 dwelling units, at an estimated cost of Rs. 5,329.30 lakh are being constructed for defence services personnel.

9.6 **Conservation of Energy:** This is now statutory requirement as per the Energy Conservation Act 2001. Accordingly, based on a careful cost-benefit analysis, MES has focused initially on Hospitals, Shopping Complexes and Water Supply Installations. This is being achieved by conducting energy audit by an accredited agency of the Bureau of Energy Efficiency. The first case of Army R and R Hospital has yielded an annual savings in electricity tariff to the tune of approximately Rs. 70 lakh. Solar energy based heating and external lighting devices are now being incorporated in all new projects.

The age of retirement of Army Medical Corps (Non-Tech) officers of the rank of select grade Colonel has been enhanced from 56 years to 57 years in November 2006.

9.7 **Rain Water Harvesting:** In the wake of depleting ground water resources and directions of the Central Ground Water Authority (CGWA), it has been made mandatory to incorporate rainwater-harvesting schemes in all projects in consultation with the local CGWA. Some of the stations where such works are already being executed are in Jamnagar, Belgaum, Chennai and Pathankot.

9. 8 **Recycling Waste Water:** In an effort to conserve water, wastewater subjected to certain minimum treatment is now proposed to be utilised for flushing and gardening requirements. A pilot project has been executed in Taliamura and based on the experience gained, planning is underway for similar projects at Aurangabad, Jamnagar, Agra and some other stations.

9.9 **Wind Energy:** In coastal areas, wherever high wind speeds are available, wind energy can be harnessed using windmills. MES intends to harness this alternative source of energy and is planning to install a wind power generator upto 10 KW capacity as a pilot project.

ARMED FORCES MEDICAL SERVICES (AFMS)

9.10 The Armed Forces Medical Services (AFMS) consist of the Medical Services of the Army, Navy and Air Force and a Director General, Armed Forces Medical Services. Each Medical Service is under a Director General Medical Service (DGMS) in the rank of Lt. Gen or equivalent. The Director General, Armed Forces Medical Services is the medical advisor to the Ministry of Defence and is also the chairman of the Medical Services Advisory Committee. The personnel of the Armed Forces Medical Services (AFMS) include officers of the Army Medical Corps, Army Medical Corps (Non-tech), the Army Dental Corps and the Military Nursing Service. AFMS provide comprehensive health care to the serving Armed Forces personnel, their families and dependents. In addition, personnel of para military organisations, while posted in the field and other Central Police/ Intelligence forces operating in the disturbed areas of the country, are provided treatment by the AFMS. The Armed Force Medical Services are also providing medical care to the ex-servicemen and their dependents to the extent possible.

9.11 Important policy decisions taken during the year:-

(a) The age of retirement of Army Medical Corps (Non-Tech) officers of the rank of select grade Col has been enhanced from 56 years to 57 years in November 2006.

(b) Orders for appointment of ex-Armed Forces Doctors of eminence as Honorary

Consultants to the Armed Forces Medical Services were issued in June 2006.

9.12 **HIV/AIDS Prevention and Conrol Programme in Armed Forces:**

Armed Forces have a very comprehensive and vibrant HIV/AIDS prevention and control programme because of which the incidence of HIV in Armed Forces has been stemmed over the last 3-4 years. To consolidate the programme, following activities/ achievements have taken place during the year:-

(a) **Health education activities :** The backbone of the programme was intensive information, education & communication (IEC) activity, which aimed at raising the awareness level of Armed Forces community regarding the threat of this disease and modes of its prevention. These IEC nodes organised lectures, group discussions, peer training workshops, exhibitions and quiz competitions for school children to create awareness regarding HIV/AIDS.

About 17 Lakh acres of total Defence land is spread across the country.

(b) **Blood Banks:** An important component of this programme has been the enhancement of blood banking services in the Armed Forces Hospitals. All the blood samples collected from the voluntary donors in the Armed Forces are screened for HIV, Hepatitis B&C, Syphillis and Malaria as per national guidelines on the subject.

(c) All medical, para medical personnel and supportive staff in medical establishment of Armed Forces, who are exposed to blood and blood products from a HIV positive person while carrying out their duty, are provided anti retro viral treatment for one month and followed up. There have been no serological conversions detected in them, after institution of this measure.

(d) Armed Forces initiated a programme for establishment of Immuno Deficiency Centres (IDC) in 10 selected military hospitals. These centres provide investigation, treatment and follow up of all HIV positive persons in the Armed Forces. The centres are equipped with state-of-the-art medical equipment and facilities for detection and treatment of HIV/AIDS cases.

9.13 **Post Retirement Rehabilitation:** To provide assistance in post retirement rehabilitation of AFMS officers and PBORs, a Placement Cell has been established in the office of DGAFMS.

DIRECTORATE GENERAL DEFENCE ESTATES (DGDE)

9.14 The Directorate General Defence Estates, New Delhi, performs an advisory role to the Ministry of Defence on all matters of lands (acquisition, hiring & management) and Cantonments.

9.15 While the DGDE supervises the activities of various Cantonment Boards through Principal Directors, Command and Cantonment Executive Officers, the management of defence land which includes custody of all defence land records, procurement of immovable property and the payment of compensation, dealing with litigation matters is carried out through the Principal Directorates and Defence Estates Officers. About 17 Lakh acres of total Defence land is spread across the country. Directorate General and its subordinate offices maintain record thereof as per the classification and use. Out of this, 0.68 lakh acre of land is directly under the management of the Directorate General.

9.16 An amount of Rs.111.22 crore has been allotted for acquisition of land for the year 2006-

07. Apart from paying the amount of compensation that landlords are entitled to statutorily, the Government has also decided to take steps for rehabilitation of persons, large areas of whose land are acquired for defence purposes.

9.17 Directorate General Defence Estates is also responsible to control, monitor and supervise the Cantonment Administration. There are 62 Cantonments in India located in 19 States and the National Capital Territory of Delhi. The Cantonment Boards are "Body Corporate" functioning under the Cantonments Act, 2006 which has been given effect to from December 18, 2006. Apart from providing parity between elected and non-elected members, the Act also provides reservation of seats for SC/ST and Women in the Boards. All the 62 Cantonments are varied at present as on December, 2006.

9.18 The resources of the Cantonment Boards are meagre as the bulk of the immovable property in the Cantonment is Government owned, on which no property tax can be levied. Boards, however, receive Service charges in respect of Central Government properties. Due to restrictions on building activities, neither industries can come up nor can trade and business achieve any significant growth in cantonment areas. The Central Government provides financial assistance by way of grant-in-aid to a certain extent to supplement the revenues of the deficit Boards. During the financial year 2005-06, Rs. 30.9825 crore have been allocated on this account to various financially deficit Cantonment Boards.

Towards 'computerization of Defence Land Records' a milestone was achieved in November, 2006 when Raksha Rajya Mantri released the "Raksha Bhoomi Software" under a project jointly undertaken by DGDE and NIC.

9.19 Most of the Cantonment Boards are maintaining hospitals or dispensaries catering to the needs of civil population of the Cantonment as well as the adjoining areas. The total number of hospitals/ dispensaries maintained is 69.

9.20 Towards 'computerization of Defence Land Records' a milestone was achieved in November, 2006 when Raksha Rajya Mantri released the "Raksha Bhoomi Software" in the DGDE under a project jointly undertaken by DGDE and NIC. The project is under implementation in 62 Cantonment Boards and is proposed to be taken up in all Defence Estates Circles. Once Data Base is created, it will provide access to voluminous and up-dated Defence Land Records throughout the country for optimum utilization of land.

OFFICE OF THE CHIEF ADMINISTRATIVE OFFICER

9.21 The office of Chief Administrative Officer (CAO) is responsible for providing civilian manpower and infrastructural support to the Services Headquarters and the Headquarter offices of Inter-Services Organisations (ISOs) under the Ministry of Defence. Joint Secretary (Training) also discharges the functions of the Chief Administrative Officer (CAO) and Director (Security).

9.22 **The CAO's Office has the following six Divisions:-**

(i) Administration Division

(ii) Personnel Division

(iii) Manpower Planning and Recruitment Division

(iv) Training, Coordination and Welfare Division

(v) Finance and Materials Division

(vi) Estates and Works Division

9.23 The Administrative Division provides administrative cover to about 10,000 civilian employees employed in Army Headquarters and

26 Inter-Services Organisations. A Grievances Cell is functioning within the Administration Division to examine the grievances of serving/ retired Armed Forces HQs civilian employees and to ensure their speedy settlement.

9.24 The Personnel Division provides civilian manpower to the Service Headquarters and Inter-Service Organisations and deals with the management of their manpower.

9.25 Manpower Planning and Recruitment Division is responsible for framing policy on recruitment rules in consultation with DOP&T and effecting direct recruitment against all vacant civilian posts in the Service Headquarters and ISOs through prescribed channels.

9.26 Finance and Materials Division provides material support to ISOs which includes procuring and provisioning of office equipment, stores, furniture and stationery. These responsibilities in respect of Army Headquarters have been transferred from CAO's Office to ADG (Adm & Coord), Army HQ w.e.f. July 1, 2006 in order to ensure better administration and greater user satisfaction.

CAO is responsible for providing civilian manpower and infrastructural support to the Services Headquarters and the Headquarter offices of Inter-Services Organisations.

9.27 The Defence HQ Training Institute functioning under the Chief Administrative Officer caters to the training needs of the civilian personnel posted in Service Headquarters and in Inter-Services Organisations. During the year, 1,079 civilian employees have been imparted training in diverse areas to upgrade their skill and efficiency. To some extent, the Institute has also fulfilled the need of training of service officers in areas which are relevant to functioning in Headquarters.

9.28 Estates & Works Division performs the Estate functions in respect of residential accommodation of Service Officers posted at Armed Forces HQs.

9.29 The Office of the Chief Security Officer, Ministry of Defence functions under the supervision of JS (T) & CAO. It is primarily responsible for physical security, access control and prevention of breaches of security and fire within Defence Headquarters Security Zone. Keeping in view the present threat perception a number of security measures have been taken to prevent any untoward mishap/ incident, fire hazard in the DHQ Security Zone. Efforts are being made to procure and install latest and modern security equipment.

DIRECTORATE OF PUBLIC RELATIONS (DPR)

9.31 The Directorate of Public Relations is the nodal agency for the dissemination of information to the media and the public about the important events, achievements and major policy decisions of the Ministry, Armed Forces and Inter Services Organisations under the Ministry of Defence. The Directorate with its headquarters in New Delhi and 25 regional offices across the country is responsible for providing media support and services so as to ensure adequate publicity in the print as well as 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.

9.32 The Directorate conducted a five week Defence Correspondents' Course for the media persons to enhance their knowledge about defence matters. Thirty three journalists from print and electronic media from all over the country attended the course.

9.33 The Directorate brings out a fortnightly journal, viz, Sainik Samachar for the Armed Forces in 13 languages (Assamese, Bengali, English, Gorkhali, Hindi, Kannada, Malayalam, Marathi, Oriya, Punjabi, Tamil, Telegu and Urdu). The journal brought out special issues on Army Medical Corps, International Seminar on Defence Finance and Economics, Army Day, Republic Day, Independence Day, Air Force Day and Navy Day.

The Directorate of Public Relations is the nodal agency for the dissemination of information to the media and the public about the important events, achievements and major policy decisions of the Ministry, Armed Forces and Inter Services Organisations.

9.34 The Broadcasting section of the Directorate coordinates 'Sainikon Ke Liye', a 40 minute programme broadcast daily on All India Radio for the Armed Forces personnel. The Directorate's Photo Section provides photographs of each and every defence related event to the print media.

9.35 The Directorate accorded wide publicity to important events such as the successful test of Missile Defence System, Joint and International Defence Exhibition Def Expo 2006. Commissioning of INS Shardul, handing over of Fast Attack Craft to Maldives, Day at Sea of Prime Minister and Defence Minister, colour presentation to Eastern Fleet, Inauguration of Army Wide Area Network by the President, commissioning of first UAV Squadron of Indian Navy, International Seminar on Defence Finance and Economics, test flights of BrahMos, Trishul, Prithvi and Lakshya missiles etc., Defence Minister's historic visits to Germany, France, China, Japan and Maldives, rescue and relief operations by the Armed Forces during flood and heavy rains in the States of Maharashtra, Andhra Pradesh, Chattisgarh and Operation Sukoon launched to evacuate stranded Indian citizens from the war torn Lebanon were also given wide publicity.

9.36 Other important calendar events such as Republic Day Celebrations, Independence Day celebrations at Red Fort, Combined Commanders' Conference and NCC Rally addressed by the Prime Minister and Defence Investiture Ceremonies at Rashrapati Bhawan were also publicized adequately

ARMY PURCHASE ORGANIZATION

9.37 Army Purchase Organization (APO) in the Ministry of Defence is entrusted with the responsibility of the procurement and timely supply of dry food rations for the consumption of Defence Forces. APO procures rice and wheat through the Food Corporation of India and sugar is allotted by the Directorate of Sugar out of levy quota. Other items like pulses, animal ration, edible oils and vanaspati, tea and milk products are procured from the Central and State Public Sector Undertakings and national/ state level cooperative consumer/ marketing federations by way of invitation of tenders and placing contracts. Whole milk powder, butter tinned and desi ghee are procured from members of the National Cooperative Dairy Federation of India through negotiated contracts. Tinned items like vegetables, fruits, jams, milk, meat and fish, coffee, egg powder, etc are procured from registered suppliers including private parties through open tender. The indented quantities are procured specially during the flush season when availability is high and

Army Purchase Organization is entrusted with the responsibility of the procurement and timely supply of dry food rations for the consumption of Defence Forces.

prices are low. During the year, Rs. 1011.66 crore was provided to the Army HQrs for procurement of above items.

SERVICES SPORTS CONTROL BOARD

9.38 **Services Championships:** Services Sports Control Board (SSCB) conducts and co-ordinates various sports activities in the three Services. A total of four teams (Army Red, Army Green, Indian Navy and Air Force) participate in 19 Services Championships conducted under the aegis of SSCB. During the period from April 1, 2006 to December 31, 2006, 16 Inter Services Championships out of a total 19 disciplines have been conducted.

9.39 **National Championships:** SSCB is affiliated to 28 National Sports Federations and participates in 38 National championships including 10 in junior sections. During the year, our teams won overall championship in Basketball, Weight Lifting, Kayaking & Canoeing and Taikwando and were Runners-up in Athletics, Handball, Squash, Water Polo and Diving and third in Cycling and Swimming events.

The Services topped thew medals tally in the 33rd National Games at Guwahati winning a total of 142 medals.

9.39.1 **National Games:** The services participated in the 33rd National Games at Guwahati in February 2007 as the only Institutional team and topped the medals tally with a total of 142 medals (59 Gold, 46 Silver and 37 Bronze).

9.40 **International Championships:**

(i) SAF Games – 10th South Asian Games were held at Colombo, Sri Lanka from August 18-27, 2006. 58 Sportsmen and 4 officials from Services were selected to represent India in the said Games.

(ii) Asian Games – 15th Asian Games were held at Doha, Qatar from December 1-15, 2006. 83 Services athletes/ officials were part of the Indian contingent and won 2 Gold, 4 Silver and 9 Bronze medals.

9.41 **Best Services Sportsman:** On the basis of performance in Services, National and International championships of the preceding years, one best sportsman is selected from the three Services. Nb Sub V Johanson of MEG Bangalore and member of Services Boxing team was adjudged "Best Services Sportsman" for the year 2005-06 and the trophy was presented on October 18, 2006 during the Combined Commanders' Conference.

9.42 **Arjuna Award:** Nb Sub Tarundeep Rai of ASI Pune was conferred with Arjuna Award for the year 2005-06 in Archery.

9.43 **Dronacharya Awardees:** Two Services coaches MWO Balwan Singh of 412 AF Stn and Sub Ismail Baig of CME Pune were conferred with "Dronacharya Award" for the year 2005-06 for their contribution in coaching in the field of Kabaddi and Rowing respectively.

ARMED FORCES FILM & PHOTO DIVISION (AFFPD)

9.44 The Armed Forces Film & Photo Division (AFFPD) is an Inter-Service Organisation of the Ministry of Defence, primarily responsible to meet the requirements of Services HQrs and other Defence Organisations with regard to production, procurement and distribution of training films, production of photographs, art work etc to meet the needs of training, weapon trials, security, defence research, intelligence and records. It is also responsible for photo and video coverage of ceremonial functions and other important activities of the Ministry of Defence.

9.45 The AFFPD has a very rich collection of rare films and historical photographs. This material

inherited from British is of great historical value and is maintained and preserved in the Central Defence Film Library of this Division. Photographs depict the Indian forces in action in various theatres of Second World War, Parades, Ceremonies, Festivals, Personalities and training activities etc. Some important films titled Battle of Britain, Battle of Russia, Battle of China, Desert Victory, Japanese Surrender, Nazis Strikes, Burma Champaign etc are also preserved alongwith many other important films.

9.46 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 578 titles in 35 mm sizes, 165 in 16 mm sizes and 260 in video formats. During the year, 2200 CDs have been distributed to various Army Establishments. Till date, approx 15250 negatives have been exposed and approximately 10,000 photographs have been prepared.

9.47 At present, the AFFPD have 36 film on its production schedule, out of which 12 films have been completed. 10 films of English version will be completed shortly with similar number of Hindi version.

9.48 This year, a five series film titled 'Combat First Aid Series' of HQ AMC Centre & School has been made bilingually. Released at HQrs AMC Centre & School, Lucknow the series has been appreciated for its usefulness in saving precious lives of soldiers.

9.49 The Mobile Cinema Unit of this Division also procures/ distributes Documentary films/ News Magazines to the troops in the forward areas. During the year, MCU has issued 48 films on 35 mm format, 77 films on VHS format and 1145 films on CD format to Defence establishments on loan basis and Central Defence Film Library (CDFL) has also issued 205 films on 35 mm format, 155 films on 16mm format, 800 films on VHS format and 400 films on CD format to various Defence establishments.

NATIONAL DEFENCE COLLEGE (NDC)

9.50 National Defence College (NDC) was inaugurated on April 27, 1960 by the then Prime Minister, Pandit Jawaharlal Nehru. Located in the heart of Delhi, the College has established a name for itself as a centre of excellence on matters relating to national security and strategic studies. The institution endeavours to provide an academic and professional setting conducive to higher learning.

9.51 The NDC runs a 47-week course every year for selected senior Defence and Civil Services officers from India and Defence officers from friendly foreign countries. The Course is structured to cover socio-politics of India, economy, science, technology, international security environment, global issues, India's strategic/ immediate neighbourhood and military dimensions of national security.

NDC runs a 47-week course every year for selected senior Defence and Civil Services officers from India and Defence officers from friendly foreign countries.

SCHOOL OF FOREIGN LANGUAGES (SFL)

9.52 The School of Foreign Languages 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. It also caters to the needs of other Ministries and Departments of the Government of India. Besides, civilian students are also admitted for Certificate of Proficiency, Advanced Diploma and Interpretership Courses.

9.53 The languages taught on regular basis at the SFL are Arabic, Bahasa Indonesia, Burmese, Chinese, French, German, Persian, Pushto, Russian, Spanish, Sinhala, Japanese, Thai, Malay, Hebrew, Vietnamese.

SFL is engaged in imparting training in 18 foreign languages mainly to personnel of the three Services.

9.54 The School of Foreign Languages is the controlling organisation for other Defence Institutions where foreign languages are taught namely National Defence Academy, Khadakwasla and Army Education Corps Training Centre and College, Pachmarhi. It conducts examinations and issues diplomas to the successful candidates. For the Indian Foreign Service (IFS) probationers, it is obligatory to qualify the Advanced Diploma (IFS) examinations conducted by the Institute. The School of Foreign Languages also conducts examination in regimental language, Nepali, at various Service units all over the country.

9.55 In addition, technically intensive courses in Russian, French and German languages have been successfully conducted by the School for Naval personnel at their establishments in Mumbai, Goa, Jamnagar, Lonawala, Delhi, Visakhapatnam, Kochi and Port Blair.

HISTORY DIVISION

9.56 The History Division established in 1963, functions as the record and reference office of the Ministry of Defence and the Indian Armed Forces. During the current year, about 3500 operational records were received from the Service Headquarters and various Formations/ Units. More than 350 service officers and scholars visited the Division to consult records in connection with their research assignments pertaining to military history. The Division provided information relating to military history in respect of over 260 queries received from various Formations, Units and scholars from India and abroad.

9.57 The Division provides two Research fellowships under the Research Fellowship Scheme of the Ministry of Defence to encourage research in military history. So far seventeen research fellows have benefited under the scheme.

COLLEGE OF DEFENCE MANAGEMENT (CDM)

9.58 The College of Defence Management is a tri-service category "A" training establishment in existence for over three decades now. It is entrusted with the responsibility of instilling contemporary management thoughts, concepts and practices in the senior leadership of the Armed Forces. It is possibly the only institution, which imparts exclusive and quality training in defence management in the developing nations.

9.59 Osmania University recognises the core course of CDM, namely the Higher Defence Management Course for the award of the Master of Management Studies (MMS) degree.

9.60 The following courses are conducted by CDM, Secunderabad:-

(a) **Higher Defence Management Course (HDMC):** This is a 44 week duration course

College of Defence Management, Secunderabad

and is attended by 90 officers of the rank of Colonel/ Lieutenant Colonel and equivalent.

(b) **Senior Defence Management Course (SDMC):** This is a six week duration course and is attended by 33 officers of the rank of Brigadier/ Colonel and equivalent.

(c) **Defence Management Seminar (DMS):** This is of two week duration and is attended by 20 officers of the rank of Major General and equivalent.

(d) **Assignment Oriented Management Training (AOMT):** CDM conducts four AOMT workshops of one week duration on Project Management, Financial Management, Operational Research and Systems Analysis and a workshop on Quantitative Aids to Decision Making of two week duration for middle level officers.

CDM is entrusted with the responsibility of instilling contemporary management thoughts, concepts and practices in the senior leadership of the Armed Forces.

DEFENCE SERVICES STAFF COLLEGE (DSSC)

9.61 The Defence Services Staff College (DSSC) is one of the oldest military institutions in India. It was established in 1905 in Deolali and has been functioning at Wellington since 1950. The DSSC imparts training to middle level officers of the three Services besides a few civilian officers and officers from friendly foreign countries. The college conducts a 45-week training programme from June to April every year. The Staff Course at DSSC aims at imparting training in operational and staff functions in an Inter-Service as well as Joint Service environment.

