



सत्यमेव जयते



MINISTRY OF DEFENCE

GOVERNMENT OF INDIA





ANNUAL REPORT 2020-21



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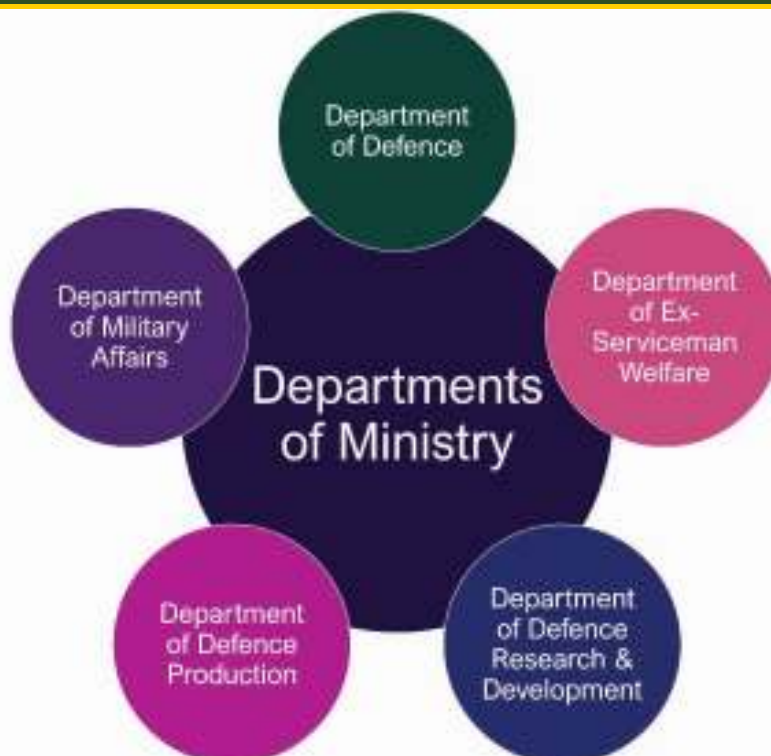
Departments and Organisations under Ministry of Defence

After Independence, Ministry of Defence was created under the charge of a cabinet minister and each Service was placed under its own Commander-in-Chief. In 1955, the Commanders-in-Chief were renamed as the Chief of the Army Staff, the Chief of the Naval Staff and the Chief of the Air Staff. In November 1962, the Department of Defence Production was set up to deal with research, development and production of defence equipment.

In November, 1965, the Department of Defence Supplies was created for planning and execution of schemes for import substitution of defence requirements. These two Departments were later merged to form the Department of Defence Production and Supplies. In 2004, the name of Department of Defence Production and Supplies was changed to Department of Defence Production. In 1980, the Department of Defence Research and Development was created. In 2004, the Department of Ex-Servicemen Welfare was setup. In 2019, a new department namely Department of Military Affairs was created with the aim to facilitate optimal utilization of resources and to promote jointness among the three services.

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

Departments Of Ministry

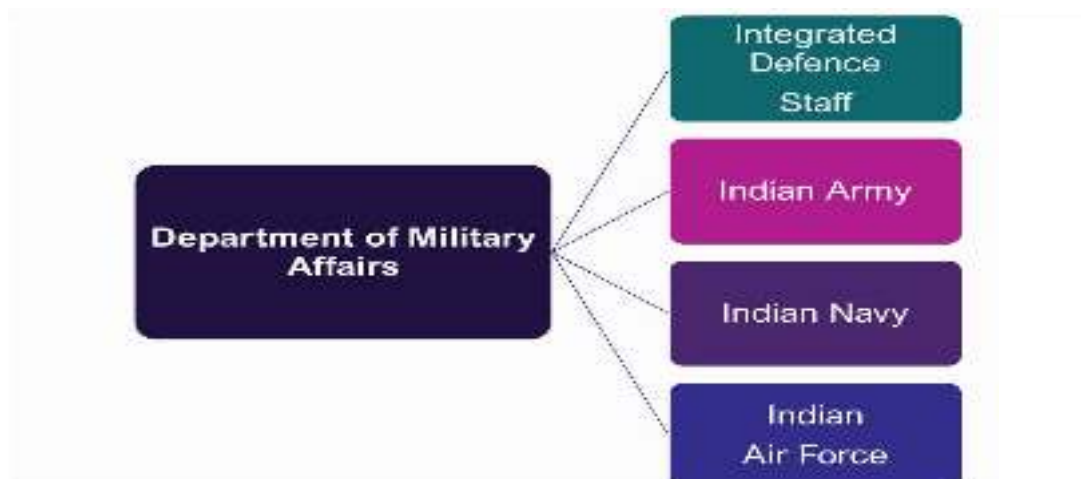


- i) The **Department of Defence** headed by the Defence Secretary deals with Defence Policy and planning, Defence Acquisition and Defence Cooperation with foreign countries. It is also responsible for the Defence Budget, establishment matters, matters relating to Parliament and co-ordination of all defence related activities.