The Staff Course at DSSC aims at imparting training in operational and staff functions in an Inter-Service as well as Joint Service environment.

MINISTRY OF DEFENCE LIBRARY

9.62 The Ministry of Defence Library provides literature on subjects relevant to planning and policy formulation in the Ministry of Defence, three Services Headquarters, Inter-Service Organizations and other allied Defence Establishments located in Delhi. It specialises in Defence and related subjects, besides catering to the needs of general readers. The reading material for the library is selected by a Book Selection Committee. During the year, the library added 2205 books and subscribed to 127 journals/ periodicals and 23 newspapers.

10

RECRUITMENT AND TRAINING

Forging Ahead in Unison

Recruitment to the Armed Forces is voluntary irrespective of caste, class, religion and community provided the laid down physical, medical and educational criteria are met with.

RECRUITMENT IN THE ARMED FORCES

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 the UPSC which conducts the following two All India Competitive Examinations: -

(i) **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. Successful candidates join the NDA or NA as per their option exercised at the time of applying. On completion of the course, they are sent to the respective Service academies for their pre-commission training.

The Short Service Commission (Technical) Entry Scheme provides avenue for recruitment to eligible technical graduates/ post graduates into Technical Arms.

(ii) **Combined Defence Services Examination (CDSE):** CDSE is conducted by the UPSC twice a year. University graduates are eligible to appear in the examination. Successful candidates join the Indian Military Academy/Air Force Academy and Naval Academy for Regular and Officers Training Academy (OTA) for Short Service Commission.

ARMY

10.3 Apart from the UPSC entries, the commissioned officers are recruited in the army through the following manner:-

(a) **University Entry Scheme (UES):** Final/ 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 two years' ante-date seniority on commissioning.

(b) Technical Graduates Course (TGC): Engineering graduates/ post graduates from notified disciplines of engineering 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-commission training at the IMA, Dehradun before being commissioned. Cadets through this entry are also entitled to two years ante-date seniority on commissioning.

(c) 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 11 months 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 two years' ante-date seniority on commissioning.

(d) 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 IMA, Dehradun 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 specialised training for the Arm/ Service into which they are commissioned.

The more you sweat in peace, the less you bleed in war

(e) Women's Special Entry Scheme Officers (WSES-O): Eligible women candidates are recruited in the Army as Short Service Commissioned Officers through the (WSES-O). Commission is granted in Corps of Electronics and Mechanical Engineers, Engineers, Signals, Army Education Corps, Army Ordnance Corps, Army Supply Corps, Military Intelligence Corps, Judge Advocate General's Branch and Army Air Defence. Women are offered Short Service Commission in three streams viz. Non Technical, Technical and Specialist for a period of ten years, extendable by additional four years purely on voluntary basis. The widows of Service personnel who meet the laid down eligibility criteria are eligible for relaxation of age by four years and 5% seats are reserved for them. However, this entry is being terminated and is being termed as Short Service Commission (Women Technical/Non Technical) with revised terms and conditions, and increased duration of training of approximately 11 months in order to bring them at par with the Short Service Commission male officers. The first batch will be inducted in April 2008. The applicants for Non Technical and Specialist streams would be required to apply through UPSC and after written examination would come up for SSB interview as is being done for Short Service

Table No. 10.1

(1)	**NDA**	Army	422
		Air Force	128
		Navy	74
		Total	**624**
(2)	**IMA**	IMA(Direct Entry)	479
		ACC	122
		SCO	24
		PC(SL)	60
		Total	**685**
(3)	**OTA**	WSES(O)	151
		SSC(NT)	240
		NCC	94
		JAG	8
		Total	**493**
(4)	**Tech. Entries**	UES	83
		SSC(Tech)	49
		10+2 TES	177
		TGC	98
		Total	**407**

Commission male officers. However, widows of Service personnel are exempted from written examinations and would need to apply directly to Additional Directorate General of Recruiting/Integrated Headquarters of Ministry of Defence (Army).

(f) NCC (Special) Entry Scheme: University graduates possessing NCC 'C' Certificate with minimum 'B' grade and 50% marks in graduation examination are eligible to apply for Short Service Commission through this entry. Such cadets are exempted from written examination conducted by the UPSC and are directly put through the SSB interview followed by a medical board. Candidates meeting the qualitative requirements have to apply through NCC Directorates at the State level. After screening, the concerned Directorate General of NCC forward the applications of' deserving cadets to the Recruiting Directorate of Integrated Headquarters of Ministry of Defence (Army).

Under Special Commissioned Officers Entry Scheme, JCOs/ NCOs/ ORs in the age group of 30-35 years, with a Senior School Certificate Pass (Class 10+2 Pattern) qualification, are eligible for commission after screening by SSB and medical board.

10.4 **Service Entries:** Recruitment of PBOR into officer cadre is done through SSB in the following entries: -

(a) Commission Through Army Cadet College (ACC) Entry: The eligible Other Ranks (ORs) from the three Services, having 10+2 pass qualification, can apply for regular commission. After qualifying in written examination conducted by the Integrated HQs of Ministry of Defence (Army), the aspirants are screened by SSB and the medical board. Successful candidates are trained at ACC, 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. Permanent Commission is granted in all Arms/ Services.

(b) Induction Under Special Commissioned Officers (SCO) Scheme: Under this entry, JCOs/ NCOs/ ORs in the age group of 30-35 years, with a Senior School Certificate Pass (Class 10+2 Pattern) qualification, are eligible for commission after screening by SSB and medical board. They have to undergo pre-commission training of one year duration at IMA, Dehradun. The officers so commissioned can earn promotion upto the rank of Colonel. The rules for substantive promotion and acting promotion are the same as for regular officers. These officers are employed in units as sub unit commanders/ Quarter Masters and on various Extra Regimental Employment appointments upto the rank of Major. They retire at the age of 57 years after service of about 20-25 years as officer. The scheme not only improves the career prospects of the existing JCOs/ NCOs/ ORs but also helps in making up the deficiency of officers in the Army to a certain extent.

(c) Induction Through Permanent Commission (Special List) [PC(SL)] Cadre: The eligible PBOR are granted PC (SL) after selection by the SSB and successful completion of four weeks orientation training at the IMA.

10.5 **Intake:** During the year, intake of candidates for pre commission training as officers is given in table 10.1.

10.6 **Recruitment of PBOR :** Recruitment of PBOR in the Army is carried out through open

rallies. After the preliminary screening of aspiring candidates at rally site followed by document checking and physical fitness test their medical examination is conducted by Recruiting Medical Officers at the rally site. This is followed by a written examination for the medically fit candidates. Successful candidates are sent to respective training Centres for training.

10.7 There are eleven Zonal Recruiting Offices, two Gorkha Recruiting Depots and One Independent Recruiting Office in addition to 47 Regimental Centres which carry out recruitment through rallies in their respective areas of jurisdiction. Efforts are made so that each district of the country is covered by recruitment rallies at least once in a recruitment year. During the recruiting year 2005-06, the recruiting organisation has enrolled 27911 recruits for the Army.

Women are being inducted into the Navy, as Short Service Commission officers in the Executive (ATC, Law & Logistic Cadres) and the Education Branch.

10.8 Some of the important decisions taken in the recent past/ major developments in the area of recruitment of PBOR in the Army are given in the following paras: -

(a) Recruitment of Clerical Categories on All India Basis: Clerical categories are being recruited based on All India Merit List. A revised procedure is being followed as a trial measure for the year April 1, 2006 to March 31, 2007. Based on the experience gained, continuation of the system will be reviewed.

(b) Revised Educational Qualitative Requirement for the Soldier (General Duty) Category: The education standards for Soldier (General Duty) category has been revised to 45% marks in aggregate with a minimum of 32% marks in each subject in 10th class. Relaxation in education standards wherever applicable at present will continue to apply.

INDIAN NAVY

10.9 **Recruitment of Officers:** Apart from UPSC Entries, Commissioned officers are recruited through Non UPSC entries for both Permanent Commission (PC) and Short Service Commission (SSC) cadres. For such entries, the applications are invited and short listed at Integrated Headquarters of the Ministry of Defence (Navy). The short listed candidates are then sent for SSB interviews. Thereafter, a merit list, comprising qualified candidates, is prepared as per the availability of vacancies. Recruitment for the Non-UPSC entries is made for the following Branches/ Cadres of the Navy:-

(i) Executive: Short Service Commission for Air Traffic Control/ Law/ Logistic/ Naval Armament Inspectorate (NAI)/ Hydro cadres and also Permanent Commission for Law/ NAI Cadres.

(ii) Engineering (Including Naval Architects): Short Service Commission through University Entry Scheme (UES), Special Naval Architects Entry Scheme (SNAES) & SSC (E) Schemes. Permanent Commission through 10+2 (Tech) Scheme.

(iii) Electrical Engineering: SSC entry through UES and SSC(L) Schemes. Permanent Commission is through 10+2 (Tech) Scheme.

(iv) Education Branch: Permanent Commission and Short Service Commission schemes exist for this branch.

(v) 10+2 (Tech) Scheme: The Scheme is a Permanent Commission entry for commission in the Engineering and Electrical branches of the Indian Navy.

Under the scheme, candidates with 10 +2 (PCM) pass qualification, after selection through the Services Selection Board, are sent to the Naval Academy for the Naval Orientation Course. Thereafter, they undergo a four-year Engineering course at INS *Shivaji/ Valsura*. On successful completion of the course they are granted Permanent Commission in the Electrical and Engineering branches of the Navy.

(vi) University Entry Scheme (UES): The UES has been re-launched w.e.f. August 2005 course, as a Short Service Commission Scheme. Final and Pre-Final year Engineering students are eligible for induction into the technical Branches/ Cadres of the Navy. Naval selection teams visit AICTE approved engineering colleges, across the country, to shortlist the candidates. The short listed candidates, based on All India merit, are called for interview at the Services Selection Board. The successful candidates, thereafter, are put through the medical tests. Final selection is based on all India merit on the basis of marks obtained in the SSB interviews.

Recruitment of sailors in the Navy is also carried out after a process of a written examination, physical fitness test and medical examination.

(vii) Women Officers: Women are being inducted into the Navy, as Short Service Commission (SSC) officers in the Executive (ATC, Law & Logistic Cadres) and the Education Branch.

(viii) Recruitment through NCC: University graduates possessing NCC '**C**' certificate, with minimum '**B'** grading and 50% marks in the graduation degree examination, are inducted into the Navy as regular commissioned officers. These graduates are exempted from appearing in the CDSE and are selected through the SSB interview only. They join the Naval Academy for Naval Orientation Course (NOC) along with the CDSE cadets.

(ix) Special Naval Architecture Entry Scheme: Government has recently approved the induction of 45 Naval Architect officers into the Naval Architecture Cadre of the Engineering Branch of the Indian Navy, as Short Service Commission Officers, under a Special scheme of 'Special Naval Architects Entry Scheme' (SNAES). An empowered Naval team visits IIT Kharagpur, IIT Chennai, Cochin University of Science and Technology (CUSAT) and Andhra University, where B Tech (Naval Architecture) course is conducted, to select the candidates through campus interviews. The selected candidates undergo medical examination at the nearest Military Hospital and, if found fit, are sent for training.

10.10 **Recruitment of Sailors:** Recruitment of sailors in the Navy is also carried out through a process of a written examination, physical fitness test and medical examination.

10.11 **Types of Entries:** The various entries, for recruitment of sailors, are as follows:-

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

(ii) Direct Entry (Diploma Holders) [DE (DH)] – Diploma in Mechanical/ Electrical/ Electronics/ Production/ Aeronautical/ Metallurgy/ Shipbuilding.

(iii) Matric Entry Recruits – Matriculation.

(iv) Non-Matric Entry Recruits – Below Matric.

(v) Direct Entry Petty Officer (Outstanding Sportsmen).

INDIAN AIR FORCE

10.12 **Officers' Selection in Indian Air Force:** UPSC Entries for Indian Air Force is confined to Flying Branch only. For Technical and Non-Technical branches recruitment is carried out through various direct entries by Air Headquarters. The details of such entries/ schemes are given in the following paras.

10.13 Aspiring Engineering Graduates, both Men and Women, undergo Engineering Knowledge Test (EKT) held at different Air Force Stations followed by selection tests at Air Force Selection Boards. Candidates selected for Aeronautical Engineering Branches undergo basic training at Air Force Academy (AFA) followed by specialised training at Air Force Technical College (AFTC), Bangalore. On successful completion of 74 weeks training, they are inducted in Electronics and Mechanical streams. Final/ pre-final year students in the specified Engineering disciplines are eligible for induction through University Entry Scheme (UES).

UPSC Entries for Indian Air Force is confined to Flying Branch only. For Technical and Non-Technical branches, recruitment is carried out through various direct entries by Air Headquarters.

10.14 Post Graduate and Graduate candidates, both Men and Women, aspiring to join Non-Technical Branches viz., Administration, Logistics, Accounts, Education and Meteorology undergo a Common Entrance Test (CET) held twice a year at various Air Force Stations followed by selection tests at Air Force Selection Boards. Selected candidates undergo 52 weeks of training.

10.15 **Service Entry Commission (SEC):** Erstwhile Branch Commissioning Entry and Senior Non-Commissioned Officer (SNCO) Commissioning Entry were merged to Service Entry Commission (SEC) for both Technical and Non-Technical Branches to provide an opportunity for deserving adequately experienced Airmen to become commissioned officers. Under this entry, serving Airmen with minimum 10 years of service (five years in the case of Education Instructors) of technical and non-technical trades of the rank of Sergeant and above, upto the age of 42 years and with minimum educational qualification of 10+2, are eligible to apply for commissioning. All those who qualify in Common Screening Test (CST) held twice a year undergo selection tests at Air Force Selection Boards. Finally selected candidates undergo 74 weeks/ 52 weeks of training to be commissioned in Aeronautical Engineering Branches/ Non-Technical Branches.

10.16 **Selection of Airmen:** The selection of suitable candidates for enrolment as Airmen is carried out through a centralized selection system on All India basis by Central Airmen Selection Board, located at New Delhi with the help of fourteen Selection Centres spread all over the country. Besides, the scheduled Selection Tests are held periodically on all India basis, Recruitment Rallies are also conducted in different parts of the country to provide an opportunity to even remote and low response areas.

The recruitment of officers into the Coast Guard is in two main streams i.e. General Duty and Technical. General Duty has two sub branches i.e. General Service and General Duty (Pilot Navigator).

COAST GUARD

10.17 **Recruitment of Officers:** The recruitment of officers into the Coast Guard is in two main streams i.e. General Duty and Technical. General Duty has two sub branches i.e. General Service and General Duty (Pilot Navigator).

10.18 The selection of officers is made through a Selection Board. Candidates responding to a vacancy advertisement are short-listed in a prescribed ratio for a preliminary screening test and a screening interview by a Preliminary Selection Board. The candidates short-listed by Preliminary Selection Board are then subjected to tests, personal interview, psychological and group tasks by Final Selection Board at NOIDA in Uttar Pradesh. The successful candidates opting for General Duty (Pilot/ Navigator) are further subjected to Pilot Aptitude Battery Test at the Air Force Selection Board.

10.19 **Recruitment of Personnel Below Officers Rank**: The Coast Guard has the following types of entries for personnel below officers rank :-

(a) Direct Entry Diploma Holder (3 years diploma)

(b) Navik(General Duty)12th (Science stream pass entry)

(c) Navik(Domestic Branch)(10th pass)

The objectives of Sainik Schools include bringing quality public school education within the reach of the common man, all round development of a child's personality and to remove regional imbalance in the officers' cadre of the Armed Forces.

10.20 The recruitment is made through various centers spread all over India. The candidates are selected for the available vacancies on the basis of written, medical and physical fitness test. Relaxation of age and qualification is admissible for Scheduled Caste/ Scheduled Tribes and Other Backward Classes as per existing Government orders.

10.21 **Recruitment of Women**: Women are recruited only as officers. The selection process for women candidates is similar to that for the male candidates. Women officers are posted in non-sea going posts and are also being inducted as pilots.

10.22 **Training of Coast Guard Personnel:** The basic training for Coast Guard is undertaken at naval institutions. For specialised training on subjects which are specific to Coast Guard like Search and Rescue/Pollution Control, Maritime Law Enforcement etc., a permanent Coast Guard Training Centre is being planned during the XI Plan. At present Coast Guard mandated training is being conducted at Coast Guard Training Centre, Kochi as an interim arrangement.

TRAINING FOR DEFENCE SERVICES

10.23 A large number of training institutions in the Defence Sector work in coordination with one another. The important ones are described in the following paragraphs:

SAINIK SCHOOLS

10.24 Sainik Schools were established as joint venture of the Central and State Governments. These are under the overall governance of Sainik Schools Society. At present there are 20 Sainik Schools located at Nagrota (Jammu & Kashmir), Sujanpur Tira (Himachal Pradesh), Kapurthala (Punjab), Kunjpura (Haryana), Chittorgarh (Rajasthan), Ghorakhal (Uttarakhand), Rewa (Madhya Pradesh), Gopalganj & Nalanda (Bihar), Tilaiya (Jharkhand), Goalpara (Assam), Purulia (West Bengal), Bhubaneswar (Orissa), Balachadi (Gujarat), Satara (Maharashtra), Korukonda (Andhra Pradesh), Imphal (Manipur), Bijapur (Karnataka), Amravatinagar (Tamil Nadu) and Kazhakootam (Kerala). Sainik School Punglwa in Nagaland, the 21st member of the Sainik School family, is all set to start functioning from the academic session commencing from April 2007.

10.25 The objectives of Sainik Schools include bringing quality public school education within the reach of the common man, all round development of a child's personality and to remove regional

imbalance in the officers' cadre of the Armed Forces. The Sainik Schools prepare boys academically, physically and mentally to join Armed Forces through the National Defence Academy (NDA).

10.26 Sainik Schools admit boys in classes VI and IX. Their age should be 10-11 years for class VI and 13-14 years for class IX as on 1st July of the year in which admission is sought. Admissions are made strictly in the order of merit on the basis of an All India Entrance Examination held in January each year.

10.27 The entrance examination includes a written examination and an interview. Admission is further subject to the candidates being found medically fit according to medical standards prescribed for entry to National Defence Academy.

10.28 Admission to class XI on the basis of class X Board examination results was introduced in Sainik Schools from the academic session 2006-07 in order to achieve optimum utilization of available infrastructure and to provide a more competitive environment to the aspiring cadets.

10.29 Sainik Schools are wholly residential schools run on public school lines. All the Sainik Schools are also members of the All India Public Schools Conference. They offer a common curriculum and are affiliated to the Central Board of Secondary Education, New Delhi and follow the 10+2 pattern of education.

10.30 The schools impart instructions in English medium although knowledge of English is not a pre-requisite for admission. The schools offer only science stream at the plus-two level, enabling candidates to appear for the NDA entrance examination.

MILITARY SCHOOLS

10.31 The Five Military Schools affiliated to CBSE are functioning at Ajmer, Bangalore, Belgaum, Dholpur and Chail. The Military Schools admit boys in class VI, based on the results of an all India Entrance Examination. While 67% seats are reserved for the wards of JCOs/ ORs called 'entitled category', of the 33% non-entitled category seats, 20% are reserved for wards of service officers.

NATIONAL DEFENCE ACADEMY (NDA)

10.32 The National Defence Academy (NDA) is the country's premier inter-service training institution. It has the unique distinction of being one of the first institutions in the world to impart combined training to officer cadets of the Armed Forces.

10.33 The three years course at the NDA is covered in six semesters during which a bond of friendship and respect for each other's service develops. On conclusion of this training, the cadets proceed to their respective Service Academies for further training before being commissioned as officers in the Armed Forces.

RASHTRIYA INDIAN MILITARY COLLEGE (RIMC)

10.34 The Rashtriya Indian Military College (RIMC) was founded on March 13, 1922, with the objective of providing the necessary preliminary training for boys of Indian birth or domicile, wishing to become officers in the Armed Forces of India. The institution now serves as a feeder institute to the National Defence Academy.

10.35 Selection 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 intake into the RIMC is biannual, in January and July. The maximum strength of RIMC is 250. The intake is at Class VIII for boys in the age groups 11½ to 13 years. The college runs classes in science stream on 10+2 CBSE pattern.

INDIAN MILITARY ACADEMY (IMA), DEHRADUN

10.36 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.

10.37 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 Services 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)

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

OFFICER TRAINING ACADEMY (OTA), CHENNAI

10.39 Established in 1963, the Officers Training School (OTS) was redesignated 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 has started training cadets for Short Service Commission.

10.40 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.

10.41 The OTA impart 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.

ARMY WAR COLLEGE, MHOW

10.42 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.

Army War College, is a premier All Arms Tactical Training Institution for officers and performs the important functions of evaluation of new concepts and doctrines in the fields of tactics and logistics.

Courses:

(a) **Higher Command Course:** The course aims to train officers for higher command, with particular reference to command of a division and for holding senior staff appointments. The course of 40 weeks duration is run only for Indian officers from the three Services. 55 officers are trained every year.

(b) **Senior Command Course:** The course aims to train selected Major/ Lieutenant Colonels and equivalent rank officers of all arms and services in tactical employment of a Battalion/ Combat Group as part of a

Brigade or Combat command in cooperation with air and other arms and services, as also, in the training and administration of a unit in peace and war. Each course is of 13 weeks duration. Approximately 10% vacancies are offered to friendly foreign countries, Para Military Forces and Central Police Organizations. Three such courses are conducted every year.

(c) **Junior Command Course:** This course aims to train officers of all arms and services in the tactical employment of a Rifle Company/ Combat Team as part of Battalion Group or Combat Group, in cooperation with air and other arms and services, as also in training and administration of a sub unit in peace and war. A course is of 10 weeks duration and trains 400 officers. Approximately 10% vacancies are offered to friendly foreign countries, Para Military Forces and Central Police Organizations. Four such courses are conducted every year.

(d) **Formation Commanders Orientation Programme (FCOP):** The aim of the programme is to prepare potential divisional commanders for command of their formations. The programme is run for four weeks every year and is meant only for Indian Officers.

JUNIOR LEADERS WING (JLW), BELGAUM

10.43 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.

The aim of the High Altitude Warfare School is to train selected personnel in all aspects of high altitude mountain warfare and develop techniques for fighting in such terrains.

JUNIOR LEADERS ACADEMY (JLA), BAREILLY

10.44 Junior Leaders Academy was set up in 1998 with the aim of imparting institutionalised training in leadership and related subjects to the Junior Leaders i.e. JCOs and Sr NCOs of all arms and services with a view to making them more effective.

10.45 **Courses:** The following courses are conducted for JCOs/ NCOs of all Arms and Services:-

(a) **Junior Leaders Course (JLC):** It is a six week course for newly promoted JCOs and Senior NCOs (approved for promotion to be JCOs). Six courses are conducted to train 3,240 students.

(b) **Potential Subedar Majors (PSMs) Orientation Course:** It is a four week course for 108 newly promoted Subedar Majors or Senior Subedars (approved for promotion to Subedar Majors). Six couses are conducted annually to train 640 students.

JUNIOR LEADERS ACADEMY (JLA), RAMGARH

10.46 Considering the need for more training facilities, it was decided to raise another JLA at Ramgarh in Bihar in 2001. The JLA Ramgarh has been organized on the same lines as JLA Bareilly.

The institution has been imparting training from February 2003 to 648 candidates every year.

HIGH ALTITUDE WARFARE SCHOOL (HAWS), GULMARG

10.47 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 amd Mt. Mckinley in the USA.

COUNTER INSURGENCY & JUNGLE WARFARE SCHOOL (CIJW), VEIRANGTE

10.48 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

10.49 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

10.50 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. The institution is at present training more than 7,000 Officers, JCOs and NCOs in a year.

COLLEGE OF MATERIALS MANAGEMENT

10.51 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).

10.52 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

10.53 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,

10.54 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

10.55 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, other arms and armed forces personnel of friendly foreign countries in Air Defence related subjects.

10.56 The AADC conducts a number of courses. Some of the courses are Long Gunnery Staff Course (Officers), Young Officers Course, Electronic Warfare Course, Senior Command Air Defence Course, Long Gunnery Staff Course, Junior Commissioned Officer/ Non Commissioned Officer, Technical Instructors Fire Control Course, Aircraft Recognition Course, Unit Instructors and Crew Based Training and Automated Data Processing Course.

ARMY SERVICE CORPS (ASC) CENTRE AND COLLEGE, BANGALORE.

10.57 Army Service Corps Centre (South) and Army School of Mechanical Transport were merged with ASC Centre at Bangalore to establish Army Service Corps Centre and College at Bangalore on May 1, 1999. It is a premier training institute imparting basic and advanced training in multifarious disciplines viz logistics management, transport management, catering, automated data processing etc to Officers, Junior Commissioned Officers, Other Ranks and recruits of Army Service Corps as well as other arms and services.

10.58 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

10.59 The AEC Training College & Centre, Pachmarhi is a Defence Seat of Excellence in Educational Training in the Armed Forces. Only one of its kind, it is both a Category 'A' establishment and a Cat 'A' Regimental Centre. 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.

10.60 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.

10.61 The 12-week long Unit Education Instructors (UEI) Course trains ORs from all Arms and Services of the Indian Army to be effective instructors in their Units.

10.62 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.

With a view to producing prospective medal winner at International sporting events, the Army Sports Institute has been set up at Pune alongwith Army Sports Nodes in selected disciplines at various places in the country.

MILITARY MUSIC WING, PACHMARHI

10.63 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

10.64 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

10.65 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

10.66 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

10.67 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

10.68 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 post graduate courses run by the CME. The College trains on an average 1500 officers and 800 PBORs every year.

MILITARY COLLEGE OF ELECTRONICS AND MECHANICAL ENGINEERING (MCEME), SECUNDERABAD

10.69 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.

10.70 As part of the continuous up-gradation of the existing training infrastructure training bays have been renovated and tubular models of Sub Systems/ Sub Assemblies of equipment have been placed. Certain integrated bays for equipment with all training aids have also been established.

10.71 Computer Based Training Packages (CBTs) and digitised 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, BANGALORE

10.72 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

10.73 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

10.74 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

10.75 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.

The Military Intelligence Training School and Depot is 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.

ELECTRONICS AND MECHANICAL ENGINEERING SCHOOL (EME), VADODARA

10.76 The EME School conducts post graduate 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

10.77 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

10.78 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 Specialized training in these disciplines.

FOREIGN TRAINING

10.79 With the interest of foreign armies for training in Indian Army establishments increasing considerably, the Army personnel from neighbouring countries, South East Asia, Central Asian Republics (CAR), African continent and a few developed countries are being trained in India.

10.80 Under the Indian Technical and Economic Cooperation (ITEC) programme of Ministry of External Affairs, the Government of India provides assistance to the developing and under developed nations. Courses are also availed by Nepal and Bhutan under Special Aid Programme of the Ministry of Defence. Under this programme, personnel from developing countries get training in service institutions either free of cost or at subsidized rates. Developed western countries also send their officers for training in these institutions on reciprocal and self financing basis by paying cost of training and other related charges.

11

RESETTLEMENT AND WELFARE OF EX-SERVICEMEN

Raksha Pension Adalat organised at Bhopal

The Department of Ex-servicemen Welfare formulates various policies for the welfare and resettlement of ESM in the country.

11.1 The Department of Ex-servicemen (ESM) Welfare formulates various policies for the welfare and resettlement of ESM in the country. The Department has two Divisions, Resettlement and Pension Division and is assisted by two Inter Services Organisations, Directorate General of Resettlement (DGR) and Kendriya Sainik Board (KSB). While the KSB, which is headed by Raksha Mantri as an ex-officio President of the Board, lays down general policies for the welfare of ESM and their dependents and also for administration of welfare funds, the office of Directorate General of Resettlement implements various policies/ schemes/ programmes of the Government. The Directorate General of Resettlement has five Director Resettlement Zones (DRZs) in five Army Commands.

11.2 The KSB/ Directorate General of Resettlement are also assisted in their task by various Rajya Sainik Boards(RSBs)/ Zila Sainik Boards which are under the administrative control of respective State Governments. The Government of India bears 50% of the expenditure incurred on the organization of RSBs while the remaining 50% expenditure is borne by the respective State Governments, since the welfare and resettlement of ESM is the joint responsibility of the Central Government as well as the State Governments.

The primary thrust of the Directorate General of Resettlement, Kendriya Sainik Board, Rajya Sainik Boards and Zila Sainik Boards is on dignified resettlement of ex-servicemen.

11.3 The 26th meeting of the Kendriya Sainik Board was held under the Chairmanship of Raksha Mantri in New Delhi on June 28, 2006. Besides others, Governors of Goa, Punjab and Chandigarh (UT), Lt. Governors of Andaman & Nicobar and Pondicherry, Chief Ministers of Haryana, Jharkhand and Delhi attended the meeting. The focus of the meeting was on the concerted efforts to be made by the Central and State Governments to provide re-settlement and welfare facilities to ex-servicemen, widows and their dependents.

RESETTLEMENT

11.4 The primary thrust of the Directorate General of Resettlement, Kendriya Sainik Board, Rajya Sainik Boards and Zila sainik Boards is on dignified resettlement of ex-servicemen. Efforts are made to explore various avenues for their employment. To re-settle/ re-employ ex-servicemen, the Central Government arranges the following:-

(a) Training programmes to reorient retiring Defence personnel towards civil employment;

(b) Reservation of posts for providing employment opportunities in government/ semi-government/ public sector organisations and assistance in employment with corporate sector;

(c) Schemes for self-employment; and

(d) Assistance in entrepreneurship and setting up small scale industries.

TRAINING PROGRAMMES

11.5 Training for preparing ex-servicemen and retiring service personnel for their resettlement in civil life is one of the major functions entrusted to the Directorate General of Resettlement. This year the Directorate General of Resettlement has introduced some new courses, which will provide nationally/ internationally accepted certification to facilitate retired persons to get quick employment within/ outside the country. The programme includes courses on information technology, managerial science, technical skills and agro-based industries.

11.6 **Officers' Training:** The Directorate General of Resettlement organizes employment-oriented training programmes for officers to enhance their qualifications and enable them to seek suitable employment after retirement. The Resettlement Training Programmes range from vocational courses of three months' duration to degree/ diploma courses, via distant learning programme, of up to one year duration. The courses are conducted in multifarious fields like Information Technology, Security Services, Entrepreneurship Development, Business Administration, Personnel Management, Hotel Management, Tourism, Human Resources Development, Law, Insurance and miscellaneous topics. Recently, management courses of six months duration have been introduced at Management Development Institute, Gurgaon and Indian Institute of Management, Ahemdabad, Indore, Bangalore and Kolkata. These courses have received an overwhelming response from officers and resulted in good job placements in the corporate sector. Computer diploma courses of six months have also been introduced in various institutions across the country. Besides this, especially designed twelve week programmes in Training the Trainers, Disaster Management and Supply Chain Management have also been introduced for officers looking to build successful new careers in the corporate/ self-entrepreneurial sectors. In order to provide resettlement opportunities to Senior Officers of the rank of Brigadier equivalent and above, DGR has also introduced Independent Directors' Courses at MDI Gurgaon and Bombay Chartered Accountants Society, Mumbai jointly with SP Jain Institute of Management & Research. A total of 11 Lt Generals and 12 Maj Generals attended the Independent Directors Course at MDI held recently.

Ex-Servicemen Training scheme is primarily meant for those ESM who could not avail the facility of resettlement training while in service. The course is free of cost for the ESM and the stipend paid to each trainee has also been enhanced from Rs. 700/- to 1000/- from the year 2006-07.

11.7 **Junior Commissioned Officers (JCOs)/ Other Ranks (ORs) Equivalent Training:** Resettlement Training Programmes for Junior Commissioned Officers/ Other Ranks and their equivalent are carried out under two different heads, viz. Vocational Training and ITI Training. The training courses are conducted in diversified fields for a duration of upto one year in government, semi-government and private institutes spread all over the country. The salient fields covered are Security Services, Management, Information Technology, Travel & Tourism including Adventure Tourism, Entrepreneurship & Small Business Management, Technical (including medical) trades, non-technical trades, secretarial support services, agro-based industry and many other miscellaneous trades. For the Year 2007-08, 24

week Management courses in renowned Management Institutes have also been introduced for Personnel Below Officers Rank (PBOR) to improve their employment avenues within/ outside the country. Three day capsules on Second Career Transition/ Preparation have also been introduced in all Regimental Centres across the country for retiring PBOR in order to arm them with sufficient information for a smooth transition to a second career in the civil market. The courses are conducted free of cost to the PBOR and the institutes are paid directly through the DGR budget.

11.8 **Ex-Servicemen (ESM) Training:** Under this scheme, funds are allotted to Rajya Sainik Boards 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 list of courses has been increased to include 67 disciplines and virtually covers every field under which an ESM could find suitable job. The course is free of cost for the ESM and a stipend is paid to each trainee, the quantum of which has been enhanced from Rs. 700/- to Rs. 1000/- from the year 2006-07.

11.9 The details of personnel imparted training in various fields during the last three years are given in Table No. 11.1: -

Table No. 11.1

SCHEME	2004-05	2005-06	2006-07 Till Feb.
Officers' Trg*	679	994	1345
PBOR Trg*	3016	5066	7369

* Training provided by Directorate General (DGR) to retiring officials while in service.

Naval Placement Cell at Visakhapatnam

RE-EMPLOYMENT

11.10 The Central and State Governments provide a number of concessions to ex-servicemen for their re-employment in Central/ State Government posts. These include reservation of posts/ relaxation in age and educational qualifications, exemption from payment of application/ examination fees, and priority in employment to the disabled ESM and dependants of deceased service personnel on compassionate grounds.

With a view to providing re-employment to ex-servicemen, Ministry of Defence has decided to observe the year 2007 as the "Year of Placement of Ex-servicemen".

11.11 With a view to providing re-employment to ex-servicemen, Ministry of Defence has decided to observe the year 2007 as the "Year of Placement of Ex-servicemen". During the year, a special drive will be launched by Director General, Resettlement to provide re-employment to ex-servicemen. This will include organising seminars, training courses and close interaction with the industry and business houses, seeking their assistance in providing re-employment to ex-servicemen in private sector.

11.12 **Reservation in Government Jobs:** The Central Government has reserved 10% of Group 'C' posts and 20% of Group 'D' posts for ESM, while central PSUs and nationalised banks provide 14.5% reservation in Group 'C' and 24.5% in Group 'D' posts. 10% posts of Assistant Commandants in paramilitary forces are also reserved for ESM. In Defence Security Corps, 100% vacancies are reserved for ESM. In addition, most of the State Governments provide reservations to ESM in State Government jobs.

11.13 **Security Agencies:** The DGR registers/ sponsors private ex-servicemen security agencies for providing security guards to various PSUs and industries in the private sector. The scheme offers good self-employment opportunities to retired officers and ex-PBORs in a field where they have sufficient expertise. Besides, some States have set up ESM Corporations which are also providing security services. The Department of Public Enterprises (DPE) has issued instructions to all PSUs to get security personnel through State Ex-servicemen Corporations located in the concerned State or DGR sponsored Security Agencies. Through this scheme about 1800 ESM security agencies have been empanelled and approximately over 1,30,000 ESM have gained employment.

The Department of Public Enterprises had issued instructions to all PSUs to get security personnel through State Ex-servicemen Corporations located in the concerned State or DGR sponsored Security Agencies.

11.14 **Placement of JCOs/ ORs:** The Ex-servicemen, who have been provided employment through Directorate General Resettlement and Zila Sainik Welfare Offices in the States during the last five years are given in Table No. 11.2.

Table 11.2

	2002	2003	2004	2005	2006
Central Govt	6844	5513	5459	4999	2436
State Govt	2219	3096	2517	2000	607
Private Sector	3064	3079	2963	2937	1014
Security Agencies	8679	9543	10939	12,110	14,000

11.15 **Officer's Employment:** During the year 2006, 528 officers have been registered with the DGR for employment assistance and 2376 officers have been sponsored for

various employment opportunities. To spread awareness about employment potential in ex-defence personnel, seminars had been organized in conjunction with the Chambers of Commerce at New Delhi on August 3, 2006 and at Kolkata on October 3, 2006. To explore employment avenues for ex-servicemen in private sector, a seminar was conducted by the DGR on January 12, 2007 on "Defence – Industry Partnership in Human Resource Management" The Seminar was attended by eminent members of Associated Chambers of Commerce and Industry of India.

SCHEMES FOR SELF-EMPLOYMENT

11.16 As it is not feasible to provide Government jobs to all ex-servicemen after their retirement from the Armed Forces, Government has formulated several schemes for encouraging and giving financial support by way of loans to ex-servicemen entrepreneurs intending to set up small and medium industries. Major self-employment schemes are SEMFEX-II, SEMFEX-III and National Equity Fund Scheme. Applications for sanction of loans are submitted by ex-servicemen directly to concerned Zila Sainik Boards in the States. These applications are scrutinised and those which satisfy eligibility criteria and other terms and conditions are recommended for sanction of loan through Small Industries Development Bank of India (SIDBI), Central Cooperative Banks, State Land Development Banks and Regional Rural Banks aided by National Bank for Agriculture and Rural Development (NABARD) and the State Khadi and Village Industries Board (KVIB)/ Banks aided by the Khadi and Village Industries Commission (KVIC).

11.17 **SEMFEX –II Scheme:** The Scheme has been implemented with the assistance of National Bank for Agriculture and Rural Development (NABARD). It envisages to set up agriculture and allied activities including Small Road and Water Transport Operators and also village, cottage, tiny and small scale industries in rural areas. There is no upper limit for loan in respect of projects under farm sector including agro/ food processing units. The financial assistance in case of non-farm sector activities is available upto SSI limit for setting up industries in rural areas. NABARD provides interest free soft loan assistance to banks to meet the margin money requirement. The primary lending institutions are Commercial Banks, Regional Rural Banks, State Co-operative Banks, State Cooperative Agriculture and Rural Development Banks, etc. This scheme is operative from the year 1988-89. Since inception, Rs. 159.08 crore has been sanctioned to 28629 ex-servicemen/ widows up to December, 2006.

11.18 **SEMFEX –III Scheme:** The Scheme is operative in collaboration with the Khadi and Village Industries Commission (KVIC). The maximum loan limit for individual entrepreneurs, cooperative societies/ institutions and trusts is Rs. 25 lakh per project to set up industries/ service sector activities in rural areas. The financial assistance is available through the Scheduled Commercial Banks, Regional Rural Banks, Co-operative Banks, private Commercial Banks and other Financial Institutions of State and Central Governments, as approved by the KVIC. The margin money grant (subsidy) is provided at the rate of 30% of the project cost for the loan up to a limit of Rs. 10 lakh and above this amount up to Rs. 25 lakh to the extent of 10% of the project cost. The ex-servicemen borrowers are required to invest only 5% of the project cost as margin money. The KVIC Central Office has allocated State/ UT – wise margin money grant to the State KVIBs and the Regional KVICs to provide subsidy to the borrowers through the financial banks. This scheme is operative from the year 1992-93. Since inception, loan amounting Rs. 13.29 crore has

been sanctioned to 1086 ex-servicemen/ widows up to December, 2006.

11.19 **National Equity Fund Scheme (NEF):** The scheme has been launched in collaboration with Small Industries Development Bank of India (SIDBI). The financial assistance is available to set up projects in tiny/ small scale industrial sector, service enterprises and also for undertaking expansion, technology up-gradation, modernisation and revival of viable sick units in Small Scale Industry (SSI) Sector. The maximum loan limit is Rs 50 lakh per project. Soft loan assistance is available up to 25% of the project cost subject to a maximum of Rs. 10 lakh per project. SIDBI provides re-finance to the financing banks. Loan is available through scheduled Commercial Banks, State Cooperative Banks, select Urban Cooperative Banks, etc. The projects can be set up irrespective of location in rural and urban areas. Loan up to Rs. 25 lakh is provided under Credit Guarantee Fund Scheme without colaterals and/ or third party guarantee to small scale industrial ventures including those engaged in IT/ Software Industry. This scheme is operative from the year 2000-01. Since inception, Rs 2.39 crore loan has been sanctioned to 46 ex-servicemen/ widows up to December, 2006.

To encourage the wards of widows and ex-servicemen to take up higher technical and professional education, the PM's Scholarship scheme provides a scholarship of Rs 1250/- p.m. to boys and Rs. 1500/- p.m. to girls for a duration ranging from 2 to 5 years.

11.20 **Herbal Farming Scheme:** Growing herbal plants is more remunerative than growing certain cereals and horticultural crops. Therefore, ESM are being educated, motivated and encouraged to involve themselves in herbal farming.

11.21 **Allotment of Army Surplus Vehicles:** Ex-Servicemen and widows of Defence personnel who died while in service, are eligible to apply for allotment of an Army surplus phased out Class V-B Vehicles. 1867 Army Surplus Vehicle were allotted to ex-servicemen/ widows during the year 2006.

11.22 **Coal Transportation Scheme:** DGR sponsors Ex-Servicemen Coal Transport Companies for the execution of loading and transportation of coal in various coal subsidiaries of Coal India Limited (CIL). The unemployed retired officers and JCOs registered with DGR, are selected to form ESM Coal Transport Companies and are sponsored to respective coal subsidiaries for five years, extendable by another four years. Presently, 97 such companies are operating under the various coal subsidiaries of CIL. The functioning of these companies is monitored by DGR.

11.23 **Coal Tipper Scheme:** The widows of Defence personnel, who died while in service due to causes attributable to military service, can be sponsored by DGR for attaching one tipper truck in their name with an ESM Coal Transport Company. Eligible widow/ disabled soldier is required to make a deposit of Rs.85,000/- with any of the nominated coal transport company. The company pays them Rs. 3000/- per month for a period of five years, after which the deposited amount of Rs.85,000/- is paid back to widow/ disabled soldier. At present 520 widows/ disabled Ex-Servicemen are availing the benefit of this Scheme.

11.24 **Allotment of Oil Product Agencies:** Ministry of Petroleum and Natural Gas has reserved 8% of the Oil Product Agencies, i.e. LPG Dealership, Petrol Pumps, Kerosene Distributorship etc. for widows and dependants of those who died due to causes attributable to military service and disabled soldiers with disability of 20 percent and above attributable to military service.

11.25 **Mother Dairy Milk and Fruit & Vegetables Shops:** Junior Commissioned Officers (JCOs)/ Other Ranks (ORs) are allotted Mother Dairy Milk shops and fruit & vegetable shops in the National Capital Region. 290 milk shops, 352 fruit & vegetable shops and 31 combined shops are being operated by Ex-Servicemen (ESM). Dependent sons (where the Ex-Servicemen are not eligible) are also considered for allotment of fruit & vegetable shops in and around Delhi.

11.26 **Management of CNG Stations in National Capital Region (NCR):** The scheme for management of CNG stations belonging to Indraprastha Gas Limited was launched as a pilot project in July 2001 which has been extended to retired officers also. This scheme is at present available in Delhi only.

11.27 **Reservation in CSD:** The Canteen Stores Department of India (CSDI) has reserved 15% of the 30 selected CSD items and the Ministry of Defence has reserved 10% of the 262 selected items manufactured by Ex-Servicemen Entrepreneurs under the Defence Purchase Programme for which manufacturing units of Ex-Servicemen alone are eligible.

11.28 **PM Scholarship Scheme:** A new scholarship scheme, the "Prime Minister's Scholarship Scheme" was launched on November 14, 2006 from the academic year 2006-07 to encourage the wards of widows and ex-servicemen to take up higher technical and professional education. The scheme provides a scholarship of Rs 1250/- p.m. to boys and Rs. 1500/- p.m. to girls pursuing a recognised professional and technical course for a duration ranging from 2 to 5 years. A total number of 5000 scholarships would be available to be funded from National Defence Fund, out of which 4000 scholarships would be for wards of widows/ ex-servicemen from armed forces and the remaining

Prime Minister giving away scholarship to a recipient

1000 for the wards of central para-military forces and Railway Protection Force administered by Ministry of Home Affairs and Ministry of Railways respectively. Scholarships to 150 selected wards of ESM were awarded by the Prime Minister on November 14, 2006.

PUBLICITY

11.29 Wide publicity of policies and various schemes sponsored by DGR is of paramount importance so as to reach each unit and Ex-Servicemen/ Widows across the length and breadth of the country through exhibitions/ seminars and ex-servicemen rallies. This is done by the DGR by means of publications of its periodical magazine Sainik Punarvas News Fliers, Brochures, Leaflets, Articles in Sainik Samachar and Baatcheet.