Organizations of Department of Defence

- ii) The **Department of Military Affairs (DMA)** headed by Chief of Defence Staff as its Secretary deals with the promotion of jointness in procurement, training and staffing for the services. Facilitation of restructuring of Military commands for optimal utilization of resources and promotion of use of indigenous equipment is also the mandate of this department.



Organizations of Department of Military Affairs

iii) The **Department of Defence Production (DDP)** is headed by a Secretary and deals with matters pertaining to defence production, indigenization of imported stores, equipment and spares, planning and control of departmental production units of the Ordnance Factory Board and Defence Public Sector Undertakings (DPSUs).



iv) The **Department of Defence Research and Development (DRDO)** is headed by a Secretary DD R&D & Chairman, DRDO. 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.



v) The **Department of Ex-Servicemen Welfare (DESW)** is headed by a Secretary and deals with all resettlement, welfare and pensionary matters of Ex-Servicemen.





Department of Defence

Ceremonials, Honours and Awards

The responsibility for organising National functions like the Republic Day Parade, Beating the Retreat Ceremony, Martyr's Day and the Independence Day rests with Ministry of Defence. The Ministry also organises the Defence Investiture Ceremonies for presentation of Gallantry and Distinguished Service Awards at Rashtrapati Bhawan in association with the President's Secretariat.

Due to COVID-19 situation in the country, the Defence Investiture Ceremonies for 2019-20 could not be organized. However, all the other ceremonies including Independence Day Ceremony-2020 and Republic Day Ceremony-2021 were organized successfully. While organising these ceremonies, all guidelines issued by Ministry of Home Affairs and Ministry of Health & Family Welfare including norms for social distancing were followed. The Ceremonial functions organised during 2020-2021 are detailed in the following paragraphs:

Independence Day Flag Hoisting Ceremony

The celebration of the Independence Day began with singing of patriotic songs by the NCC cadets at Red Fort. The three Services and Delhi Police presented the Guard of Honour to the Prime Minister.



Thereafter, the Prime Minister unfurled the National Flag on the Ramparts of the Red Fort to the accompaniment of the National Anthem played by the Services Band. Twenty-one-gun salute was presented on the occasion. After the Prime Minister's address to the nation, the ceremony concluded with the singing of National Anthem by NCC Cadets followed by release of balloons. Later during the day, the President laid a wreath at

National War Memorial to pay homage to those who sacrificed their lives for the freedom of the motherland.



Gallantry Awards announced on the eve of the Independence Day, 2020

Vijay Diwas



Vijay Diwas was celebrated on December 16, 2020. Since, the nation celebrated 50 years of victory of 1971 war, the year 2021 was celebrated as "Swarnim Vijay Varsh" to showcase the valour and strength of the Indian Armed Forces. As a part of Swarnim Vijay Varsh celebrations, Swarnim Vijay Mashaal Lighting Ceremony was held on December 16, 2020 at National War Memorial wherein four Swarnim Vijay Mashaals were lighted which have been taken to four cardinal directions of the country covering the entire Nation. Also, the logo for the Swarnim Vijay Varsh was unveiled on this occasion.

Ceremony at National War Memorial



The Prime Minister laid wreath at National War Memorial in the morning of January 26, 2021. Two minutes' silence was observed for paying homage to those who laid down their lives in safeguarding the integrity of our nation.

Republic Day Parade, 2021



The unfurling of the National Flag at Rajpath marked the beginning of Republic Day Parade. The President's Body Guards presented the National Salute followed by the National Anthem played by the Service Bands and a 21 gun salute. No Chief Guest was present during Republic Day Parade this year.

In addition, various mechanized columns, marching contingents and bands of the three services, Central Armed Police Forces, Delhi Police, NCC, NSS etc. were part of the parade.

Tableaux of States, Central Ministries/Departments and cultural items presented by school children were the other attractions of the parade. 28 tableaux and four children items were part of the parade. The parade concluded with an impressive Fly Past by Indian Air Force.



Gallantry Awards announced on the Republic Day, 2021



Distinguished Services Awards announced on the Republic Day, 2021

Beating the Retreat Ceremony, 2021



'Beating Retreat' is a centuries old military tradition practised by the troops at the time of disengaging from battle at sunset. The Beating the Retreat Ceremony denotes departure of the troops assembled at Delhi for participating in the Republic Day Celebrations. The ceremony was organised at Vijay Chowk on January 29, 2021, which brought down the curtain on the Republic Day festivities. Bands of the three Services along with Central Armed Police Forces (CAPFs) Band participated in this ceremony. The conclusion of the ceremony coincided with illumination of the Rashtrapati Bhawan, North Block, South Block, Parliament House and India Gate.

Martyrs' Day Ceremony, 2021



On January 30, 2021, the President laid a wreath at Mahatma Gandhi's Samadhi at Rajghat. The Vice President, the Prime Minister, the Raksha Mantri and other dignitaries also paid floral tributes. This was followed by observance of two minutes' silence at 1100 hours to pay homage to those who sacrificed their lives in India's struggle for freedom.

State Funeral to the Dignitaries

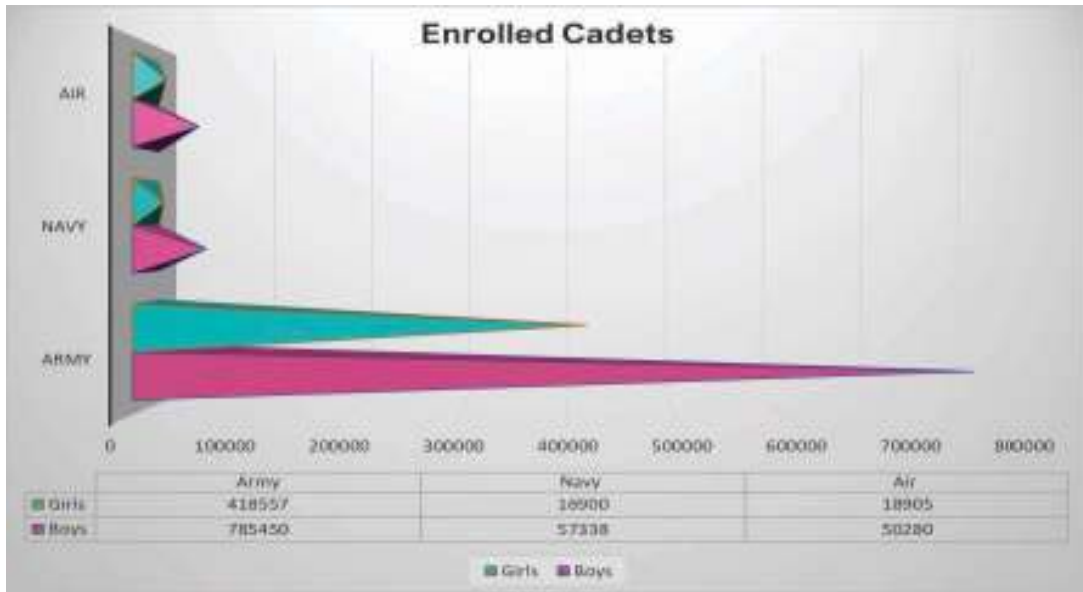


All arrangements for providing State Funeral to Shri Pranab Mukherjee, former President of India who passed away on August 31, 2020 were made in coordination with other concerned agencies.

National Cadet Corps

The National Cadet Corps (NCC) was established by the NCC Act, 1948. It has completed 72 years of existence. The NCC strives to provide the youth of the country opportunities for all round development with a sense of commitment, dedication, self-discipline and moral values, so that they become responsible citizens of tomorrow. The motto of NCC is **“Unity and Discipline”**.

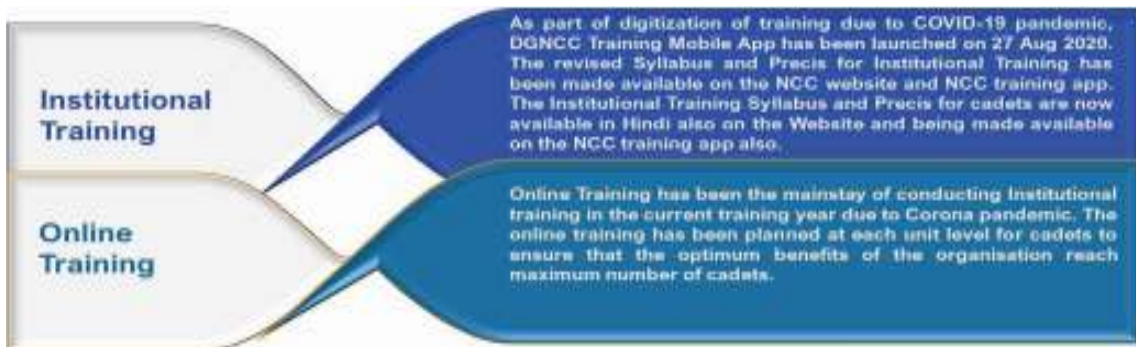
The sanctioned strength is 15 Lacs and the total number of NCC Units are 825. Wing-wise distribution of enrolled cadet strength as on 30 Sep 2019 (year 2019-20) is as under :-



As on date NCC covers a total of **17644** institutions, which includes **12401** Schools and **5243** Colleges across the country. Girl cadets make 33% of the total enrolment. Additional 1104 institutions of Border and Coastal scheme are likely to be added for 2020-2021.