11.30 The DGR had put up a stall at the DEFEXPO 2006 at Pragati Maidan, New Delhi and Aero India 2007 at Bangalore to spread awareness about schemes concerning Ex-Servicemen. DGR also participated in India Industrial trade fair held at Kolkata from January 9 to 28, 2007 on the theme of "Access to excellence in Human Resource".

WELFARE

11.31 **Kendriya Sainik Board (KSB):** The Kendriya Sainik Board (KSB) under the chairmanship of Raksha Mantri is the nodal agency to look after the welfare of ex-servicemen and their families in liaison with Rajya Sainik Boards/ Zila Sainik Boards. The KSB also administers various welfare activities financed from interest earnings of the Armed Forces Flag Day (AFFD) Fund. The Fund has a corpus of Rs 125.22 crores. Financial assistance is provided to institutions, such as, paraplegic homes at Kirkee and Mohali, the Red Cross Society, Cheshire Homes, Military Hospitals, St. Dustan's

Meeting of the Kendriya Sainik Board

After Care Organisation and Homes for taking care of old and physically handicapped ex-servicemen and their dependents. Financial assistance is also provided to individual ex-servicemen and their families who are in a state of penury to meet their specific needs. DGR also funds the running of War Widows Hostels, scholarships to ex-servicemen's orphans and other such philanthropic activities. The details of the financial assistance/ welfare measures provided to various institutions out of the AFFD upto October 31, 2006 are given in Table No.11.3.

The Kendriya Sainik Board under the chairmanship of Raksha Mantri is the nodal agency to look after the welfare of ex-servicemen and their families in liaison with Rajya Sainik Boards/ Zila Sainik Boards.

Table No.11.3

(a)	PRC Kirkee	Rs. 17,98,223/-
(b)	PRC Mohali	Rs. 4,04,068/-
(c)	Cheshire Homes	Rs. 89,000/-
(d)	Military Hospitals (Vocational Trg Centre)	Rs. 72,000/-
(e)	St. Dunstan's After Care	Rs. 9,00,000/-
(f)	All India Gorkha Ex-Servicemen Welfare Association, Dehradun	Rs. 4,00,000/-
(g)	Serious Diseases (No. of beneficiaries 72)	Rs. 42,90,000/-

11.32 Paraplegic Rehabilitation Centre(PRC) Pune, PRC at Mohali and Queen Mary's Technical Institute, Pune are providing medical treatment and rehabilitation training to disabled paraplegic/ tetraplegics war casualties and soldiers with injury in spine sustained during Military duties.

11.33 **Assistance from Raksha Mantri's Discretionary Fund:** A portion of the earnings of Armed Forces Flag Day Fund is set apart as Raksha Mantri's Discretionary Fund, which is used to provide financial assistance to poor and needy ex-servicemen for various purposes, viz, medical treatment, daughter's marriage, house repair and education of children and monthly financial assistance upto a period of two years to old and infirm ex-servicemen and widows of ex-servicemen living in penury. Out of an amount of Rs. 1,25,98,246/- allocated for Raksha Mantri's Discretionary Fund for 2006-07, Rs. 98,41,200/- has been provided upto November 22, 2006 as financial assistance covering 745 cases.

11.34 **Concessions and Facilities:** Following concessions and facilities are available to eligible personnel :-

(a) Free educational facilities to children of Defence personnel killed or disabled in action, in schools/ colleges recognized by the Central or State Governments.

(b) 27 seats in the MBBS, one seat in BDS and one seat in engineering stream are available through KSB to dependants/ wards of certain categories of defence personnel through Ministry of Health and Family Welfare.

(c) 25% seats are reserved for the wards of serving and ex- servicemen personnel in Sainik Schools.

(d) States/ UTs have made reservation of seats in professional colleges/ITIs/ Polytechnics for wards of serving and retired defence personnel.

(e) Two educational grants viz (i) Educational Grant of Rs 900/- per month per child (upto class XII) is provided to the wards of war widows/ war disabled and personnel whose death/ disability is attributable to service;

and (ii) Rs 450/- per month per child (upto class XII) to the wards of personnel whose death/ disability is non-attributable to service, peace time casualties (died in harness), housed in 35 War Memorial Hostels to enable them to pursue their studies. An amount of Rs. 14,86,800/- covering 155 cases and Rs. 2,62,620/- covering 51 cases has been provided by the KSB out of AFFD Fund (upto October 31, 2006).

Of the 227 ECHS Polyclinics approved by the Government, 226 have been operationalised.

(f) **Medical facilities to Ex-servicemen:** Ex-Servicemen Contributory Health Scheme (ECHS) came into effect on April 1, 2003. It aims to cover approximately 85 lakh beneficiaries, which includes pensioners and their dependents, and covers all diseases.

Of the 227 ECHS Polyclinics approved by the Government, 226 have been operationalised. All the polyclinics have basic facilities available which include ECG, X-Ray, dental chairs and laboratory for basic diagnostic tests.

The ECHS has a membership of 13 lakh including dependents. At present, buildings for 40 polyclinics have been constructed and 24 are under construction. In addition, land at 139 stations has already been acquired.

607 hospitals/ diagnostic centres have been empanelled all over the country in addition to military/ Govt hospitals/ medical colleges to which the ECHS patients can be referred.

(g) **Travel Concessions:** The following concessions are available to War Widows/ Gallantry Award Winners, which can be availed on production of identity card issued by KSB:-

(i) **Rail Travel Concession:**

(a) 75% concession in rail fare for travel in second class is available to widows of personnel killed in war and action against terrorist and extremists.

(b) Free Rail travel is available in first Class/ AC 2 tier to the recipients of Param Vir Chakra, Maha Vir Chakra, Ashok Chakra, Vir Chakra, Kirti Chakra and Shaurya Chakra along with companion. Such passes are issued by the Railway authorities.

(c) Param Vir Chakra, Maha Vir Chakra and Vir Chakra awardees are also allowed free Rail travel in AC II tier/ AC III tier of Rajdhani and Chair Car of Shatabdi/ Jan Shatabdi Express trains along with a companion in the same class. Such passes are issued by the Railway authorities.

(ii) **Air Travel Concession:**

(a) 75% concession is allowed to recipients of Gallantry Awards of Level I and Level II viz. Param Vir Chakra, Ashok Chakra, Maha Vir Chakra and Kirti Chakra, Victoria Cross, George Cross, Distinguished Service Cross, Military Cross, Distinguished Flying Cross and George Medal.

(b) 75% concession is available to permanently war disabled officers who have been invalidated of service and the dependent members of their families.

(c) 75% concession to war widows of Post-Independence era.

(h) **Reservation of House Sites/ Houses:** Majority of States have made reservations for serving/ retired Armed Forces personnel in allotment of house sites/ houses.

(i) **Sainik Rest House Facilities:** Over 252 Sainik Rest Houses have been built in the

country, which provide transit facilities to ex-servicemen and their dependants at nominal rates. The details of amount provided so far for constructionof Sainik Rest Houses during 2006-07 upto October 31, 1996, out of AFFD Fund are given in Table No. 11.4.

Table No. 11.4

SRH Bagdogra	(West Bengal)	Rs. 35,00,000/-
SRH Somajiguda	(Andhra Pradesh)	Rs. 50,00,000/-
SRH Rewa	(Madhya Pradesh)	Rs. 15,00,000/-
Total		Rs. 1,00,00,000/-

(j) **Cash Award/ Annuity/ Cash, in lieu of Land for Gallantry/ Non Gallantry Award Winners :** The States/ UTs provide Cash Award/ Annuity/ Cash in lieu of land for Gallantry/ Non gallantry Award winners.

PENSION TO ARMED FORCES PERSONNEL

11.35 As on April 1, 2006 the number of Defence pensioners is estimated to be about 21.5 lakh. The pension is disbursed through all branches of the 27 Public Sector Banks, 4 Private Sector Banks viz. HDFC Bank, ICICI Bank, UTI Bank and IDBI Bank, 640 Treasuries, 61 Defence Pension Disbursing Offices (DPDOs), 2 Post Offices and 5 Pay and Accounts Offices (PAOs) scattered all over India. For the Armed Forces pensioners residing in Nepal, disbursement of pension is done through 3 Pension Payment Offices in Nepal. The eligibility conditions, rates etc. of different types of pension are detailed in the succeeding paragraphs.

11.36 The annual expenditure on Defence pensions is given in Table No. 11.5:-

Table No.11.5

Year	Pension Disbursed (Rs. Crore)
2006-07 (RE)	13806.00
2007-08 (BE)	14649.00

RETIRING/ SERVICE PENSION

11.37 For Commissioned officers the retiring/ service pension is calculated at 50% of the average reckonable emoluments drawn during the last 10 months. In the case of Personnel Below Officers Rank (PBOR), it is calculated with reference to the maximum of the scale of pay of the rank and group held for 10 months preceding retirement. Retiring pension is subject to a minimum of Rs. 1275/- p.m. and maximum of upto 50% of the highest pay applicable to Armed Forces personnel. For pre 96 pensioners, as per the formula evolved under the modified parity, with effect from January 1, 1996, pension shall not be less than 50% of the minimum pay (maximum in the case of PBOR) in the revised scale of pay of the rank held by the pensioners at the time of retirement.

11.38 **Weightage:** To compensate for truncated career, the Armed Forces personnel are given weightage for computing service pension. In the case of Commissioned Officers, the minimum period of qualifying service required to earn retiring pension is 20 years. The officers are given benefit of weightage ranging from 3 to 9 years depending on the rank. The minimum period of qualifying service for Personnel Below Officers Rank to earn retiring pension is 15 years. Earlier they were given a uniform weightage of 5 years. However, with effect from January 1,2006, a weightage of 10, 8 and 6 years for the ranks Sepoy,

To compensate for truncated career, the Armed Forces personnel are given weightage for computing service pension. With effect from January 1,2006, a weightage of 10, 8 and 6 years for the ranks Sepoy, Naik and Havaldar respectively is given subject to a maximum qualifying service of 30 years.

Naik and Havaldar respectively is given subject to a maximum qualifying service of 30 years. JCOs continue to get uniform weightage of 5 years. The benefit is given only in respect of service Pension.

COMMUTATION OF PENSION

11.39 Armed Forces personnel are permitted higher commutation of their pension at the rate of 43% for officers and 45% for PBORs as compared to 40% for civilians.

FAMILY PENSION

11.40 Family pension is admissible to Armed Forces personnel who die during service or after retirement with pension, at a uniform rate of 30% of reckonable emoluments last drawn subject to a minimum of Rs. 1275/- p.m. with effect from January 1, 1996. With effect from January 1, 1998 ordinary family pension is admissible to dependant parents, widowed/ divorced daughters who fulfill the prescribed eligibility criteria.

In the event of death of Armed Forces personnel in war or war like operations, counter insurgency operations, action against terrorists, extremists etc. the families are granted Liberalised Family Pension at the rate equal to reckonable emoluments last drawn by the deceased personnel at the time of death.

11.41 With effect from July 27, 2001, family pension admissible under the Employees Pension Scheme, 1995 and the Family Pension Scheme, 1971 under the Employees Provident Fund Act, 1952 have been allowed in addition to the family pension admissible under the relevant Pension Regulation in the case of re-employed ex-servicemen pensioners.

DISABILITY PENSION

11.42 A person who is released or retired from service on account of a disease or injury, which is attributable to or aggravated by military service, is entitled to disability pension if the disability assessed by the Medical Board is 20% or more. On invalidment from service on account of causes attributable to or aggravated by military service, the extent of disability or functional incapacity is determined at 50%, if the disability is less than 50%, 75%, if it is between 50 and 75% and 100% if it is between 76 and 100%.

11.43 Disability pension consists of two elements viz., the service element and disability element. Service element is related to the length of service rendered by the individual at the time of invalidment and the disability element is paid in the form of compensation for the disablement and depends on the degree of disablement. The rate of disability element of the disability pension for 100% disability is Rs. 2600/- p.m. for Commissioned Officers, Rs. 1900/- p.m. for Junior Commissioned Officers and Rs. 1550/- p.m. for other ranks. For individuals who are retained in service despite disability and retire/ are discharged on attaining the age of retirement or on completion of tenure, the same rates are applicable with effect from January 1, 1996.

11.44 With effect from August 30, 2006, Emergency Commissioned Officers, Short Service Regular Commissioned Officers and Short Service Commissioned Officers i.e. non–regular officers have been brought at par with regular commissioned officers in the matter of grant of disability pension w.e.f. August 30, 2006.

WAR INJURY PENSION

11.45 Considering the supreme sacrifice made by the Armed Forces personnel during war or war like situation or action against extremists, anti-social elements etc, war injury pension is granted to the personnel who sustain injury or

disability during such operations. Service element is equal to retiring/ service pension to which he/ she would have been entitled to on the basis of his/ her pay on the date of invalidment but counting service upto the date on which he/ she would have retired in that rank in the normal course including weightage as admissible. War injury element is payable equal to reckonable emoluments last drawn for 100% disablement. However, the aggregate of service element and war injury element does not exceed last pay drawn.

CONSTANT ATTENDANCE ALLOWANCE

11.46 Personnel with 100% disability are paid a Constant Attendance Allowance at the rate of Rs. 600/- per month on the recommendation of the Medical Board.

SPECIAL FAMILY PENSION

11.47 If the death of a Service personnel has occurred on account of causes attributable to or aggravated by military service the family is paid special family pension at the rate of 60% of reckonable emoluments drawn by the deceased subject to a minimum of Rs. 2550/- p.m. Widows who got remarried on or after January 1, 1996 are also eligible for special family pension subject to certain conditions.

LIBERALISED FAMILY PENSION

11.48 In the event of death of Armed Forces personnel in war or war like operations, counter insurgency operations, action against terrorists, extremists etc. the families are granted Liberalised Family Pension at the rate equal to reckonable emoluments last drawn by the deceased

Director General Resettlement with Gorkha Veterans in Nepal

personnel at the time of death. If the personnel is not survived by widow, but is survived by children, they are entitled to liberalised family pension at the rate equal to 60% reckonable emoluments last drawn by the deceased subject to fulfilment of prescribed conditions.

EX-GRATIA AWARDS IN CASES OF DEATH OF CADETS (DIRECT)

11.49 Ex-gratia awards are payable subject to certain conditions in the event of death of a cadet due to causes attributable to or aggravated by military training at the following rates :

(a) Ex-gratia lump sum of Rs. 2.5 lakh

(b) An ex-gratia of Rs. 1275/- per month in respect of both married and unmarried personnel, to Next of Kin (NOK) in addition to above.

11.50 The ex-gratia lump sum is admissible in cases of death of cadets occurring on or after August 1, 1997. However, the benefit of revised monthly ex-gratia amount as mentioned at (b) above, is admissible to pre August 1, 1997 cases also with financial benefit with effect from August 1, 1997.

EX-GRATIA AWARDS IN CASES OF DISABILITY OF CADETS (DIRECT)

11.51 Ex-gratia awards are payable subject to certain conditions in the event of invalidment of cadet (Direct) on medical grounds due to causes attributable to or aggravated by military training at the following rates:

a) Monthly ex-gratia of Rs. 1275/- per month.

b) Ex-gratia disability award @ Rs. 2100/- per month for 100% disability during the period of disablement. The amount is reduced proportionately from the ex-gratia disability award in case the degree of disablement is less than 100%.

c) Constant Attendance Allowance (CAA) of Rs. 600/- per month for 100% disability on the recommendation of Invaliding Medical Board.

11.52 The ex-gratia disability awards are applicable with effect from August 1, 1997. However, the benefit is admissible to pre August 1, 1997 cases also, with financial benefit with effect from August 1, 1997.

STEPS TAKEN FOR REDRESSAL OF GRIEVANCES OF DEFENCE PENSIONERS

11.53 It has been the constant endeavour of Government to strengthen the mechanism for prompt and effective redressal of the grievances of the Defence pensioners. In order to achieve this end, several steps were initiated in the recent past. Some of the steps taken in this regard are as under:

(i) More agencies involved in handling the pension matters of Defence pensioners have initiated action to computerize the records.

Regular Defence Pension Adalats are organised in different parts of the country to redress the grievances of the Armed forces pensioners. In addition, mini pension adalats are held by the Defence Pension Disbursing Offices.

(ii) Pension sanctioning at PCDA(P) is fully computerized. PCDA(P) Allahabad has placed the relevant orders and instructions relating to pension on their web site (www.pcdapension.nic.in) which also provides a calculator so that the pensioner could find out correct entitlement.

(iii) Regular Defence Pension Adalats are organised in different

parts of the country to redress the grievances of the Armed forces pensioners. In addition, mini pension adalats are held by the Defence Pension Disbursing Offices.

(iv) A single window system has been introduced in DPDOs which facilitates hassle free and prompt release of first payment cheques on any working day after retirement.

(v) Endorsements of family pension on PPO of retirees prior to 1989, numbering about 2 lakhs were pending. A special drive has been launched for joint notification of family pension in the pending cases of pre-1989 retirees.

(vi) Role of Medical Adviser (Pension) has been dispensed with for adjudicating disability pension claims. The recommendation of the Medical Boards, as approved by the prescribed authorities would be treated as final.

(vii) In March 2006, orders have been issued to exempt the NRI pensioners/ family pensioners settled abroad from personal appearance at the time of first drawal of pension/ family pension provided the Indian Embassy/ Mission abroad issues an identification certificate to that effect.

11.54 **Invalid Pension:**

A. **Eligibility Conditions:** Invalid Pension is admissible where an individual is invalided out of Military service with a disability neither attributable to nor aggravated by military service, if the service actually rendered is 10 years or more. Invalid gratuity is paid when the service rendered is less than 10 years. In case of non-regular officers released in low medical category Disability Pension is granted

B. **Rates:**

(i) **Invalid Pension:** Amount equal to the service element of disability pension that would have been admissible in case the causes were attributable to or aggravated by military service.

(ii) **Invalid Gratuity:** Half a month's reckonable emoluments for each six monthly period of qualifying service.

12

COOPERATION BETWEEN THE ARMED FORCES AND CIVIL AUTHORITIES

Evacuation of personnel from Beirut by Ships of Indian Navy

Apart from the main responsibility of securing the borders of our country, the Armed Forces render timely assistance to civil authority, with requisite alacrity and professionalism for the maintenance of law and order and/ or essential services, as well as in rescue and relief operations during natural calamities.

12.1 Apart from the main responsibility of securing the borders of our country, the Armed Forces render timely assistance to civil authorities, for the maintenance of law and order and/ or essential services, as well as 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.

ARMY

12.2 (a) **Leh:** A total of 15 columns were deployed at Leh and Kargil to restore normalcy.

Flood Relief in Surat in August 2006

(b) **Vadodara:** During communal violence in Vadodara in May 2006, four Army columns from Vadodara and Ahmedabad were deployed in Mandvi – Fathepura and Ravpura for maintenance of law and order.

(c) **Gharsana**: At the time of the agitation of the farmers of Gharsana and adjoining areas against the non-availability of adequate water for irrigation, two columns were deployed in October 2006. During curfew, flag marches were carried out by the columns.

12.3 **Maintenance of Essential Services:** Due to general strike by Government medical officers of Maharashtra, team of 20 doctors was deployed to assist civil administration of Pune to deal with serious cases requiring urgent medical attention.

12.4 **Assistance to Foreign Countries**: The following instances of rendition of aid by the Indian Army to the foreign countries underline the international dimension of the Indian Army's response and relief capacity :-

(a) **Philippines Mudslide:** In the aftermath of extensive mudslides in Leyte (East Philippines) in February 2006, approximately 30 tonnes of disaster relief supplies, including medicines were dispatched in an IL-76 sortie to Philippines.

(b) **Indonesia Earthquake:** Following extensive earthquake in Jakarta (Indonesia) in May, 2006, approximately 86 tonnes of disaster relief supplies, including medicines were despatched in two IL-76 sorties and INS TABAR to Indonesia.

A total of 77 Army columns and 114 engineer task forces were deployed in flood affected areas.

(c) **Lebanon:** During the crisis in Lebanon, 3200 blankets and 225 tents were sent in August 2006.

12.5 **Flood Relief - 2006:** During the monsoon of 2006, rescue and relief aid has been provided to a number of flood affected areas in Maharashtra, Gujarat, Madhya Pradesh, Rajasthan, Chhattisgarh, Uttar Pradesh and Jammu and Kashmir. A total of 77 columns and 114 engineer task forces were deployed in flood affected areas.

12.6 **Village Malwa – Barmer District:** Assistance for dewatering operations in village Malwa, Barmer District was provided as under :-

(a) Fourteen pumping sets for dewatering;

(b) Ten medical teams for inoculation of affected villagers; and

(c) 1500 tents as also assistance in tent pitching.

12.7 **Trafficability of Roads:** Four JCBs, Two Dozers and Fifteen Tippers ex Border Roads Task Force (BRTF) were provided to restore the following roads damaged during the monsoon:-

(a) Barmer – Chautan,

(b) Shiv – Harsani.

(c) Harsani – Myziar.

(d) Gadra – Munaboo Myziar.

(e) Jodhpur – Ramgarh.

A Flood relief operation in progress

12.8 **Nasik (Maharashtra):** Eight Army Aviation Helicopters were pressed into service over two days for rescuing about 300 marooned villagers in the affected areas of Nasik.

12.9 **Jammu and Kashmir**:

(a) **Leh:** Leh witnessed unprecedented rainfall during the year leaving a trail of destruction. The Army helped, amongst other things, in evacuation of more than 650 villagers.

(b) **Valley:** A total of nine columns and twelve engineer task forces alongwith equipment were deployed from September 3 to 6, 2006 for evacuation of people to safer places, widening of water channels, and diversion of flood waters. Approximately 1780 villagers were evacuated, medical aid was provided to 167 persons and 1600 food/ water packets were distributed.

OP SADBHAVANA AND OPERATION GOOD SAMARITAN

12.10 The Army has undertaken a large number of civic action programmes aimed at winning the "Hearts and Minds" of the people in Jammu and Kashmir as well as in the North East as part of a strategy for conflict prevention. In Jammu and Kashmir and North East, these projects are being implemented under OPERATION SADBHAVNA, and in the North East also under OPERATION GOOD SAMARITAN / Military Civic Actions (MCA).

12.11 **Allocation of Funds:** Funds allocated for Operation Sadbhavana and Operation Good

Marooned civilians being rescued by IAF MI-8 helicopter in Rajasthan

Table 12.1

S. No.	Operation	Jammu and Kashmir	North Eastern States
(1)	Op Sadbhavana (by MOD)	51.95 Crore	10.00 Crore
(2)	Op Samaritan (by MHA)	-	1.5 Crore

Samaritan for Jammu and Kashmir and North Eastern States are given in Table No. 12.1.