Institutional Training and Camp Training

Institutional Training



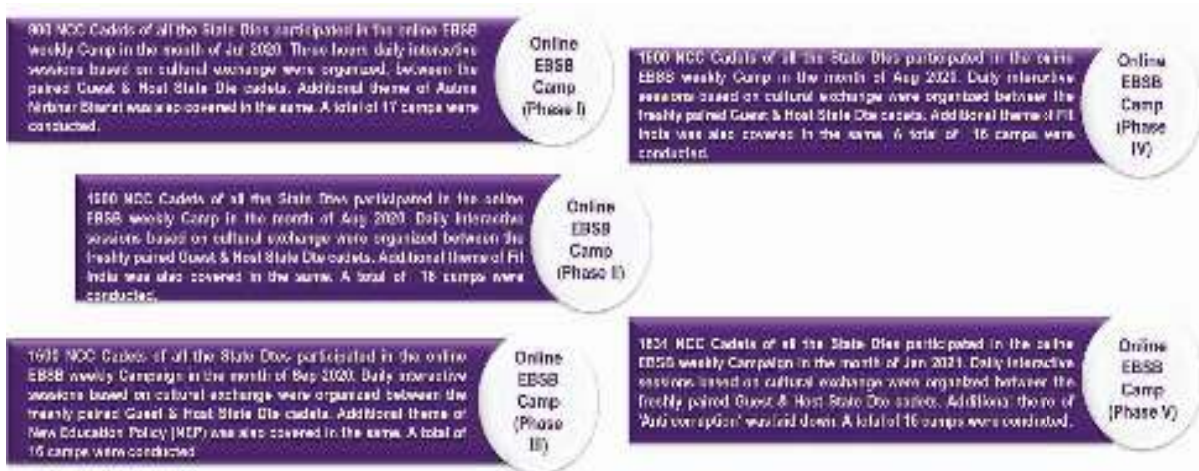
Types of Institutional Training

Camp Training

Camp Manual Revision – The Camp Manual for Camp Training has been revised.

Annual Training Camp (ATC)/Combined Annual Training Camps (CATCs) – 1500 camps @ 500 Cadets each camp are conducted in a training year and approx 7.5 lac cadets attend the same.

EK Bharat Shrestha Bharat (EBSB) – 35 camps involving 20,400 Cadets Pan India were planned this year. However due to COVID-19 restrictions, 81 EBSB camps have been conducted online and total 7531 cadets participated. The details are as under :-



Online EBSB Camp Details

Vayu Sainik Camp (VSC) – Air Force Central camp strength increased from 592 Cadets to 629 Cadets. Increase in next four years has been planned for 68 more Cadets. This camp could not be conducted due to COVID-19 pandemic.

Nau Sainik Camp (NSC) – Navy Central camp strength increased from 590 Cadets to 612 Cadets. Increase in next four years has been planned for 90 more Cadets. This camp could not be conducted due to COVID-19 pandemic.

Thal Sainik Camp (TSC) – Army Central camp strength increased from 1360 Cadets to 1564 Cadets (151 Cadets). Increase in next four years has been planned for 136 more Cadets. This camp could not be conducted due to COVID-19 pandemic.

Advance Leadership Camps (ALCs) – Six ALCs were planned with 1800 Cadets. This camp could not be conducted due to COVID-19 pandemic.

Rock Climbing Training Camps (RCTC) – Four camps for 1080 Cadets were planned in the training year with 10% increase in strength from last training year. However, the same could not be conducted this year due to COVID-19 restrictions.

SSB Training – SSB Training for cadets was conducted at State Dte level under qualified instructors/ experts hired from Training institutes. 773 cadets underwent online Training in 2020.

Republic Day Camp (RDC) – Camp strength was planned to be increased from 2070 to 2155 (85 Cadets) this year onwards. However due to COVID-19 restrictions, only 1000 cadets participated in RDC 2021 wef 20 December, 2020 to 29 January, 2021. In the future, it is planned to increase strength to 2500 Cadets by 2023.

Prime Minister's Rally – The Prime Minister's Rally, the most prestigious event of the NCC Republic Day Camp was held on 28 January. This year, contingents from all the 17 State NCC Directorates participated in the March past & during this rally, they also displayed their skills in various activities like microlite flying, parasailing and cultural programme. Fly past by NCC microlite aircraft was also conducted during the PM's Rally. The PM's Rally culminated with award of Prime Minister's Banner to Andhra Pradesh & Telangana Dte by the Hon'ble Prime Minister. The event was witnessed by a number of dignitaries that included Hon'ble Raksha Mantri, Chief of Defence Staff, three Service Chiefs and Defence Secretary.

Flying Training



110 Virus SW Microlite induction & absorption were completed in 2019 and all 50 Air Squadrons have been operationalized. However, only limited training has been conducted this year due to COVID-19 pandemic.

Yachting Special Training Camps

350 cadets were planned to be trained in the current training year at five different nodes. However, these camps could not be conducted due to COVID-19 pandemic.

Attachment Training



Details of Attachment Training

Pre-Commissioning (PRCN) Courses for ANOs – In COVID-19 situation, Courses at OTA, Kamptee (Male) & OTA Gwalior (Females) were conducted for 242 ANOs from 14 Sep 2020 to 12 Dec 2020.

Disaster Management Training – HQ NDRF, New Delhi has agreed to conduct training on Disaster Management for NCC cadets during annual training camps, through their Regional Centres Pan India, for PI Staff at NDRF HQ at Nagpur and for ANOs at OTA Kamptee.

Training App Launch – NCC Training App Version 1.0 was launched by Hon'ble Raksha Mantri on 27 Aug 2020 through an online ceremony. The App includes Brief on NCC, Syllabus, Precis, Interactive Videos, Frequently Asked Questions and also Query by Cadets. Online training of cadets under guidance of respective ANOs is under progress. Launch of Version 2.0 of the existing Training App is now under process.

EX YOGDAAN by NCC Cadets During COVID-19 – NCC cadets provided valuable assistance to the local administrations in educating the local populace about the COVID-19 through EX YOGDAAN. Cumulative employment of approx 1,39,145 Cadets & 21,067 ANOs has taken place Pan India till date. Over Two Lac cadets have enrolled for iGOT Training, and completed their training. Kitting and Insurance of cadets is being ensured as per the procedures.

Disaster Management (Flood Relief) – NCC Cadets voluntarily participated in the recent Bihar, Kerala & UP Flood Relief works, by assisting the local administration machinery through relief efforts and distribution services in the affected districts, during the COVID-19 times.

Sports and Adventure Activities

Associated Membership Hockey India

NCC is now an associate member of Hockey India. NCC hockey teams will now be able to participate in National level hockey tournaments recognized by Hockey India.

Youth Exchange Programme



NCC has YEP with 10 countries. Officers and cadets from foreign countries have been visiting India during RDC, Desert Safari and Shivaji Trail Trek and an equal number from NCC India have been visiting these countries. However, in 2020-21 the exchange of visits did not take place due to COVID-19 pandemic.

The correspondence for expansion of Youth Exchange Programme with five countries i.e. Australia, France, Canada, the USA and the UK is under progress with the respective Governments.

Correspondence for signing of MoUs with seven friendly foreign countries with which India has Youth Exchange Programme i.e. Bangladesh, Bhutan, Nepal, Maldives, Russia, Singapore and Sri Lanka is under progress.

Social Service & Community Development

International Yoga Day (IDY – 2020)



International Day of Yoga – 2020 online was celebrated Pan India. Yoga at Home with family and neighbours / friends to include Yoga awareness campaign was carried out. The total participation of NCC cadets was approx **10.5 Lac NCC cadets**.

Tree Plantation Drive

A Tree Plantation Drive was carried out by NCC in Jun-Jul 2020. The theme was “in house & in neighbourhood”. Over **3.5 Lac Saplings** have been planted by NCC.



Kargil Vijay Diwas Webinar



A total of **280 Webinars** were conducted by the NCC Directorates wherein **3000 Cadets** participated.

Atma Nirbhar Bharat Campaign



On the occasion of Independence Day, Aatma Nirbhar Bharat Campaign was organized Pan India by NCC from 01 to 15 Aug 20. **Approx 3.59 Lac Cadets participated and over 14 Lac citizens impacted** across the Nation.

Fit India Campaign

Fit India Campaign was organized by NCC from 15 Aug 2020 to 14 Sep 2020. **Over 14.75 Lac Cadets participated** in variety of Fitness based activities including awareness and **approx 33 Lac citizens were impacted** across the Nation to include the neighbours, family members and friends. Daily Short Runs were also carried by cadets and their family/friends upto 02 Oct 2020 (Gandhi Jayanti). Total cumulative, over 59 Lac Kms were covered during the period.