12.12 **Thrust Areas**: The Army approached the problem of conflict prevention in a very planned manner by identifying the specific thrust areas, such as Human resource development, Infrastructure development initiatives and efforts in the social sector. The efforts made towards the goals have had an immense impact on the psyche of the people who have come forward in combating terrorism.

INFRASTRUCTURE DEVELOPMENT ACTIVITIES

12.13 **Jammu and Kashmir:** Some of the infrastructure projects being executed by the Army during the year are:-

(a) Rural electrification of 118 villages.

(b) Construction of 17 foot bridges/ bridges and culverts.

(c) Construction of bus-stand, public toilets and community centres/ community halls at the three regions of Jammu and Kashmir.

(d) Maintenance of green houses for 28 villages in Ladakh Region.

(e) Renovation of masjid/ monasteries in five villages.

12.14 **PM's Re-Construction Plan:**

(a) **Micro Hydel Projects (MHP):** Under the Prime Minister's Reconstruction Plan for

A 'Mumbai Run' organised by Indian Navy

Table No. 12.2

	Op SADBHAVANA			BADP			MNS		
	Allotted	**Completed**	**Bal**	**Allotted**	**Completed**	**Bal**	**Allotted**	**Completed**	**Bal**
Ladakh Region	50	50	-	08	02	06	42	03	39
Kashmir Region	150	150	-	197	197	-	203	203	-
Jammu Region	100	100	-	60	60	-	190	131	59
Total	**300**	**300**	**-**	**265**	**259**	**06**	**435**	**337**	**98**

Jammu and Kashmir, the Army has undertaken the task of construction of 1000 Micro Hydel Projects (MHP) in Jammu and Kashmir. Of these, a total of 300 Micro Hydel Projects are planned under OPERATION SADBHAVANA. A total of 265 Micro Hydel Projects have been planned under Border Area Development Programme (BADP), for which Rs. 5.3 crore has already been allotted by the Ministry of Home Affairs. Additional 435 Micro Hydel Projects are being funded by Ministry of Non Conventional Energy Sources (MNES) at an approximate cost of Rs. 8.7 crore. The funds have been released to the Army and work on the project is in full swing. The details of the projects completed are given in table No. 12.2.

(b) **Bridge on Jhelum River:** A Foot bridge across River Jhelum with a span of 90

Inauguration of a free Medical Camp by Indian Navy

metres has been planned to connect village Dhulanja with National Highway 1A. Work on the project which will cost Rs.50 Lakh has commenced and is likely to be completed by May 2007.

12.15 **Model Villages:** Three model villages are being developed in Jammu and Kashmir at Tithwal, Churunda and Khari-Karmara. These villages will be provided with electricity, water supply, repair and augmentation of Government school, provision of community development centre, vocational training centre and medical facilities. All work in Tithwal model village has been completed, whereas work in model village Churunda and Khari-Karmara is in progress. A model village at Yorub/ Phek at a cost of Rs. 60 lakh and another model village at Thingat are also being developed.

12.16 **Sports Infrastructure:** The sports facilities being developed at Moirang/ Bishenpur include construction of out door stadium for water sports, accommodation for sports persons, gymnasium, refreshment centre and solar lighting.

12.17 **Infrastructure Projects**: Major infrastructure projects being undertaken by the Army in the North Eastern States include establishment of 9 community development centers, 28 Vocational Training Centres, construction/ renovation of four bridges and culverts, 27 water supply schemes and provision for the six toilet blocks in selected villages.

EFFORTS IN THE SOCIAL SECTOR

12.18 **Empowerment of Women**: Women Empowerment Centres (WEC) have been opened at various regions providing vocational training in knitting, tailoring, embroidery, shawl weaving, gabba making, carpet weaving etc. Computer education, coaching for the National Open School examinations and education in health care are also provided at WECs. WECs exist at 47 villages

IN personnel providing succour to Indians stranded in Beirut

in the three regions of Jammu and Kashmir.

12.19 **Health Care:** Artificial Limb Centres at 46 locations and Primary Health Centres are maintained to provide health care to the local people in J&K and North East. 102 veterinary camps have also been held.

Operation Sahayata was launched in Maharashtra, Gujarat, Andhra Pradesh and Rajasthan to provide humanitarian relief and rescue to the people affected by unprecedented floods.

INDIAN NAVY

12.20 Initiatives of the Indian Navy towards promoting Defence-Civil Cooperation are detailed in the succeeding paragraphs.

12.21 **Operation Sahayata:** Operation Sahayata was launched in Maharashtra, Gujarat, Andhra Pradesh and Rajasthan to provide humanitarian relief and rescue to the people affected by unprecedented floods. In Maharashtra, about 600 people were rescued, medical teams provided first aid and food packets were distributed. In Gujarat, a diving team evacuated 130 people from Hazira Gas plant. IN helicopters flew sorties from Mumbai and Daman for dropping food and water packets around Surat. In Andhra Pradesh, two diving teams deployed in Bhadrachalam and Konavaram rescued about 180 people. 1900 food packets were distributed to people in inaccessible areas by helicopters which also transferred medical teams to distant relief camps. In Rajasthan, three diving teams recovered 66 bodies in Barmer district.

834 sorties involving 957 hours were flown for flood relief operations wherein 519 tons of relief supplies were airlifted and 2792 persons were evacuated.

'Shramdan' on our beaches

12.22 Some other initiatives include:-

(a) Employment of the physically challenged.

(b) Programmes like medical check-ups, nature walks etc for senior citizens.

(c) HIV awareness workshops.

(d) Running schools for physically challenged children and providing mid-day meals to under privileged children.

AIR FORCE

12.23 **Disaster Relief:** During the period June-September 2006, the helicopter fleet reacted with vigour to provide succour to the victims in flood affected areas by flying, 957 hrs in 834 sorties airlifting 519 tons of relief supplies and evacuating 2792 persons in Andhra Pradesh, Assam, Chattisgarh, Gujarat, Jharkhand, Madhya Pradesh, Maharashtra and Rajasthan.

12.24 During the current year, IAF flew 325 sorties, airlifting 254 seriously injured and sick citizens in mercy missions. Most notable of these were evacuation of injured tourists from Srinagar and bringing in rescue teams for saving the life of a small child who fell into a ditch in a small village in Haryana.

13

NATIONAL CADET CORPS

Prime Minister with NCC awardees during PM Rally

The NCC strives to provide the youth of the country opportunities for all round development with a sense of commitment, dedication and self-discipline, so that they become good leaders and useful citizens and can take their appropriate place in all walks of life in the service of the nation.

13.1 The National Cadet Corps (NCC) was established under the NCC Act, 1948. It has completed 58 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 good leaders and useful citizens and can take their appropriate place in all walks of life in the service of the nation.

13.2 The total sanctioned strength of NCC cadets is 13 lakh. The wing-wise distribution of the cadet strength is as under: -

(a)	Army Wing	-	971286
(b)	Air Wing	-	66350
(c)	Naval Wing	-	67912
(c)	Girls Wing	-	189008

The NCC's presence can be felt in almost all the districts of the country covering 8410 schools and 5251 colleges.

TRAINING OF CADETS

13.3 Training Camp: 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 aspects of unity and discipline. The various types of camps conducted in NCC are as listed below: -

Camp Training is an important part of NCC curriculum. The camps help in developing camaraderie, team spirit, dignity of labour, self confidence, Unity and Discipline.

(a) **Annual Training Camps (ATC):** Annual Training Camps are conducted at State Directorate level so as to ensure that a minimum of 50% of enrolled strength of cadets, numbering approximately 6.5 lakhs, attend at least one camp per year. Approximately 900 such camps are conducted in a training year.

(b) **National Integration Camps (NIC):** A total of 37 NICs were scheduled in the training year 2006-07. A total of 23,240 cadets from all States and Union Territories participated in these NICs in the current training year. In addition, special NICs have been scheduled/conducted at the following places: -

(i) **Special NIC Leh:** A special NIC was conducted at Leh from July 19 to 30, 2006 in which a total of 200 cadets from all parts of the country participated.

(ii) **Special NIC Nagrota:** A special NIC was conducted at Nagrota (J&K State) from October 4 to 15, 2006 in which 310 cadets from all parts of the country participated.

(iii) **Special NIC Chakabama:** A special NIC in the North East was conducted at Chakabama (Nagaland) from November 28 to December 9, 2006 with the participation of 200 cadets from the North East Region and 400 cadets from other parts of India.

(iv) **Special NIC Lakshadweep:** Special NIC was conducted from April 13 to 24, 2006 with the participation of 200 cadets from all over India including 20 cadets from Lakshadweep islands.

(c) **Vayu Sainik Camp (VSC):** The annual All India Vayu Sainik Camp was conducted at Air Force Station Jalahalli (Bangalore) from October 6 to 16, 2006, with the participation of 420 Senior Division (SD) and 180 Senior Wing (SW) cadets.

(d) **Nau Sainik Camp (NSC):** The camp was conducted at Visakhapatnam from November 4 to 15, 2006. One officer and eight cadets from Singapore also participated in the camp alongwith 405 SD cadets and 163 SW cadets from the 17 State NCC Directorates.

(e) **Thal Sainik Camps (TSC):** Two concurrent TSCs are conducted at Republic Day Parade ground, Delhi Cantt every year i.e. for SD/JD boys and SW/JW girls. 640 Boy and 640 Girl cadets take part in these camps. This year the camps were conducted from September 15 to 26, 2006.

(f) **Leadership Camps:** These camps are conducted on an all India basis. There are four Advance Leadership Camps (ALC), one each for SD, JD, SD Naval Wing boys and SW girls and three Basic Leadership Camps, one each for SD boys, SW girls and JW girls. A series of such camps imparting training to 3220 boy and girl cadets were conducted during the year.

(g) **Rock Climbing Camps:** Eight rock climbing camps are held every year to expose the cadets to the basics of rock climbing and to inculcate spirit of adventure. Four of these camps are held at Gwalior in Madhya Pradesh and another four camps

Cadets at a blood donation camp organised by NCC at Delhi on 31st October 2006

at Neyyar Dam near Trivandrum in Kerala. 1080 boy and girl cadets attended these camps between May and November 2006.

The NCC cadets derive first hand experience of immense value by attachment to the Armed Forces units.

(h) **Republic Day Camp –2007:** The Republic Day Camp-2007 was conducted from January 1 to 29, 2007 at Delhi. The Camp was attended by 1850 cadets from all over India, besides cadets of friendly foreign countries, with whom NCC has a Youth Exchange Programme. Inter Directorate competitions connected with institutional training, cultural competitions and National Integration Awareness presentations were conducted during the camp. The camp was inaugurated by the Vice-President of India on January 8, 2007. As a regular feature, Prime Minister's Rally was held on January 27, 2007 during the camp. The camp culminated with an interaction of selected cadets with the President at the Rashtrapati Bhawan.

13.4 **Attachment Training:** The NCC cadets derive first hand experience of immense value by attachment to the Armed Forces units. During the year, attachments conducted were as under:-

(a) 440 officers and 20,000 cadets were attached to the regular Army units. This includes women officers and 560 SW girl cadets.

(b) 120 cadets were attached to Indian Military Academy, Dehradun from December 18 to 29, 2006 and 48 girl cadets were attached to Officers Training Academy, Chennai from September 19 to 30, 2006.

(c) 1000 girl cadets were attached to various Military Hospitals.

NCC Girls mountaineering expedition after summitting JOGIN-III peak (20,180 ft.) in Garhwal Himalayas

(d) 38 SD and 12 SW cadets of Air Wing were attached to Air Force Academy, Dundigal on two occasions from June 20 to July 1, 2006 and from October 13 to 25, 2006.

(e) Eight cadets have flown 'solo' on microlite/ glider in the last one year.

(f) **Naval Attachment–INS Mandovi:** Attachment training camp for 25 Naval Wing (SD) cadets was conducted at Naval Academy, INS Mandovi, Goa for a duration of 12 days during the months of December and January, 2007.

13.5 **Gliding and Microlite Flying:** Gliding facilities are provided at 38 NCC Air Squadrons. The NCC Air Squadrons have carried out 14,839 launches during the year. Microlite flying is being conducted in NCC as an adventure activity with a view to giving air experience to the Air Wing NCC cadets (SD). A total of 7,384 hours of microlite flying was undertaken during the year.

13.6 **Sea Training:** NCC cadets of the Naval wing, during their sea training and attachment, are imparted intensive training in Naval subjects like navigation, communication, gunnery, seamanship, damage control and ship safety, first aid, and ship's husbandry. A total of 295 cadets were attached to ships of the Eastern and Western Naval Command and Coast Guard for sea training during the year.

13.7 **Foreign Cruise:** The following foreign cruises are conducted every year:

(a) **Coast Guard Cruise:** Six Naval SD cadets proceeded to Kenya, Seychelles and Mauritius from May 21 to June 26, 2006.

(b) **Naval Cruise:** Six cadets sailed to Bahrain and Oman from April 3 to 28, 2006 and ten cadets sailed to Singapore, Phuket and Colombo from October 6 to November 8, 2006.

NCC Cadets in Scuba diving

ADVENTURE TRAINING

13.8 (a) **Mountaineering Courses:** NCC nominates 300 boy and girl cadets from all NCC Directorates to attend various courses at Nehru Institute of Mountaineering, Uttarkashi, Himalayan Mountaineering Institute, Darjeeling and Directorate of Mountaineering and Allied Sports, Manali every year.

(b) **Mountaineering Expeditions:** NCC has been conducting two Mountaineering expeditions every year, one for the Senior Division boy cadets and the other for Senior Wing girl cadets. Since 1970, the NCC has conducted 58 mountaineering expeditions, of which 31 were for boys and 27 for girls. This year the boys team undertook an expedition to Swargarohini Peak (6252 m) in May/June 2006 and the girls team successfully undertook an expedition to Jogin Peak III (6116 m) in September/ October 2006.

(c) **Trekking Expeditions:** A total of 10 trekking expeditions were conducted during the year with the participation of 1,000 cadets per trek. The highlight was the trek called 'Valley of Flower Trek' with the participation of 500 SD cadets.

(d) **Para Sailing:** Para Sailing is conducted at each Group level as a part of adventure activity for boy and girl cadets of NCC. During the year, 12,500 cadets have been trained in this activity.

(e) **Para Basic Courses:** Every year 40 boy and 40 girl cadets undergo the Para Basic Course for 24 days at Army Aviation Training School, Agra.

(f) **Desert Camel Safari:** This adventure activity is conducted every year with 20 cadets taking part in it. In addition cadets from friendly foreign countries also participate in this event. It is conducted in the Jaisalmer District of Rajasthan.

(g) **White Water Rafting:** White Water Rafting node has been established at Raiwala (Haridwar).

(h) **Sailing Expedition:** 584 SD boy and 72 girl cadets participated in various water sailing expeditions conducted in various parts of the country.

Cultural Programme by NCC Cadets at Rashtrapati Bhawan

(i) **Hot Air Ballooning:** A Hot Air Ballooning node has been established in Bhopal. A large number of cadets have participated in the tethered flight.

YOUTH EXCHANGE PROGRAMME (YEP)

13.9 **Outgoing YEP Visits:** The following visits were undertaken during the year as part of YEP:

(a) Visit of one officer and six cadets (Naval Wing) to Singapore to participate in International Sea Cadet Exchange programme from May 29 to June 11, 2006.

(b) Visit of one officer and four cadets (Air Wing) to Singapore to participate in International Air Cadet Exchange Programmes from May 29 to June 11, 2006.

(c) Visit of two officers and twenty cadets to Singapore from August 10 to 13, 2006.

(d) Visit of two officers and ten cadets to Russia from September 22 to October 1, 2006.

(e) Visit of one officer and six cadets to Sri Lanka from October 6 to 14, 2006.

(f) Visit of two officers and thirteen cadets to Vietnam from November 28 to December 7, 2006.

(g) Visit of two officers and ten cadets to Singapore from December 4 to 13, 2006.

13.10 **Incoming YEP Visits:** The following incoming YEP visits by foreign delegations were undertaken during the year:

Over the years, NCC cadets have rendered outstanding service during floods, earthquakes, cyclones, train accidents and provided the healing touch in riot affected areas.

(a) One officer and eight cadets from Singapore for Nau Sainik Camp at Visakhapatnam from November 4 to 15, 2006.

(b) Two officers and ten cadets from Singapore for Desert Safari at Jaisalmer (Raj) from November 27 to December 8, 2006.

(c) Heads of Departments of eight friendly countries viz. Bangladesh, Nepal, Bhutan, Sri Lanka, Singapore, Russia, Vietnam and Australia were invited to the Republic Day Camp, 2007.

SOCIAL SERVICE AND COMMUNITY DEVELOPMENT

13.11 NCC has adopted community development activities with the aim of cadets imbibing values of selfless service to the community, dignity of labour, the ideals of self help, environmental protection and upliftment of the weaker sections of the society in their youth. NCC cadets participate in the following community development activities:

(a) **Tree Plantation:** NCC cadets plant saplings and thereafter maintain them in conjunction with the concerned State department/ colleges/ schools and villages.

(b) **Blood Donation:** NCC cadets have been donating blood as voluntary service whenever needed by Hospitals/ Red Cross. This year, as part of NCC Day Celebrations, "Blood Donation Drive" was launched by all NCC State Directorates in various towns and villages from October 31 to November 6, 2006. A total of 21,357 units of blood was donated in one week by cadets, officers and the staff of NCC.

(c) **Old Age Homes:** Old Age Homes in the country are patronised and regularly visited by NCC cadets to provide a helping hand to the aged.

(d) **Adult Education:** NCC cadets visit remote areas, villages and underdeveloped areas to emphasise the need for education and to assist in conducting Adult Education Programme.

(e) **Community Projects:** Cadets of NCC participate in the rural and urban community projects and other development works like village track improvement, well-cleaning and other such activities.

(f) **Disaster Relief:** NCC has always extended its helping hand during natural and other calamities and accidents. Over the years, NCC cadets have rendered outstanding service during floods, earthquakes, cyclones, train accidents and provided the healing touch in riot affected areas.

(g) **Anti Leprosy Drive:** NCC cadets have launched anti-leprosy drive throughout the country and are helping various voluntary organisations.

(h) **AIDS Awareness Programme:** NCC participates actively in the AIDS/HIV awareness programme and is working alongwith UNAIDS and DG AFMS in carrying out AIDS Awareness Programmes throughout the country. Recently, NCC has joined hands with the programme of Youth Unite for Victory on Aids (YUVA) and organised a programme to spread awareness on HIV/AIDS. As a precursor to "Train the Trainer", a nucleus has been created with Directors, selected officers and Whole Time Lady Officers (WTLOs) from all State Directorates.

(i) **Cancer Awareness Programme:** NCC cadets actively participate in Cancer Awareness Programmes organised at various places. Cancer Care India (CACI), an NGO and NCC have joined hands to launch Cancer Awareness Programmes (CAPS) throughout the country. So far 25 such CAPS have been conducted.

ACTIVITIES AT NATIONAL LEVEL

13.12 The NCC cadets also participated in the following activities conducted at the national level:

(a) **Jawaharlal Nehru Cup Hockey Tournament:** Every year four NCC teams (3 boys and 1 girl) participate in the Jawaharlal Nehru Cup Hockey Tournament conducted in October/November. This year following teams participated:

Kayaking by girl cadets of the NCC

(i) Andhra Pradesh and Orissa Directorate in Junior boys category.

(ii) Punjab, Haryana, Himachal Pradesh & Chandigarh Directorate in Junior girls and Sub-junior boys category.

(b) **Subroto Cup Football Tournament:** NCC has been participating in this tournament for the last 27 years. One NCC team each from West Bengal & Sikkim Directorate and North Eastern Region Directorate participated in this year's tournament held from September 14 to October 13, 2006 at New Delhi.

(c) **All India GV Mavlankar Shooting Championship:** This year All India G V Mavalankar Shooting Championship has been conducted by the National Rifle Association of India at Asansol (West Bengal) from November 5 to 14, 2006. This year the cadets bagged five Gold, four silver and four bronze medals.

(d) **National Shooting Championship Competitions:** The 50th National Shooting Championship Competition (NSCC) was conducted at Indore from December 12 to 22, 2006. 16 cadets selected during GV Malvankar Shooting Championship took part in this championship and won an unprecedented 11 medals (8 Gold, 1 Silver and 2 Bronze).

TRAINING OF STAFF

13.13 NCC has two training Academies one at Gwalior and the other at Kamptee where instructors are trained. The following courses were conducted for training of Associated NCC Officers (ANOs) and Permanent Instructors (PI) staff during the year:

(a) **Refresher Course for ANOs:** 16 courses are conducted every year at Officer Training Academy (OTA) Kamptee for 1,135 ANOs.

(b) **Orientation Courses for PI Staff:** 26 courses are conducted at OTA Kamptee for 2,810 PI Staff every year.

(c) **Pre-Commission Courses:** Four Pre-commission courses are conducted at OTA Kamptee for 500 ANOs.

(d) **Refresher Courses for Lady ANOs:** Four courses are conducted at NCC OTA Gwalior for 110 lady ANOs.

Raksha Mantri presenting awards during NCC Investiture Ceremony

(e) **Pre-commission Courses for Lady ANOs:** Two courses for Senior Wing and two courses for Junior Wing are conducted for ANOs at NCC OTA Gwalior.

(f) **Refresher Course for Naval ANOs:** 12 SD and 39 JD ANOs attended a refresher course at INS Circars Vishakhapatnam.

(g) **Refresher Course for Naval PI Staff:** 25 Naval PI Staff attended a refresher course at Seamanship School, Kochi.

(h) **Pre-Commission Course for Naval ANOs:** Naval SD/ JD ANOs underwent Pre-commission training at Seamanship School, Kochi and OTA Kamptee.

(i) **Orientation Course for Air PI Staff:** 40 Air PI Staff undergo orientation course of 5 days duration at OTA Kamptee every year.

(j) **Civil Defence Management Courses:** A total of 30 Officers/ JCOs/ ANOs were detailed to attend various courses conducted at National Civil Defence College (NCDC), Nagpur during the training year.

To provide a major fillip to NCC activities in the country the Central Government has increased its share of funding from 50% to 75% for Camp Training and has also increased the strength of NCC cadets from 1800 to 1850 for Republic Day Camp.