National Education Policy (NEP) Awareness Drive



NEP awareness online campaign was launched by NCC Pan India from 14 Sep to 10 Oct 2020. A **total of 50,411 Cadets attended 945 webinars** on the issue. **Over 1.74 Lac population was impacted** by approx 2 Lac social media posts.

Swachhata Campaign (14 Sep to 16 Oct 20)



5.5 lac Cadets participated through 850 webinars

Constitution Day Celebrations



Constitution Day (26 November) monthly awareness drive was conducted pan India from 18 Nov to 13 Dec 2020 alongwith NCC Day celebrations (22 Nov), by NCC Cadets at mass level, in coordination with various Youth organizations. The event was inaugurated by Hon'ble Raksha Mantri. A total of **9.63 Lac cadets participated** impacting a population of approx 35 Lacs.

Swachhta Pakhwada (01 to 15 Dec 2020) - NCC participated in Swachhta Pakhwada from 01 to 15 Dec 2020 as per guidelines given by MoD. A total of **6.2 Lac cadets participated** impacting a population of approx 25 Lacs.

Youth Festival - 86,500 cadets participated in the youth festival to promote National integration in the month of Jan 2021. 08 online ESB camps and 850 unit webinars were conducted.

Swarnim Vijay Varsh



15000 cadets have participated in Swarnim Vijay Varsh celebrations to commemorate the 50 years of Victory in 1971 War and liberation of Bangladesh.

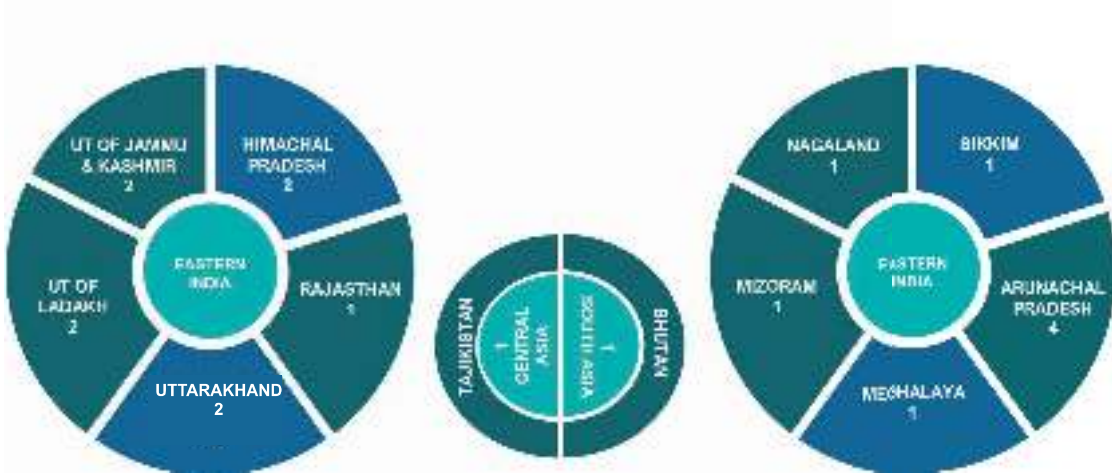
Parakram Diwas

17000 cadets participated in Parakram Diwas celebrations to commemorate the 125th Birth anniversary of Netaji Subhash Chandra Bose.



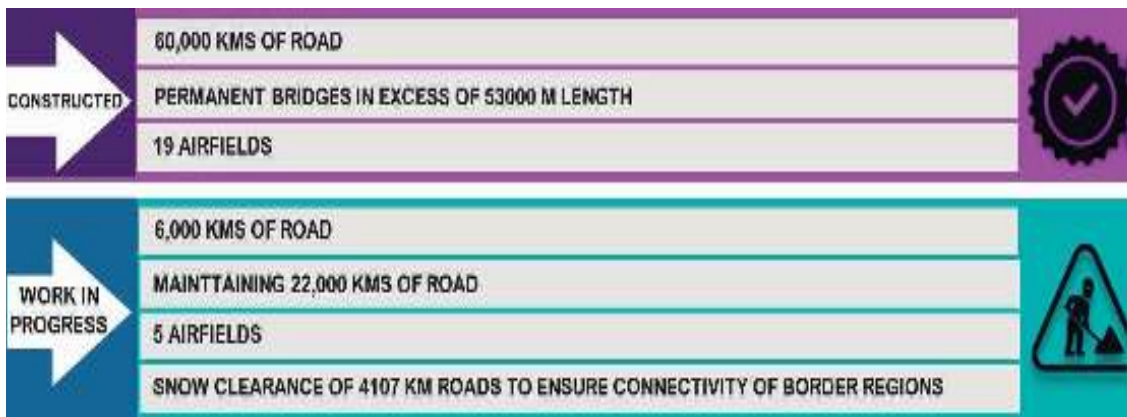
Border Roads Organization

Border Roads Organisation (BRO) is a premier road construction agency raised to meet the road infrastructure requirements of the Armed Forces. Starting operations in May 1960 with two Projects, it has now grown to 18 Projects.



BRO Projects located in different jurisdictions

BRO has earned a reputation of being the only road construction agency to construct and maintain roads in difficult, isolated and inhospitable terrain under inclement weather conditions.



Construction Details

Major Achievement by BRO (April 2020 to January 2021)

1. Road Ghatiabagarh – Lipulekh:



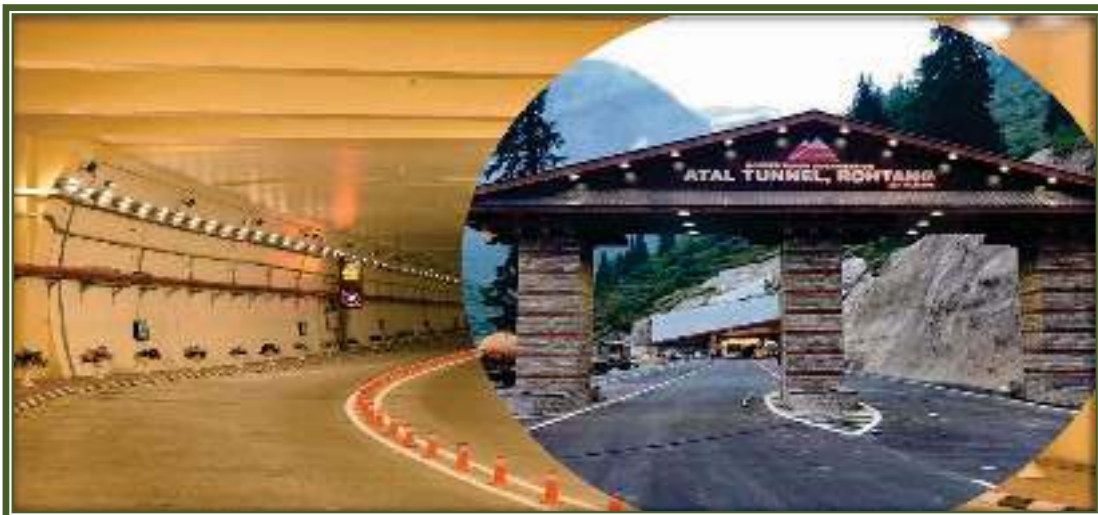
The initial connectivity was achieved on April 17, 2020. Raksha Mantri inaugurated the Link road to Kailash Mansarovar Yatra via video link on May 8, 2020.

2. Breakthrough of Chamba Tunnel:



Minister for Road Transport & Highways witnessed the breakthrough event of Chamba Tunnel underneath busy Chamba town on Rishikesh-Dharasu road via video link on May 26, 2020.

3. Atal Tunnel Rohtang:



This tunnel of length 9.02 Km was dedicated to Nation by Prime Minister on October 3, 2020. This is the longest tunnel in the world above 10,000 feet altitude.

4. Completion of Indo-China Border Roads (ICBRs):

61 Roads (3343 Km) of Phase-I have been entrusted to BRO for construction/ development. As on date 2620 Km road length has been completed and 3314 Km (99%) connectivity achieved.



ICBRs completed during the FY 2020-21 (up to January 2021)

5. Adoption of EPC mode in BRO:

Adoption of Engineering Procurement Contract (EPC) mode of execution has been approved by Ministry of Defence on August 29, 2017. Accordingly, all works costing more than Rs. 100 crore have been planned to be executed through EPC mode. 42 works have been planned to be outsourced through EPC mode. As on date 42 contracts for preparation of DPRs have been awarded.



Civil works awarded for construction on EPC mode

6. **Commencement of Work of Nechiphu Tunnel:**

Work on 500 mtr long Nechiphu tunnel has commenced. First blasting was witnessed by Raksha Mantri through video link on October 12, 2020.

7. **Connectivity of Lungro Gg-damteng-yangtse (L-D-Y) Road:**

Connectivity of Strategically important Road Lungro Gg-Damteng Yangtse of length 52 Km through the most uncongenial, stiff hilly terrain with steep gradient in the remote High Altitude Area (HAA) in Arunachal Pradesh has been achieved and made through for traffic on October 23, 2020.

8. **Gangtok-Nathula Alternative Alignment Road:**



Road Gangtok-Nathula alternative alignment from Km 0.00 to Km 19.35 in Sikkim State has been dedicated to the Nation by Raksha Mantri on October 25, 2020.

9. **Bridges Completed & Inaugurated:**



Chief Minister of Arunachal Pradesh inaugurated 430 feet long bailey bridge at Daporijo over the Subansiri river in Upper Subansiri District via video link on April 20 2020.