FRESH INITIATIVES

13.14 With a view to providing an opportunity for more NCC cadets to participate in the Republic Day Camp, the authorised strength for the camp has been increased from 1,800 to 1,850.

13.15 In one of the major initiatives, the Government of India has increased its share of funding for camp training from 50% to 75%. For Jammu & Kashmir and North Eastern States, the Government of India would provide 100% funding for camp and institutional training. This new funding pattern came into force with effect from the training year 2006-07 and is expected to provide a major fillip to NCC activities in the country.

Raksha Rajya Mantri with NCC Cadets

14

DEFENCE COOPERATION WITH FOREIGN COUNTRIES

Gen. Peter J. Schoomaker, Chief of Staff, US Army with Defence Secretary Shri Shekhar Dutt

Defence Cooperation has now become an important component in the conduct of a country's foreign policy and security affairs encompassing all activities undertaken by the Defence Forces to avoid hostilities, build and maintain trust, and make significant contribution towards conflict prevention and resolution.

14.1 '*Defence Cooperation'* has now become an important component in the conduct of a country's foreign policy and security affairs encompassing all activities undertaken by the Defence Forces to avoid hostilities, build and maintain trust, and make significant contribution towards conflict prevention and resolution. India is now engaged in a wide range of activities with other friendly countries, ranging from Chile and Brazil in the Far-West to Japan and Korea in the Far-East.

India's defence ties with the United States have changed significantly as a result of exchange of important visits and greater understanding of each other's perceptions and the need for cooperation in tackling global issues like terrorism, disasters, arms proliferation, etc.

14.2 India has a long history of defence cooperation with several countries. Efforts are being made to further strengthen its defence and strategic cooperation with countries like Russia, France, United States, UK, Israel, South Africa, Germany and countries in India's neighbourhood including those in Southeast, Northeast and Central Asia. India has also growing friendly ties including in the defence field, with countries in the Gulf Region, in Africa, Latin America and Europe.

14.3 Our cooperation with Russia in the defence field is mutually beneficial and not restricted to a buyer-seller relationship. It includes joint research and development, training and service to service contacts. The year saw exchange of several high level visits including the visit by Defence Secretary and the Services Chiefs to Russia. The sixth meeting of the India-Russia Working Group on Military Technical Cooperation and the Working Group on Shipbuilding, Aviation and Land Systems was held in New Delhi in December 2006. The Minister level meeting of India-Russia Inter Governmental Commission on Military Technical Cooperation was also held on January 24, 2007 in New Delhi wherein agreements in various areas of cooperation were signed. President of Russian Federation was the Chief Guest for Republic Day celebrations of India.

14.4 France has been one of the major European states that have sought to enhance cooperation with India in the field of defence. The French President along with their Defence Minister Mrs Michele Alliot Marie visited India from February 19-21, 2006. During the visit, both sides decided to work together in the fields of defence procurement, eradication of piracy and terrorism, maritime surveillance, and joint exercises. An Agreement in the field of defence cooperation was also signed on February 20, 2006 between the two countries. A defence delegation led by the Raksha Mantri visited France from September 3-5, 2006 to discuss defence and security issues with the French Defence Minister Mrs Michele Alliot Marie and the French Chief of Defence Staff, General Henri Bentageat.

14.5 India's defence ties with the United States have changed significantly as a result of exchange of important visits and greater understanding of each other's perceptions and the need for cooperation in tackling global issues like terrorism, disasters, arms proliferation, etc. The understanding reached with the US on India's civilian nuclear programme during the landmark visit of the US President, Mr George Bush to India in March 2006 has helped move forward our overall bilateral relations. Director, Defence Security Cooperation Agency (DSCA) of the U.S visited New Delhi from March 9-10, 2006 in connection with 2nd India-US Defence Procurement and Production Group (DPPG) meeting, while Under Secretary of Defence for Policy visited New Delhi to attend the 8th meeting of the India-US Defence Policy Group from November 15-16, 2006. The Senior Technology Security Group (STSG) meeting was held in Washington, DC during September 6-8, 2006. These exchanges have resulted in improving bilateral relations.

14.6 Since India's independence in 1947, Britain and India have transformed their relationship into a mutually beneficial partnership. We have a structured mechanism for defence cooperation under which training, joint exercises, exchanges and equipment sales take place. India-UK Defence Consultative Group meeting was held in New Delhi from November 28-29, 2006.

14.7 India's relations with the countries of the African continent have undergone a major makeover in the last decade and a half. The bandwidth of our engagement is wider than ever, contributing positively to our security environment. India is providing troops for peace keeping in Ethiopia-Eritrea, Congo, Sierra Leone, Burundi, Cote d'Ivoire and Sudan. Defence delegations from various African countries have visited the Indian Training Establishments to seek assistance in training of their National Defence Forces. Another significant milestone during the year was signing of a Memorandum of Understanding (MOU) with Mozambique for cooperation in the

Presentation of a hydrographic chart to Vice President of Seychelles

field of defence during the visit of HE Joaquim Dai, Minister for Defence of Mozambique to India in March, 2006.

14.8 India's support for South Africa in its struggle against apartheid has provided a strong foundation for durable friendship between the two countries. A Defence Cooperation Agreement, signed in 2000, provides the framework for our defence relationship. At the fifth India-South Africa Defence Committee meeting held in July 2006, an MOU for cooperation in defence training was signed. The Defence Secretary led the Indian delegation.

14.9 India and Germany consider each other as important partners on the international scene. The growth of India's close relations with Germany is reflected in the signing of an MoU on defence cooperation during the visit of Raksha Mantri to Germany in September 2006.

14.10 India's ties with Japan in the field of defence have been evolving over the recent years. During the visit of Raksha Mantri to Japan from May 25-28, 2006 a Joint Statement was signed stating the objectives of India-Japan defence and security ties. The Coast Guards of the two countries conducted their seventh round of exercise in November 2006 off Mumbai Coast. A Memorandum of Understanding between the Coast Guards of the two countries was also signed in November 2006.

14.11 China is our largest neighbour. India-China relations are progressing in all areas. The MoU signed on May 29, 2006 during the visit of India's Raksha Mantri to China is another step forward in Sino-Indian relations envisaging contacts between the armed forces and defence officials and experts of the two countries. The Memorandum of Understanding is expected to

Presentation of hydrographic chart to the Prime Minister of Mauritius

serve as an instrument for a regular and sustained dialogue on defence issues between the two countries. Our success in maintaining peace and tranquillity along our long borders is indicative of the level of mutual understanding that has been achieved despite some differences in perception with regard to the boundary issue. The Chinese President Mr. Hu Jintao visited India in November 2006 which marked the high point of India-China Friendship Year celebrations. Gen Qiao Qingchen, Commander of PLA Air Force, was on a 'Good-Will Visit' in October 2006.

The MoU signed on May 29, 2006 during the visit of Raksha Mantri to China is another step forward in Sino-Indian relations envisaging contacts between the armed forces and defence officials and experts of the two countries.

14.12 India maintains cordial defence relations with Oman. Raksha Mantri visited Oman in March 2006. As per the provisions of the Defence Cooperation Agreement between India and UAE, a Joint Defence Cooperation Committee [JDCC] has been set up. The first meeting of JDCC was held in Delhi in April 2006. As part of improving the defence relations with Egypt, an Indian team led by Additional Secretary, Defence visited Cairo in August 2006 and held defence cooperation talks.

14.13 The year 2006 also saw enhanced interactions between India and Singapore in the field of Defence. Raksha Mantri visited Singapore from June 2-4, 2006 to participate in the 5th Shangri La Dialogue. During the visit, Raksha Mantri had separate bilateral meeting with Defence Minister of Singapore. Raksha Mantri also called on Prime Minister of Singapore. The Indian Navy and the Republic of Singapore Navy conducted joint exercises in February 2006 off the coast of Visakhapatnam. The Indian Army and Singapore Armed Forces conducted third round of Joint Artillery and Armoured exercises in October 2006 in India. Indian Air Force and the Republic of Singapore Air Force conducted joint exercises in January 2006 and December 2006 at Kalaikunda.

The National flags of India and China at the Sino-Indian frontier for a Border Personnel Meeting

14.14 Defence relations with Malaysia have been cordial. The year 2006 witnessed the high level visit of Deputy Prime Minister and Defence Minister of Malaysia Dato Sri Mohd Najib Bin Tun Haji Abdul Razak in June 2006. During the visit he met Raksha Mantri and other senior officials of Ministry of Defence. The Defence Secretary visited Malaysia in September 2006 for the fifth Malaysia-India Defence Cooperation Meeting.

14.15 India-Vietnam relations have always been exceptionally friendly and cordial. Col Gen Le Van Dung, Vice Minister of Defence & Director General of the Political Department of the Ministry of Defence of Vietnam visited India in February 2006. Defence Secretary visited Vietnam in October 2006 in connection with the second meeting of India-Vietnam Security Dialogue.

14.16 India has traditionally maintained good relations with Myanmar. There has been substantial increase in bilateral defence cooperation between Indian Army and the Myanmar Army recently in training and other fields. Defence Secretary led a delegation during

September 2006 to Myanmar and held high-level meetings with important functionaries of Myanmar Government. Maj General Ye Mint, Chief of Military Security Affairs visited India in October, 2006. Gen Thura Shwe Mann, Chief of General Staff also visited India in December, 2006.

14.17 India and Australia have enjoyed good relations as members of the Commonwealth, and as countries sharing a democratic political set up and similar legal, financial and public institutions. The fourth round of Strategic Dialogue and the associated Defence Joint Working Group was held in New Delhi in February 2006. The year 2006 also saw the signing of Memorandum of Understanding on defence cooperation with Australia during the visit of Prime Minister of Australia in March 2006.

14.18 India's relations with Republic of Korea (RoK) have been marked by friendship and cordiality. A Memorandum of Understanding between the two Coast Guards was signed in March 2006 when Mr.Lee Seung Jae, Commissioner General, Korea Coast Guard visited India. Raksha Rajya Mantri accompanied by a high level delegation visited RoK in April/ May 2006. The second round of joint exercises between the Indian Coast Guard and the Korea Coast Guard was held off the coast of Chennai in July 2006.

14.19 Our bilateral relations with Mongolia have been most friendly, cordial and trouble-free. India-Mongolia Joint Working Group on Defence Cooperation held its first meeting in March/ April 2006 in Mongolia. Raksha Rajya Mantri visited Mongolia in May 2006 where he met with the Defence Minister of Mongolia and called on the President and the Prime Minister of Mongolia.

14.20 Recognising the importance of Central Asian Region from global security point of view, India is trying to further mutually beneficial defence cooperation with these countries. A joint mountaineering expedition was conducted in India with Kazakhstan Army personnel in September-October, 2006. India has agreed on the need to enhance cooperation in the field of defence training and technical cooperation with the Government of Kyrgyztan.

14.21 A Defence delegation headed by Raksha Utpadan Rajya Mantri visited Chile from January 7-12, 2007. During the visit, an MOU was signed between India and Chile on furthering defence cooperation in the areas of teaching and academic activities, defence equipment and hardware, sports and adventure activities, production, co-production, joint ventures etc.

14.22 To promote defence cooperation with friendly countries, the Indian Army, Navy and Air Force undertake a number of activities. The Indian Military Training Teams in several countries such as Bhutan, Laos, Botswana, Zambia, Lesotho, Seychelles etc. are providing training to the military personnel of these countries. The Indian defence services are also participating in a number of joint exercises with the forces of friendly foreign countries. Joint exercises have been conducted with the forces of Singapore, Thailand, USA, UK, etc.

15

CEREMONIAL AND OTHER ACTIVITIES

Independence Day Celebrations, 2006

The responsibility for the organising of National Functions like the Republic Day Parade, the Beating Retreat Ceremony, Martyrs' Day and the Independence Day is entrusted to the Ministry of Defence.

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 Defence Studies and Analyses, New Delhi;

(ii) Mountaineering Institutes at Darjeeling and Uttarkashi; and

(iii) The Jawahar Institute of Mountaineering and Winter Sports (JIM) at Aru, Kashmir

15.2 The important activities of these institutions during the current year are given in the succeeding paragraphs.

INSTITUTE FOR DEFENCE STUDIES AND ANALYSES (IDSA)

15.3 Apart from continuing to undertake research work on policy relevant security and strategic issues, the IDSA has given increased attention to non-traditional security issues which have come to the fore internationally. The Fellows Seminars are now held twice a week as against

Army's contingent marches smartly at Red Fort, New Delhi on the Independence Day, 2006

once a week earlier in order to provide greater opportunities to the IDSA scholars in preparation of their publication in the Institute's journal-Strategic Analysis.

15.4 IDSA has launched a new website (www.idsa.in) containing readily accessible information about the Institute's activities. This also offers the Institute's scholars an opportunity to comment on topical themes and issues.

IDSA has launched a new website (www.idsa.in) containing readily accessible information about the Institute's activities.

15.5 **Activities:** As part of the efforts to substantially upgrade the neighborhood study programme, a series of workshops were undertaken by the IDSA to study recent developments in our neighboring countries. Proposals were also initiated to develop IDSA's institutionalized linkages with corresponding think tanks in neighboring countries with a view to promote better understanding by security and strategic studies community and positioning IDSA to play a more prominent role in track II activities.

15.6 In an effort to sensitize Parliamentarians on critical security issues the IDSA arranged a briefing on Indo-US Nuclear Cooperation for a group of Parliamentarians in July 2006.

15.7 Two seminars were held in September 2006 on 'Peace Process in Sri Lanka' and 'Peace and Development in Northeast Region' at Bangalore and Shillong respectively. These seminars helped IDSA in engaging scholars from outside Delhi and in developing networking with institutions and individuals engaged in security and strategic matters.

15.8 This year IDSA started a new Eminent Persons Lecture series in collaboration with the India International Centre. Talks were organized on 'Globalisation and Security' by Dr. Arun Shourie, on 'Environment and Security' by Dr. R.K. Pachauri and on 'Human Rights, Terrorism and Security' by Shri Soli Sorabjee under the series.

MOUNTAINEERING INSTITUTES

15.9 The Ministry of Defence administers jointly with the concerned State Governments, three

White water rafting by Army personnel

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), Aru (presently located at Pahalgam) in J&K. These Institutes are run as autonomous Registered Societies. Raksha Mantri is the President of these Institutes. The Chief Minister of the respective State is the Vice-President of the Institute. These Institutes are governed by separate Executive Councils consisting of members elected by the General Bodies, nominees from amongst donors and/or persons who are likely to promote the cause of the Institute, and representatives of Central and State Governments.

15.10 The HMI, Darjeeling was founded in November 1954 by the then Prime Minister Pandit Jawaharlal Nehru to commemorate the historical ascent of Mount Everest by Late Tenzing Norgay along with Sir Edmund Hillary on May 29, 1953. Two more institutes viz the NIM, Uttrakashi and the JIM at Aru in J&K were set up in October 1965 and October 1993 respectively to give further boost to mountaineering and to inculcate the spirit of adventure in youth. A decision has been taken to locate the headquarters of JIM on permanent basis at Pahalgam and to set up its two sub-centres at Bhaderwha and Patnitop.

15.11 The broad objectives of the Mountaineering Institutes are:-

(i) to impart theoretical knowledge and practical training in mountaineering and rock climbing techniques;

(ii) to awaken interest in and love for mountains and exploration; and

(iii) to encourage and provide training in Winter Sports.

Army's mountaineers celebrate success on summiting a peak in the Himalayas

Table No. 15.1

Institute	Basic	Advanced	Adventure	MOI	S&R
HMI	05	02	02	01	-
NIM	05	03	03	01	01
JIM	02	01	15	-	-

Table No. 15.2

Institute (HMI/NIM/JIM)	Basic	Advanced	Adventure	MOI	S&R
No. of students	696	180	889	36	30

15.12 The Institutes conduct Basic and Advanced Mountaineering courses, Method of Instruction Course (MOI), Search & Rescue Course (S&R) and Adventure Course. The syllabi, duration, age limit of participants and grading system for various types of courses are almost uniform at all the Institutes. During the lean period, the Institutes detail their Instructors to conduct rock-climbing courses at the request of Mountaineering Clubs/ Organizations around the country. The Instructors also join various expeditions.

15.13 Trainees to these courses come from all parts of the country and include Army, Air Force, Navy, ITBP and BSF Personnel, NCC Cadets and private students. Foreigners are also now permitted to join these courses.

Adventure - Bringing out the Free Spirit in Naval Personnel

15.14 The details of courses conducted by the Institutes from April 2006 to November 30, 2006 are given in Table No. 15.1.

15.15 The number of students trained in these courses are given in Table No. 15.2.

15.16 HMI, which celebrated Golden Jubilee from October 14-17, 2006, conducted six special courses comprising Advanced, Adventure and Rock Climbing Courses, during which 211 men and women were trained. NIM also conducted 8 special courses for various organizations in which 366 men and women were trained during the year.

CEREMONIALS, HONOURS AND AWARDS

15.17 The responsibility for organizing National Functions like the Republic Day Parade, the Beating Retreat Ceremony, Martyrs' Day and the Independence Day is entrusted to the Ministry of Defence. The Ministry also organizes Defence Investiture Ceremonies for presentation of Gallantry and Distinguished Service Awards at Rashtrapati Bhawan in association with the President's Secretariat. The Ceremonial functions organized during the year are detailed in the following paragraphs.

15.18 **Investiture Ceremony, 2006:** The Defence Investiture Ceremony, 2006 was held at Rashtrapati Bhawan on March 22 and 31, 2006 when the Gallantry and Distinguished Service Awards, mentioned in Table No. 15.3 and 15.4, announced on the Independence Day, 2005 and Republic Day, 2006 were presented by the President to the awardees.

Table No. 15.3

Gallantry Awards

Kirti Chakra	04	(3 posthumous)
Shaurya Chakra	43	(17 posthumous)

Table No. 15.4

Distinguished Service Awards

Param Vishisht Seva Medal	29
Bar to Ati Vishisht Seva Medal	02
Ati Vishisht Seva Medal	52

Prime Minister inspecting a tri-services guard of honour at Red Fort, New Delhi on Independence Day, 2006

15.19 Other awards like Vishisht Seva Medal, Sena Medal, Nao Sena Medal, Vayu Sena Medal and Bar to these Medals were presented by the respective Chiefs of Staff and Senior Commanders at separate Investiture Ceremonies.

15.20 **Independence Day Ceremony 2006:** The Independence Day Celebrations at Red Fort began with the singing of patriotic songs by schools children's choir in different Indian languages in the early morning of August 15, 2006. Later, the three Services and Delhi Police presented Guard of Honour to the Prime Minister. The Prime Minister then unfurled the National Flag on the ramparts of the Red Fort to the accompaniment of the National Anthem played by the Services Band. A 21 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 the children and NCC cadets from Schools of Delhi and release of balloons. Later, during the day, the President laid wreath at the Amar Jawan Jyoti at India Gate paying homage to those who sacrificed their lives for the freedom of the motherland.

15.21 The gallantry awards announced on the Independence Day, 2006 are detailed in Table No. 15.5:-

Table No. 15.5

Awards	Total	Posthumous
Kirti Chakra	02	02
Shaurya Chakra	16	10
Bar to Sena Medal	02	-
Sena Medal	81	15
Nao Sena Medal	06	-
Vayu Sena Medal	1	-

Remembering the Martyrs - Vijay Divas, 2006

15.22 **Vijay Diwas:** Vijay Diwas was celebrated on December 16, 2006 followed by a cultural programme and band display at the Major Dhyan Chand National Stadium, New Delhi.

15.23 **Amar Jawan Jyoti Ceremony, 2007:** The Prime Minister laid a wreath at the Amar Jawan Jyoti of India Gate in the morning of January 26, 2007. Two minutes silence was observed for paying homage to those who laid down their lives in safeguarding the integrity of our nation.

15.24 **Republic Day Celebrations, 2007:** The unfurling of the National Flag at the Rajpath marked the beginning of the Republic Day Parade. The President's Body Guards presented the National Salute followed by the National Anthem played by the Service Bands with a 21 gun salute. The President of the Russian Federation, Mr. Vladimir V Putin was the Chief Guest on the occasion.

15.25 Mounted columns of 61 Cavalry, mechanized columns comprising T-72 Tanks, Bofors Gun, Pinaka Launcher, TC Reporter Radar, Mobile Decontamination Vehicle, Transportable Army Wide Area Network Node, Unmanned Aerial Vehicle, Indra PC-II Radar, marching contigents and bands of Services, Para Military Forces, Delhi Police, Railway Protection Force, NCC and NSS were part of the Parade. The DRDO equipment column included Brahmos, Bridge Layer Tank, Nag on Namica Akash Weapon System and Weapon Locating Radar. 21 National Bravery Award winning children seated on elephants also participated in the Parade. Tableaux of States/ Union Territories, Central Ministries and Departments and cultural items by school children were the other attractions of the parade. The parade ended with a dare-devil motor cycle display by Army Provost 'Shwet Ashw' followed by a Fly Past by aircrafts of the Indian Air Force.

Martial tunes by the massed band of the Army at Vijay Chowk, New Delhi for Beating Retreat, January 2007

Table No. 15.6

Award	Total	Posthumous
Kirti Chakra	06	05
Shaurya Chakra	31	13
Bar to Sena Medal/Nao Sena Medal/Vayu Sena Medal (Gallantry)	04	-
Sena Medal/ Nao Sena Medal/ Vayu Sena Medal(Gallantry)	74	11
Param Vishisht Seva Medal	27	-
Bar to Ati Vishisht Seva Medal	01	-
Ati Vishisht Seva Medal	52	-
Yudh Seva Medal	01	-
Bar to Vishisht Seva Medal	04	-
Vishisht Seva Medal	123	-
Bar to Sena Medal(Gallantry)	02	-
Sena Medal/ Nao Sena Medal/ Vayu Sena Medal(Devotion to duty)	68	01

15.26 The details of gallantry and distinguished service awards announced on the Republic Day are given in Table No. 15.6.

15.27 **Beating Retreat Ceremony, 2007:** The 'Beating Retreat' is a centuries old military tradition dating back to the days when troops disengaged from battle at sunset. The Beating Retreat Ceremony was organized at Vijay Chowk on January 29, 2007 denoting departure of the troops assembled at Delhi for participating in the Republic Day Celebrations. This brought the

With the magnificent North Block as the backdrop, Army's massed band at Vijay Chowk for Beating Retreat, Jan. 2007

curtain down on the Republic Day festivities. Bands of the three Services participated in this Ceremony. The conclusion of the ceremony coincided with illumination of the Rashtrapati Bhawan and India Gate.

The Beating Retreating Ceremony denotes departure of the troops assembled at Delhi for participating in the Republic Day Celebrations.

15.28 **Martyrs' Day Ceremony, 2007:** On January 30, 2007, the President laid a wreath at Mahatma Gandhi's Samadhi at Rajghat. Floral tributes were also paid by the Vice President, the Prime Minister and other dignitaries. 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.

OFFICIAL LANGUAGE DIVISION

15.29 Official Language Division in the Ministry of Defence implements the official language policy of the Central Government in the Ministry as well as its attached and subordinate offices etc., spread all over the country. Apart from doing translation (from English to Hindi and vice-versa) of routine correspondence and the documents, required to be submitted before various Committees of Parliament, the Division is also responsible for conducting meetings of various Hindi Samitis as also for running incentive schemes to implement the progressive use of Hindi.

15.30 **Training:** Keeping in view the policy of imparting knowledge of Hindi language, Hindi stenography and Hindi typing to eligible officers/ employees working in the offices of Central Government, relevant training was imparted to them in the Ministry of Defence. The training in the offices under the Ministry of Defence, located at Delhi was monitored through the meetings of the Official Language Committee of the Ministry while in respect of other offices it was done through their quarterly Hindi progress reports and the official language inspections.

15.31 **Meetings of high level Hindi Committees:** Meetings of the two Hindi Salahakar Samities, i.e. one for the Departments of Defence, Defence R&D and Ex-Servicemen Welfare and the other one for the Department of Defence Production, were organized under the Chairmanship of Raksha Mantri/ Raksha Rajya Mantri, besides holding the quarterly meetings of two departmental Official Language Implementation Committees. An important decision of Hindi Salahakar Samiti was also implemented this year by nominating one non-official member from each of the Hindi Salahakar Samities as observer.

15.32 **Rajbhasha Sangoshthi (Seminar):** For the first time, a 'Rajbhasha Sangoshthi' on 'Increasing the use of Hindi in various organizations of technical & scientific nature under the Ministry of Defence' was organized in the Departments of Defence, Defence Research & Development and Ex-Servicemen Welfare on November 9, 2006, under the Chairmanship of RURM.

15.33 **Hindi Workshops/ Hindi Pakhwara:** Four Hindi workshops were organized in the Ministry. Apart from lectures on the subjects prescribed by the Department of Official Language (Ministry of Home Affairs), the participating officers/ employees also underwent practice session on noting and drafting in Hindi. Likewise, Hindi pakhwara was organized in the Ministry from September 1-15, 2006. Various competitions and other activities organized during the Pakhwara, encouraged one and all in the Ministry to maximize the use of Hindi in their official work.

15.34 **Incentive Schemes:** Apart from continuing to implement almost all the incentive schemes formulated by the Department of Official Language (Ministry of Home Affairs) for encouraging use of Hindi on official work and

promoting original writing in Hindi, a cash award scheme for promoting publication of departmental Hindi magazines and journals brought out by various subordinate offices of the Ministry and also a bi-annual cash award scheme for promoting writing of books on defence related subjects in Hindi have also been implemented.

15.35 **Official Language Inspections:** The official language inspections were carried out for monitoring closely the activities relating to official language in all the three Services, various subordinate offices and Defence Public Sector Undertakings. For this purpose, 39 offices have been covered till December 31, 2006. In addition, inspections of about 25% sections in the Ministry were also carried out.

15.36 **Official Language Inspections of foreign based offices:** For the first time, in the series of official language inspections by the Ministry, two of the offices of defence undertakings based in Russia were inspected by a Joint Secretary. During these inspections, the possibilities of increasing the use of Hindi in the offices were explored and suitable suggestions were given.

15.37 **Inspections by the Committee of Parliament on Official Language:** The Committee carried out a large number of official language inspections by visiting various defence organizations located at Chandigarh, Simla, Kavaratti, Hyderabad, Darjeeling, Siliguri, Jamnagar, Bangalore, Lucknow, Kanpur and Allahabad etc.

WELFARE OF PERSONS WITH DISABILITIES

15.38 **Reservation of posts for persons with disabilities:** The Persons with Disabilities (Equal

Homage to the Martyrs - Vijay Divas, 2006

Opportunities, Protection of Rights and Full Participation) Act, 1995 prescribes that in every establishment not less than 3% of vacancies shall be reserved for persons with disabilities of which 1% each shall be reserved for persons suffering from blindness or low-vision, hearing impairment and loco-motor disability and cerebral palsy in the posts identified for each disability.

15.39 The representation of persons with disabilities in Group 'A', 'B', 'C' and 'D' posts in Department of Defence, Department of Defence Production and Department of Defence Research and Development is presented in Table No. 15.7.

15.40 **Armed Forces:** Provisions enshrined under Sections 33 and 47 of the Persons with Disabilities (Equal Opportunities, Protection of Rights & 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 personnel have been exempted from the applicability of the Sections *ibid* by virtue of special Notifications issued by the Ministry of Social Justice and Empowerment.

15.41 **Ordnance Factory Board (OFB) and Defence Public Sector Undertakings (DPSUs):** In Ordnance Factories 1514 employees with various disabilities are working at various levels at present. The Defence Public Sector Undertakings are also committed to follow 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.

Table No. 15.7

Annual Statement showing the representation of the persons with disabilities in services (As on January 1, 2006)

Group	No. of employees				
	Total	In identified posts	Visually handicapped	Hearing handicapped	Orthopaedically handicapped
1	2	3	4	5	6
Group A	15351	3495	1	3	42
Group B	36461	2116	8	7	130
Group C	220598	7933	200	268	1797
Group D	166485	3207	412	486	1093
Total	**438895**	**16751**	**621**	**764**	**3062**

16

ACTIVITIES OF VIGILANCE UNITS

Vigilance Division is responsible for regular and surprise inspection of sensitive spots, review and streamlining of procedures and initiating other measures for combating corruption.

16.1. The Vigilance Division in the Ministry of Defence has been entrusted with the task of dealing with complaints regarding corrupt practices, misconduct, irregularities, etc in respect of employees of 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) and also the PMO on vigilance related issues and complaints. The Vigilance Division conducts regular surprise inspection of sensitive spots, and reviews and streamlines procedures for combating corruption. During the year 2006, 16 Group 'A'officers were given major penalty (MES-5, Naval HQ-9, Military Farms – 2) and 3 officers of MES were given minor penalty. Nine complaints received from CVC were investigated and brought to their logical conclusion.

During the year 2006, 16 Group 'A' officers were given major penalty (MES-5, Naval HQ-9, Military Farms – 2) and 3 officers of MES were given minor penalty. Nine complaints received from CVC were investigated and brought to their logical conclusion.

16.2 Department of Defence (including DRDO) and Department of Defence Production have their own Chief Vigilance Officers. A special cell monitors cases referred to the CBI.

DEPARTMENT OF DEFENCE

16.3 In keeping with the highest traditions of the Services, sensitization against corrupt practices is carried out right from the ab initio training stage and also on a regular basis across the entire stratum of the armed forces. Various vigilance units proactively monitor all illegal and corrupt practices of service and civilian personnel.

DEPARTMENT OF DEFENCE PRODUCTION

16.4 **Hindustan Aeronautics Ltd. (HAL):** The Vigilance Department has been laying greater emphasis on preventive vigilance. Preventive checks and surprise checks help in identifying areas which are prone to corruption and subject them to intensive examination with a view to plugging loopholes in the system.

16.5 **Bharat Electronics Ltd. (BEL):** Vigilance function in the company is headed by the Chief Vigilance Officer. The CVO has taken initiatives to bring awareness at all levels and strengthen the systems and procedures aimed at ensuring good corporate governance and preventing irregularities and improper use of the company's resources. The performance of vigilance unit during the year has been satisfactory. A large number of regular/surprise inspections were conducted. To improve awareness and to strengthen the vigilance function, executives were put through Vigilance Awareness programmes and were also trained about domestic enquiry and principles of natural justice.

16.6 **Bharat Earth Movers Ltd. (BEML):** The Vigilance Department assists Management in enhancing transparency and equity in its operations by having well laid-out system and procedures covering different aspects of Vigilance.

16.7 The Vigilance Department scrutinizes records/ documents selectively to ensure that the relevant procedures are followed. Complaints are investigated and reports are submitted to competent authorities expeditiously. Vigilance Department conducts surprise checks at identified sensitive and non-sensitive points on random/ selective basis.

16.8 Apart from the above, the Vigilance Department also conducts System Audit and Chief Technical Examiner (CTE) Type Inspection to ensure optimum compliance of the laid down instructions/ guidelines/ procedures to ensure transparency and accountability.

16.9 **Mazagon Dock Limited (MDL):** With a view to increasing transparency in procurement/sale etc. departments dealing with the tendering process have commenced hosting tenders on the MDL website. The monthly summary of the tenders above the threshold value of Rs. 10 lakh is also being hosted on MDL's website.

CVC's instructions regarding posting of open tender notices on the website of the Organization have been fully implemented by all the Ordnance Factories.

16.10 **Goa Shipyard Ltd. (GSL):** The Vigilance set up in Goa Shipyard Ltd is headed by a full-time Chief Vigilance Officer (CVO). He is assisted by one Senior Vigilance Supervisor, a Senior Assistant and two Vigilance Guards. With a view to encouraging people to come forward with information and grievances of a vigilance angle, six Vigilance Complaint Boxes have been installed at various places in the premises of the Company. These boxes are opened every Monday. In addition, printed and framed notice boards have been placed at all offices and common places advising all outsiders to contact the officers of the Vigilance Department in case they come across any instance of corruption.

16.11 **Garden Reach Shipbuilders & Engineers Ltd (GRSE):** Vigilance activities in GRSE are aimed at maintaining transparency in all dealings. A workshop on Vigilance awareness was held in GRSE on November 8, 2006. Besides the above, vigilance complaints/ suggestion boxes have been placed at all conspicuous places in GRSE.

16.12 **Bharat Dynamics Ltd. (BDL):** The main focus of Vigilance Department is on preventive vigilance and open communication with vigilance department in the interest of the Company. As an outcome of Vigilance inspection, substantial savings accrued on account of intensive renegotiations made with major suppliers. As a result of vigilance awareness, the Department unearthed two cases of bogus adopted sons included as dependents for deriving dependent benefits.

16.13 **Mishra Dhatu Nigam Ltd. (Midhani):** During the year, an overall awareness of Vigilance function has been built up in the Company. A team of officers under the guidance of Chief Vigilance Officer has been functioning to ensure transparency and improvement in the system and procedures. Vigilance Department actively participated in bringing out several manuals in the areas of purchase; civil works etc., as contribution towards system improvement in the Company. Several circulars, guidelines have been issued for the benefit of the managers at the functional levels, with a view to implementing and adhering to the instructions of Central Vigilance Commission on various issues in spirit and perspective.

16.14 **Ordnance Factory Board (OFB):** In Ordnance Factories Organization probity and transparency in public dealings are sacrosanct as the organizational mission. Instructions of CVC, vigilance awareness and measures of anti-corruption are being disseminated to employees at all levels and implementation is being ensured.

Following the directions of CVC, Vigilance Awareness Week was observed in the Ministry, DPSUs, Attached and Subordinate offices in the month of November 2006.

16.15 During the year, about 80 complaints were processed for further vigilance action and 31 preventive vigilance inspections were conducted. CVC's instructions regarding posting of open tender notices on the website of the Organization have been fully implemented by all the Ordnance Factories.

DEPARTMENT OF DEFENCE RESEARCH AND DEVELOPMENT

16.16 The main activities of the Vigilance Units in DRDO during the year were as under :–

- Organising sensitization programmes and seminars bringing to fore the importance of proper, effective and optimum management of public funds and public resources.
- Surprise vigilance inspections of laboratories/ establishments to ensure that standing instructions and orders are implemented.
- Conducting confidential enquiries against malpractices and bringing the errant to book.
- Processing vigilance cases/inquiries and preparation of documents for vigilance charge sheets.
- Ensuring compliance of procedures of purchase management laid down by DRDO through periodic vigilance inspection of laboratories/ establishments.

17

EMPOWERMENT AND WELFARE OF WOMEN

A woman Pilot in Dornier 228

The role of women has been increasing steadily in the field of national defence. With the induction of women in various non-combatant branches of the Armed Forces like logistics and law, a larger role is envisaged for them.

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 as Doctors and Nursing Officers in the Armed Forces. With the induction of women in various non-combatant branches of the Armed Forces like logistics and law, a larger role is envisaged for them.

INDIAN ARMY

17.2 **Women Officers in the Army:** 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. As per a recent decision of the Government, Women Short Service Commission Officers in the Army are granted time-scale substantive promotions to the ranks 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.

Women Officers are recruited in various branches of the Armed Forces as Short Service Commissioned officers for ten years initially, extendable by four more years.

17.3 Women officers have been serving in the Armed Forces for about 80 years, first inducted in the Military Nursing Service in 1927 and then in the Medical Officers cadre in 1943. In the Armed Forces Medical Services there are both permanent and Short Service Commission Officers.

17.4 In the Regiment of Artillery, Corps of Signals, Corps of Engineers, Corps of Electrical and Mechanical Engineers, Army Service Corps (Food Scientists and Catering Officers), Army Ordnance Corps, Intelligence Corps, Army Education Corps, Judge Advocate General's Department, and the Army Postal Service, women officers join as Short Service Commission officers.

INDIAN NAVY

17.5 The Indian Navy first inducted women officers in 1992. A total of 179 (including 58 Medical Officers) women officers are serving across various units in the Navy. These officers are assimilated into the mainstream and their promotion prospects, training as well as career progression, are at par with their male counterparts.

17.6 Women are being inducted into the Navy, as Short Service Commission (SSC) officers in the

Executive (ATC, Law & Logistic Cadres) and the Education Branch.

17.7 **Adult Computer Literacy and Hobby Classes:** The Naval Wives' Welfare Association (NWWA) Kendras have been rejuvenated with special emphasis on computer literacy for women and the conduct of hobby classes to promote embroidery, soft toy making, art and micro management skills. IT complexes have been opened for ladies and family members for computer and IT learning.

17.8 On the eve of International Women's day, a special workshop, aimed exclusively at the women employees of the Naval Dockyard, Visakhapatnam was undertaken. The Programme titled 'Live Life Happily' focused on the importance of education, marital harmony, regulations at work place apart from legal and financial topics.

INDIAN AIR FORCE

17.9 Induction of women as Short Service Commission (SSC) officers in flying, technical and non-technical branches in the IAF commenced in 1982. As on December 31, 2006, there are 713 women officers (including Medical and Dental officers) serving in the IAF. As of now Women officers (except Medical branch) are not being granted Permanent Commission. However, Government has approved second extension of SSC tenure upto 14 years on merit to all these women officers.

Lady Officers Training to be Indian Naval Fighter Aircraft Controllers

COAST GUARD

17.10 Women are recruited in Officers Cadre. The selection process for women candidates is similar to that for the male candidates. The women officers are posted in non-sea going posts and are inducted as pilots.

SPECIAL FAMILY PENSION SCHEMES

17.11 Ministry of Defence has special pension schemes for the widows of Service personnel. In the event of death of Armed Forces personnel in war or war like operations, counter insurgency operations, action against terrorists, extremists etc., the families are granted Liberalised Family Pension at a rate equal to reckonable emoluments last drawn by the deceased personnel at the time of death.

17.12 With effect from January 1, 1996 on remarriage of widow, full liberalized family pension would continue to be drawn by her subject to certain prescribed conditions. Liberalised Family Pension of those widows which was stopped on their remarriage before January 1, 1996 with a person other than real brother of the deceased, has been restored w.e.f. June 24, 2005.

17.13 If the death of a Service personnel has occurred on account of causes attributable to or aggravated by military service the family is paid special family pension at the rate of 60% of reckonable emoluments drawn by the deceased subject to a minimum of Rs. 2550/- p.m. Widows who got remarried on or after January 1, 1996 are also eligible for special family pension subject to certain conditions.

Ministry of Defence has special pension schemes for the widows of Service personnel. In the event of death of Armed Forces personnel in war or war like operations, counter insurgency operations, action against terrorists, extremists etc. the families are granted Liberalised Family Pension at the rate equal to reckonable emoluments last drawn by the deceased personnel at the time of death.

DEFENCE RESEARCH & DEVELOPMENT ORGANISATION (DRDO)

17.14 DRDO is sensitive to the need for empowerment and welfare of its women employees. It is ensured that women employees get equal opportunities for enhancement of their skills and knowledge. Fulfilment of their potential, and advancement of the organizational objectives is appreciated and duly recognized by the management. Laboratories and establishments of DRDO have been instructed to set up Women's Cell to look after the welfare of women employees. A similar Cell has also been set up in DRDO HQrs for the purpose.

17.15 Similarly, various welfare measures have also been undertaken for the women employees in the Organisation. Crèches have also been opened as welfare measures in various DRDO laboratories/ establishments all over the country.

DEPARTMENT OF DEFENCE PRODUCTION (DDP)

17.16 Ordnance Factories Board: Women, at all levels, are actively involved in various activities of the Organization. A number of women officers are holding senior positions in the Organization. In many Ordnance Factories, women at the shop floor level operate even sophisticated Computer Numerically Control (CNC) machines.

17.17 **Hindustan Aeronautics Limited (HAL):** The strength of women employees in HAL as on September 30, 2006 is 1,697. A

sizeable number of women employees is in supervisory and executive cadres.

17.18 **Bharat Electronics Limited (BEL):** BEL has 2458 women employees in all the Units and Offices and has been providing a variety of facilities and benefits to them, such as specially furnished exclusive Rest Rooms, Creche facilities etc. Training Classes in Tailoring are conducted after working hours through the Labour Welfare Fund. Women employees are nominated to participate in meets/ conferences organised by the set up "Women in Public Sector" (WIPS). Women employees of Non-ESI category also get the complete maternity benefits including pre-natal care. Akshaya–run by the Bharat Electronics Ladies' Association (Bangalore) provides employment opportunities for destitute women.

17.19 **Bharat Earth Movers Limited (BEML):** In line with Supreme Court directives, the Company has constituted a Women Cell in all the Production Units, including Corporate Office, to redress the grievances of the women employees.

A women Cell, headed by the Officer of the rank of General Manager and three officers, has been set up in MDL to deliberate on ways and means of promoting the growth and development of women employees for harnessing their full potential.

17.20 **Mazagon Dock Limited (MDL):** A women Cell, headed by the Officer of the rank of General Manager and three officers, has been set up to deliberate on ways and means of promoting the growth and development of women employees towards harnessing their full potential. In order to improve the status and position of women employees a database has been prepared to collect comprehensive information on the profile of women employees to evolve a meaningful policy.

DRDO has ensured that women employees are accorded equal opportunities for enhancement of their skills and knowledge for fulfilment of their potential.

17.21 **Garden Reach Shipbuilders and Engineers Limited (GRSE):** A total of 138 women employees are engaged in GRSE in different capacities. Various workshops are organized at regular intervals to make the employees aware of the company's commitment towards gender equality.

7.22 **Mishra Dhatu Nigam Limited (MIDHANI):** The facilities guaranteed to women employees under various welfare legislations applicable to the Company are being extended. A cordial atmosphere has been created for the women employees wherein they can accomplish their job effectively to achieve the organizational goals. Women employees are nominated for various in-house and external training programmes. International Women's Day is celebrated in the organization on March 8, every year.

MATTERS DEALT WITH BY THE DEPARTMENTS OF THE MINISTRY OF DEFENCE

A. DEPARTMENT OF DEFENCE

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 of 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 (India).
10. Civilian Services paid from Defence Estimates.
11. Hydrographic Surveys and preparation of navigational charts.
12. Formation of Cantonments, delimitation/ excision of Cantonment areas, local self-government in such areas, the constitution and powers within such areas of Cantonment Boards and authorities and the regulation of house accommodation (including the control of rents) in such areas.
13. Acquisition, requisitioning, custody and relinquishment of land and property for defence purposes. Eviction of unauthorized occupants from defence land and property.
14. Defence Accounts Department.
15. Purchase of foodstuffs 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 -
    (a) surveillance of maritime zones against oil spills;
    (b) combating oil spills in various maritime zones, except in the waters of ports and within 500 metres of off-shore exploration and production platforms, coastal refineries and associated facilities such as Single Buoy Mooring (SBM), Crude Oil Terminal (COT) and pipelines;
    (c) Central Coordinating Agency for Combating of Oil Pollution in the coastal and marine environment of various maritime zones;
    (d) Implementation of National Contingency Plan for oil spill disaster; and

(e) 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.

B. DEPARTMENT OF DEFENCE PRODUCTION

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. Defence Quality Assurance Organizations including Directorate General of Quality Assurance and Directorate General of Aeronautical Quality Assurance.
10. Standardisation of defence equipment and stores including Directorate of Standardisation.
11. Bharat Earth Movers Limited.
12. Development of aeronautics industry and co-ordination among users other than those concerned with the Ministry of Civil Aviation and the Department of Space.
13. Indigenisation, development and production of defence equipment and participation of the private sector in the manufacture of defence equipment.
14. Defence exports and international cooperation in defence production.

C. DEPARTMENT OF DEFENCE RESEARCH & DEVELOPMENT

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-service organizations on all scientific aspects of weapons; weapon 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 aircraft, 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 weapons systems and related technologies proposed to be acquired by the Ministry of Defence.

10. To render advice on the technological and intellectual property aspects of the import of technology by production units and enterprises manufacturing, or proposing to manufacture, equipment and stores for the Armed Services.

11. To deal with reference made under section 35 of the Patents Act, 1970 (39 of 1970).

12. Financial and other material assistance to individuals, institutions and bodies corporate, for study and for the training of manpower on aspects of Science and Technology that bear on national security.

13. In consultation with the Ministry of External Affairs, international relations in matters connected with the role of Science and Technology in national security including -

    (i) matters relating to relations with Research Organizations of other countries and with Inter-governmental agencies, particularly those which concern themselves, inter alia, with the scientific and technological aspects of national security.

    (ii) arrangements with Universities, educational and research-oriented institutions or bodies corporate abroad to provide for foreign scholarships and the training of Indian scientists and technologists under the administrative control of the Department.

14. Execution of works and purchase of lands debitable to the budget of the Department.

15. All matters relating to personnel under the control of the Department.

16. Acquisition of all types of stores, equipment and services debitable to the budget of the Department.

17. Financial sanctions relating to the Department.

18. Any other activity assigned to, and accepted by, the Department through understandings or arrangements with any other Ministry, Department, Agency of the Government of India whose activities have a bearing on the scientific and technological aspects of national security.

D. DEPARTMENT OF EX-SERVICEMEN WELFARE

1. Matters relating to Ex-Servicemen including pensioners.

2. 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 (Parts 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

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 Service 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 and to monitor the progress of the schemes 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 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 APRIL 1, 2006 ONWARDS

RAKSHA MANTRI

Shri Pranab Mukherjee	From May 23, 2004 to October 24, 2006
Shri A. K. Antony	From October 24, 2006 onwards

RAKSHA UTPADAN RAJYA MANTRI

Rao Inderjit Singh	From January 29, 2006 onwards

RAKSHA RAJYA MANTRI

Shri M.M. Pallam Raju	From January 29, 2006 onwards

Defence Secretary
Shri Shekhar Dutt, SM
From August 1, 2005 onwards

Secretary, Defence Production
Shri K.P. Singh
From November 2, 2005 onwards

Secretary (DR&D) and Scientific Advisor to Raksha Mantri,
Shri M. Natarajan
From August 31, 2004 onwards

Secretary (Defence Finance) / Financial Advisor (Defence Services)
Shri V.K. Misra
Financial Advisor (Defence Services)
From November 8, 2005 to September 7, 2006

Shri V.K. Misra
Secretary (Defence Finance) /
Financial Advisor (Defence Services)
From September 7, 2006 onwards

Chief of Army Staff
General J.J. Singh,
PVSM, AVSM, VSM, ADC
From February 1, 2005 onwards

Chief of Naval Staff
Admiral Arun Prakash
PVSM, AVSM, VrC, VSM, ADC
From August 1, 2004 to October 31 (AN), 2006

Admiral Sureesh Mehta
PVSM, AVSM, ADC
From October 31 (AN), 2006 onwards

Chief of Air Staff
Air Chief Marshal S.P. Tyagi,
PVSM,AVSM,VM,ADC
From December 31(AN), 2004 onwards

SUMMARY OF LATEST COMPTROLLER & AUDITOR GENERAL (C&AG) REPORT ON THE WORKING OF MINISTRY OF DEFENCE

Report No. 4 of 2006: Union Government (Defence Services) Army and Ordnance Factories.

I. MINISTRY OF DEFENCE

Para 2.1 Extra expenditure due to failure in making use of option clause in time.

Army HQ in April 1996 projected requirement of engineering support package for the repair of the Radio sets procured in 1988 by exercising option clause of a contract for procurement of Radio sets concluded in March 1996 with Electronics Corporation of India Limited (ECIL). The option clause though valid upto March 1997 but the same was not exercised by Ministry within validity period. Ministry conveyed its decision to exercise option clause to ECIL in July 1999 but the same was not accepted by ECIL. Ministry took more than three years to reach a decision on procurement of essential maintenance spares for radio sets by which time validity of option clause had expired and spares had to be procured at an additional expenditure of Rs. 4.49 crore, through a supply order placed on ECIL in September 2002 besides, radio sets procured in 1988 remained without maintenance support for more than a decade.

II. ARMY

Para 3.2 Avoidable expenditure of Rs. 4.37 crore in transportation of atta.

Headquarters, Northern Command concluded two contracts for wheat grinding for 2001-03 and 2003-05 with a flour mill at Jammu at a distance of 320 Km from supply depot at Srinagar. During 2001 to 2005, 50533.06 MT of atta was transported from mill at Jammu to supply depot Srinagar and an amount of Rs. 4.37 crore was paid towards transportation charges. Since procurement rate of wheat ex-Food Corporation of India was the same at Srinagar and Jammu, if the contract for grinding had been concluded at Srinagar itself, transportation of atta from Jammu to supply depot at Srinagar could have been avoided. Other Para military forces deployed in the sector were availing of services of local flour mills at Srinagar.

Para 3.4 Infructuous expenditure due to poor planning

Ministry placed three indents on Bharat Electronics Ltd between March 1999 and March 2001 for supply of 2500 radio sets at a cost of Rs. 572.11 crore without taking into account the post up-gradation requirement of spares resulting in rendition of spares worth Rs. 3.01 crore originally procured as surplus.

Para 3.6 Extra expenditure on procurement of expensive oil for a tank

Army HQ was intimated by original equipment manufacturer of a tank (August 2002) that oil 'A' should not be used for their operation in India and only oil 'B' should be used. However, MGO Branch/ Army HQ failed to identify in time the correct oil to be used in tanks resulted in procurement of oil 'A' worth Rs. 80.94 lakh that was not required. In order to utilize it, 10600 liters were diverted to another tank in lieu of cheaper oil which was already in use involving extra cost of Rs. 77.07 lakh.

Para 3.7 Extra payment to a vendor due to non-provision of specifications of carrying box of radio set

Director General, Ordnance Services, Army HQ placed two indents in November 2001 and September 2002 on Bharat Electronics Ltd (BEL) for procurement of 1074 and 500 sets of sophisticated radio equipment without mentioning specification of carrying boxes of radio set in indents. BEL supplied radio sets duly packed in cheaper cardboard cartoon which resulted in extra payment of Rs. 65.58 lakh to BEL.

Para 3.1 Recoveries effected at the instance of Audit

Based on audit observations, Army units and formations recovered or agreed to recover unauthorized, excess and over payments amounting to Rs. 8.49 crore on account of unjustified booking of transportation of the CSD stores from Chennai/ Kolkata to Andaman Nicobar islands, over payments in respect of release cases, railway warrants, rent bills, terminal gratuity, non-availing of high voltage rebate on energy charges and towards conservancy charges.

III. WORKS AND MILITARY ENGINEER SERVICES

Para 4.1 Avoidable expenditure due to wrong selection of site

Due to failure on the part of the Army as well as Centre for Fire Environment Safety to observe basic safety norms for construction of explosive sheds concerned, accommodation constructed at a cost of Rs. 2.13 crore for storing ammunition could not be used for the purpose as it was located near an Air Force Station.

Para 4.2 Avoidable payment of surcharge due to non-maintenance of the stipulated average power factor

Due to delay in installation of shunt capacitors required as per tariff schedule of Jodhpur Vidyut Vitran Nigam Limited resulted in avoidable payment of surcharge of Rs. 1.77 crore.

Para 4.3 Injudicious sanction for upgradation and additional suits to MES inspection bungalows

Disregarding meager utilization of existing inspection bungalows at Faizabad and Lucknow, Head Quarters, Central Command, Lucknow accorded two sanctions (November 2003/ March 2004) for their upgradation and additional suites of these inspection bungalows incurring unjustified expenditure of Rs. 1.59 crore thereof.

Para 4.5 Extra expenditure on unauthorized specifications in works

Head Quarters, Southern Command ordered (July 2004) revision of specification in ongoing works in single living accommodation, kitchen, dinning hall and toilets without the approval from Government which resulted in extra expenditure of Rs. 99.36 lakh.

IV. AIR FORCE & NAVY

i. Acquisition of Executive Jets for Communication Squadron

The Ministry acquired five Executive Jets at a cost of Rs. 712.51 crore. The poor usage of the aircraft sought to be replaced did not justify the acquisition which was made through a non-competitive process, entailing acceptance of an exorbitant amount of Rs. 126.90 crore for five aircraft towards modification of interiors and in-flight entertainment. (Para 2.1 of Report No. 5 of 2006) Air Force and Navy)

ii. Procurement of Unmanned Aerial Vehicles

Twelve Unmanned Aerial Vehicles (UAVs) imported at a cost of Rs. 567 crore in the wake of the Kargil Review Committee recommendation could not be utilized due to injudicious selection of operational sites and inability of Navy to complete infrastructure facilities in time for their operations. (Para 2.2 of Report No. 5 of 2006) Air Force and Navy)

iii. Acquisition of Missiles by IAF

The tender process adopted in conclusion of a contract for import of missile at a cost of Rs. 407.30 crore for Air Force lacked competitiveness and transparency. Ineffective negotiations resulted in contracted missiles already Rs. 50.60 crore more expensive than the more advanced version of the same missile available with the Air Force. (Para 2.3 of Report No. 5 of 2006) Air Force and Navy)

iv. Parking of funds with Public Sector Undertaking

Ministry advanced Rs. 995.70 crore to Mazagaon Dock Limited between 1996 and 2002 without placing any orders to avoid surrender of funds. Failure to recover adequate financial compensation resulted in a financial loss to the extent of Rs. 156.12 crore till March 2005. (Para 2.6 of Report No. 5 of 2006) Air Force and Navy)

v. Acquisition of Marine Pollution Surveillance Capacity

Three Dornier aircraft costing Rs. 102 crore received in March 2001 by the Coast Guard for marine pollution surveillance were not provided with vital Operational Role Equipment due to improper handling by Government. There was no assurance that the equipment contracted after much delay was appropriate. (Para 5.1 of Report No. 5 of 2006) Air Force and Navy)

vi. Extra expenditure in purchase of Navigation System

Ministry's failure to take advantage of the prices available under an option clause of a contract within its validity period and belated exercise of the option clause at higher prices without inviting bids from other vendors led to extra expenditure of Rs. 29.90 crore in import of 95 sets of Navigational System for the Air Force. (Para 2.4 of Report No. 5 of 2006) Air Force and Navy)

vii. Procurement of one extra fast attack craft

A vintage Extra Fast Attack Craft was acquired at a cost of Rs. 33.56 crore citing

urgent operational requirement of the Navy through a process, which precluded competition and lacked transparency. Failure to negotiate an appropriate depreciation resulted in loss of Rs. 4.16 crore. (Para 4.1 of Report No. 5 of 2006) Air Force and Navy)

viii. Irregular grant of allowances of DSC personnel

DSC personnel engaged with the Air Force formations in the North East were not entitled to the counter insurgency allowance and related concessions. Failure of internal controls led to irregular payment of counter insurgency allowance aggregating Rs. 3.51 crore. (Para 2.5 of Report No. 5 of 2006) Air Force and Navy)

ix. Import of spares at exorbitant prices

Avoiding internal controls at different stages and taking decision on incorrect premises by Naval HQ led to acceptance of higher rate in import of spares. A more judicious decision to place orders for specific items on competitive basis would have yielded a saving to the extent of Rs. 9 crore. (Para 4.3 of Report No. 5 of 2006) Air Force and Navy)

x. Non-commissioning of imported equipment

Poor planning resulted in delay in completion of works services for phase-I of Service Support Centre for SU-30 aircraft leading to non-commissioning of equipment worth Rs. 53.95 crore since June/ October 2004. (Para 3.3 of Report No. 5 of 2006) Air Force and Navy)

xi. Acquisition of ready built flats for Coast Guard

Although acquisition of ready built flats for Coast Guard was simultaneously processed alongwith Navy, Ministry did not explore the possibility of waiver of interest charges, exemption of stamp duty and registration charges in respect of Coast Guard as in the case of Navy resulting in avoidable extra expenditure of Rs. 2.63 crore. (Para 5.2 of Report No. 5 of 2006) Air Force and Navy)

xii. Unauthorized construction of Officers' Institute

Prime land valuing Rs. 74.24 lakh was utilized to construct a transit accommodation by Western Air Command in IAF unauthorisdely under the nomenclature of Officers' Institute involving irregular expenditure of Rs. 33.18 lakh. (Para 3.2 of Report No. 5 of 2006) Air Force and Navy)

xiii. Procurement of spares for test rig

Delay in taking action in procurement of spares for test rig by the Air Force at the appropriate time led to excess expenditure of about Rs. two crore. (Para 3.1 of Report No. 5 of 2006) Air Force and Navy)

xiv. Unnecessary import of stores under special financial powers

Special financial powers delegated to Naval HQ in the wake of Operation Parakram were invoked for unnecessary purchase of spares worth Rs. one crore for turbo alternators for INS Virat even though the ship was neither identified as front line ship, nor there was adequate justification for their procurement. (Para 4.2 of Report No. 5 of 2006) Air Force and Navy)

xv. Recoveries at the instance of Audit

An aggregated amount of Rs. 4.98 crore was recovered at the instance of Audit. (Para 3.4, 4.4 and 5.3 of Report No. 5 of 2006) Air Force and Navy)

V. PERFORMANCE AUDIT REPORT

Licensed manufacture of an aircraft

IAF procured 50 aircraft 'A' from a foreign country between 1997 and 2004. The Government approved licensed manufacture of 140 aircraft 'A' by HAL in 2000. The project was expected to be completed by 2017-18. The order for the first block of 34 aircraft was placed on HAL in December 2003.

Specification of vital air borne systems to be integrated on the aircraft 'A' was not frozen before entering into a contract for its licensed manufacture. Delivery schedule of the licensed manufacturing programme had to be compressed to meet operational requirements of IAF indicating inadequate planning for the programme. The contract with the Original Equipment Manufacturer (OEM) for licensed manufacture had several infirmities. The entire license fee for manufacture of 140 aircraft till 2017-18 was paid upfront, in advance, without any provision for reduction in case a lower number were finally manufactured. The cost of indigenous manufacture worked out to be more than import cost. Besides, there have been cost escalations, and in the absence of binding provisions, the cost continues to rise. Establishment of repair and overhaul facilities were lagging behind schedule leading to increased dependence on the OEM for repair.

(Chapter I of Performance Audit Report No. 4 of 2006)

Maintenance of an aircraft fleet in IAF

Performance Audit of the maintenance of an aircraft 'B' in the Indian Air Force revealed that despite executing appropriate agreements with the OEM, establishment of adequate repair and maintenance facilities lagged way behind the induction of aircraft, resulting in continued dependence on the OEM for maintenance.

Performance of HAL was not optimal. HAL was unable to meet the annual full-overhaul tasks of engines. Even after completion of facilities, the failure rate of HAL overhauled engines was very high and the turn around time taken for overhaul by HAL was higher compared to engines overhauled by the OEM. Base Repair Depot also utilized 36.34 percent and 47.73 percent more than the standard manhours and fixed higher rates than the one envisaged in the Detailed Project Report for the overhaul of aircraft. BRD also did not have a proper cost accounting system and their cost estimates were unreliable.

The sub-optimal performance by maintenance agencies resulted in low serviceability and aircraft flying efforts at squadrons; serviceability status fluctuated between 43 and 62 percent and there was a shortfall in flying tasks ranging from 87.48 to 42.52 percent between 1997-98 and 2004-05.

The expectation that establishment of overhaul facilities would bring about savings in foreign exchange and turn around time could not be achieved. As against the assessed cost of overhaul of Rs. 4.15 crore per engine the actual cost worked out to Rs. 5.21 crore.

Poor product support from the OEM was a recurring problem. Consequently, due to non-availability of spares, HAL sent 1280 lines of aggregates abroad for repair between 1998-99 and 2004-05. Likewise, 2223 lines of spares against 57 orders were awaiting supplies at BRD as of July 2005. This also led to cannibalization at all levels

with adverse implications on flight safety. There is an urgent need to use the lessons learnt from the aircraft 'B' experience in respect of ongoing and future induction.

(Chapter II of Performance Audit Report No. 4 of 2006)

Project management in Navy

Indian Navy conceived in 1980s three major project for modernizing its infrastructure to meet the growing demands of the Navy. These projects are: a permanent Naval Academy at Ezhimala, a new Naval Base at Karwar and modernization of Naval Hospital Asvini at Mumbai. There was steep cost escalation for the Academy from Rs. 167 crore to Rs. 500 crore, for the Base from Rs. 1,295 crore to Rs. 2,459 crore and for the hospital from Rs. 93 crore to Rs. 137 crore. Poor estimation of costs at the design stage, repeated revision of specifications and scope of works, failure to cap variations and inclusion of unfavorable provisions in contracts contributed towards cost escalation. The delay in the Academy and the Hospital Projects was due to the engagement of an architect firm as the Project Consultant. The process followed in the selection of the consultant was not as per the standard best practices and the inexperience of the consultant and their substandard work only enhanced the teething troubles.

There were serious delays in decision making and implementation. Project Management Bodies were ineffective in ensuing adherence to the stipulated schedules and cost. There was little evidence of any pro-active problem solving approach. The projects are still at various stages of construction/ completion. As a result, resource development activities are stifled in the inadequate INS Mandovi, the existing training establishment, decongestion of Naval Dockyard, Mumbai continues to be a distant dream, and a large portion of Naval and other Service personnel and their families do not yet have state of the art medical facilities.

Located in coastal areas, the three projects have significant environmental impact. While the Project Authorities have provided an assurance that environmental concerns have been adequately addressed, the Navy needs to make continuing efforts towards protecting the fragile coastal ecosystems of the area in which these projects are located.

In the light of the deficiencies noticed in the implementation of these three major projects certain recommendations have been made in the report for strengthening management of critical and large construction projects.

(Chapter III of Performance Audit Report No. 4 of 2006)

VI. ACQUISITION WING SECTT

Audit Report No.12 of 2006

Bharat Earth Movers Limited incurred liquidated damages of Rs. 1.19 crore due to avoidable delay in supply of Rope Shovels to Coal India Limited beyond the scheduled delivery period of April, 2003. (Para 8.1.1)

Incorrect estimation of income and consequential short payment of advance income tax during 2000-01 to 2003-04 by Bharat Electronics Limited in avoidable expenditure of differential interest of Rs. 3.05 crore. (Para 8.2.1)

Due to inordinate delay in indenting, coordinating and executing and failure to monitor the job, Garden Reach Shipbuilders and Engineers Limited suffered and avoidable loss of Rs.2.61 crore. (Para 8.3.1)

Failure of the internal audit/internal control system in Hindustan Aeronautics Limited to detect short billing of material resulted in loss to the extent of Rs. 64.62 lakh. (Para 8.4.1)

Vingyan Industries Limited incurred an avoidable loss of Rs. 1.42 crores due to abnormal rejections of steel castings. (Para 8.5.1)

VII. RESEARCH AND DEVELOPMENT ORGANISATION

Para 6.1 Unfruitful expenditure of Rs. 65.24 lakh on augmentation of fire fighting system.

Due to failure in not considering replacement of 16 year old hydrant pipelines, the fire fighting system augmented at a cost of Rs.65.24 lakh at Proof and Experimental Establishment Chandipur could not sustain the required pressure. Moreover, the sensitive establishment remained exposed to serious fire hazard for the last seven years.

VIII. ORDNANCE FACTORY ORGANISATION

Para 7.2 Infructuous expenditure in manufacture of mine clearing vehicles.

Bulk manufacture of charge line mine clearing vehicles by Ordnance Factory Chanda before resolving design deficiencies led to infructuous expenditure of Rs.3.89 crore towards their manufacture.

Para 7.3 Excess consumption of raw materials worth Rs. 1.91 crore

Ordnance Clothing Factory Shahjahanpur revised the estimate of yarn raw material used in manufacture of vests upward so as to offset excess consumption of yarn raw material valued Rs.1.91 crores due to inefficiency in production process.

Para 7.5 Avoidable consumption of cartridges.

Due to failure of Rifle Factory Ishapore to exercise proper control over consumption of empty 5.56 mm ball cartridges during pre-proof functioning test coupled with their inability to stabilize production process of a weapon led to avoidable consumption of cartridges worth Rs. 3.14 crore.

IX. INFORMATION TECHNOLOGY AUDIT

Computerized Inventory Control Project in Central Ordnance Depot, Delhi.

The Army Ordnance Corps with the network of Central Ordnance Depots, field level depots and ordnance units is responsible for the inventory management of weapons, ammunition, vehicles, equipment and stores of the Army. Computerization of the management of the huge inventory held by the Army was a long felt need. The Ministry accorded sanction in July 1994 for implementation of the Computerized Inventory Control Project (CICP) to be completed by June 1999. The project was planned to be implemented in a phased manner with the objectives of bringing about better asset visibility, assistance in reducing

inventory holding and carrying costs, provision of Management Information System to users and management, reduction of manual intervention and reduction in manpower and related costs.

An audit scrutiny of the Project revealed that the CICP, a conceptually good project, had been very badly delayed and only one Phase could be implemented. Presently, the completion date of the entire project was uncertain as the phase III was yet to be sanctioned. This led to denial of full benefits of computerization namely better asset visibility, restricted wastage, on-line MIS for efficient management, instance reaction to operational requirements, better utilization and down sizing of manpower. In addition, one per cent saving, estimated at Rs. 500 crore as a consequence of reduction in total inventory holding (Valuation 2002), could not be achieved.

Further, not all the modules of the implemented phase I were fully functional and the Army was still dependent on manual functions for important areas like provision reviews. The database was incomplete to a large extent. There were few inherent design deficiencies in the software. Lack of Business Process Reengineering had rendered the application to be of limited use in its present form. The entire application was running in a security environment that was far from satisfactory. (Chapter-IV of Report No.3 of 2006 Army and Ordnance Factories (Performance Audit)

Armoured Vehicle Group of Factories

The Armoured Vehicle Group of Factories comprises of five ordnance factories under the control of the Ordnance Factory Board, which meet the requirement of the Army for armoured vehicles, engines and their components. Performance Audit of the activities of the above Group of Factories relating to the period April 2000 to March 2005 revealed delay of more than five years in production and issue of Tank 'X' affecting its induction schedule and modernization of mechanized forces, sanctioning of indigenous production of Tank 'Z' despite non-freezing of the design resulting in delay in obtaining components and sub-assemblies from various vendors and the process of manufacture and assembly at the Heavy Vehicle Factory, Avadi (HVF), poor performance of the HVF in the overhaul of tank 'X' coupled with delayed release of tanks by the Army causing backlog of the tanks to be overhauled affecting operational readiness, annual shortfall in production target of tank 'X' by the HVF ranged between 20 to 100 percent, payment of overtime allowance to the tune of Rs. 58.46 crore by three out of five factories despite the available man-hours remaining underutilized, spill over in production of Tanks, engines and components valued at Rs. 1521.74 crore during 2001-02 to 2004-05 resulting in distorting of the unit value of production of items manufacture and overstatement of the value of production and issues to the tune of Rs.1521.74 crore over the four year period, failure of HVF in attending to repairs promptly resulting in accumulation of repairable arisings work Rs.91 crore of which items work Rs.7 crore were rendered beyond economical repair causing loss to the exchequer. (Chapter-III of Report No. 3 of 2006 Army and Ordnance Factories (Performance Audit)