10. **TawangChhu Bridge**

Chief Minister of Arunachal Pradesh dedicated to Nation 50 mtr TawangChhu Bridge over TawangChhu river in Tawang District and 45 mtr Sukha Bridge over Sukha Nallah in West Kameng District on May 23, 2020.



11. **Puneja & Devika bridge:**

Union Minister Shri Jitendra Singh inaugurated 50 mtr Puneja Bridge in Doda District and 10 mtr Devika Bridge over river Devika in Udhampur District via video link on June 24, 2020.



12. 6 strategic bridges along the Pakistan border in the J&K UT, dedicated to the Nation by the Raksha Mantri through a video link on 09th July, 2020 .

 <p>Taranai Br</p>	<p>ROAD - TARGOLE-KOSEFAMU- RA.PURA.</p> <p>LOC (KMS) - 26.63</p> <p>SPAN - 95.0 M</p> <p>LD CL - 70</p>	 <p>Ghochiwala Br</p>	<p>ROAD - ANHMOOR-PALANWALA</p> <p>LOC (KMS) - 26.00</p> <p>SPAN - 18.5 M</p> <p>LD CL - 70</p>
 <p>Taranai Br</p>	<p>ROAD - SHIMBUKKA-RIVAN- LICHHI-KOSEFAMU</p> <p>LOC (KMS) - 26.63</p> <p>SPAN - 230 M</p> <p>LD CL - 70</p>	 <p>Panyal Br</p>	<p>ROAD - ANHMOOR-PALANWALA</p> <p>LOC (KMS) - 26.00</p> <p>SPAN - 22.33 M</p> <p>LD CL - 70</p>
 <p>Palwan Br</p>	<p>ROAD - ANHMOOR-PALANWALA</p> <p>LOC (KMS) - 26.00</p> <p>SPAN - 10.00 M</p> <p>LD CL - 70</p>	 <p>Pahediwala Br</p>	<p>ROAD - ANHMOOR-PALANWALA</p> <p>LOC (KMS) - 25.00</p> <p>SPAN - 83.40 M</p> <p>LD CL - 70</p>



13. **Samsheer Singh Bridge**

Member of Parliament, Ladakh Constituency inaugurated 160 feet DDRBB, (**Samsheer Singh Bridge**) at Km 87.095 on Nimmu–Padam–**Darcha Road**.

14. Raksha Mantri dedicated 44 bridges of length 3506 mtrs to the Nation which is spread across 7 states and UTs through a video link on 12th October, 2020.



Indian Coast Guard

In 1977, Union Cabinet approved the setting up of 'Coast Guard' with a fleet strength of two Ships and five Patrol Boats. Indian Coast Guard (ICG) was formally established as an Armed Force of the Union on August, 1978 by the Coast Guard Act, 1978 passed by the Parliament.

Organization

The Coast Guard organization is headed by the **Director General Indian Coast Guard (DGICG)** exercising his overall command and superintendence from Coast Guard Headquarters (CGHQ) located at New Delhi.



Indian Coast Guard Organization

In addition, 42 Coast Guard Stations are functioning under Coast Guard District Headquarters.

Duties and Functions

The duties and functions of Coast Guard mentioned in the Coast Guard Act, 1978 are as follows:

- Safety and protection of the artificial islands, offshore terminals, installation and other structures and devices in any maritime zone.
- Protection of the fisherman including assistance to them at sea while in distress
- Taking necessary measures to preserve and protect the Marine Environment and to prevent and control marine pollution
- Assisting the Customs and other authorities in Anti-Smuggling Operations
- Enforcing the provision of such enactments as are for the time being in force in the Maritime Zones
- Such other matter, including measures for the safety of life and property at sea and collection of scientific data, as may be prescribed

ICG has also been given many additional responsibilities of Coastal Security in Territorial Waters, Enforcement, Monitoring and Surveillance of Deep Sea Fishing, Maritime Search and Rescue, Marine oil-spill response measures. It is also the Lead Intelligence Agency for coastal and sea borders.

Existing Force Level



Extended EEZ Surveillance

ICG ships and aircraft are deployed for undertaking maritime surveillance of littoral states. In 2020, ICG undertook three extended Exclusive Economic Zone (EEZ) deployments in the Maldivian EEZ. Three ICG ships and two aircrafts were deployed in the Maldivian EEZ.

Coastal Security

Coastal Security Exercises: ICG, in coordination with Indian Navy (IN) undertakes patrol and surveillance of the entire coastline. Coastal Security Exercises are conducted for ensuring effectiveness of the coordinated patrolling and validation of Standard Operating Procedure.

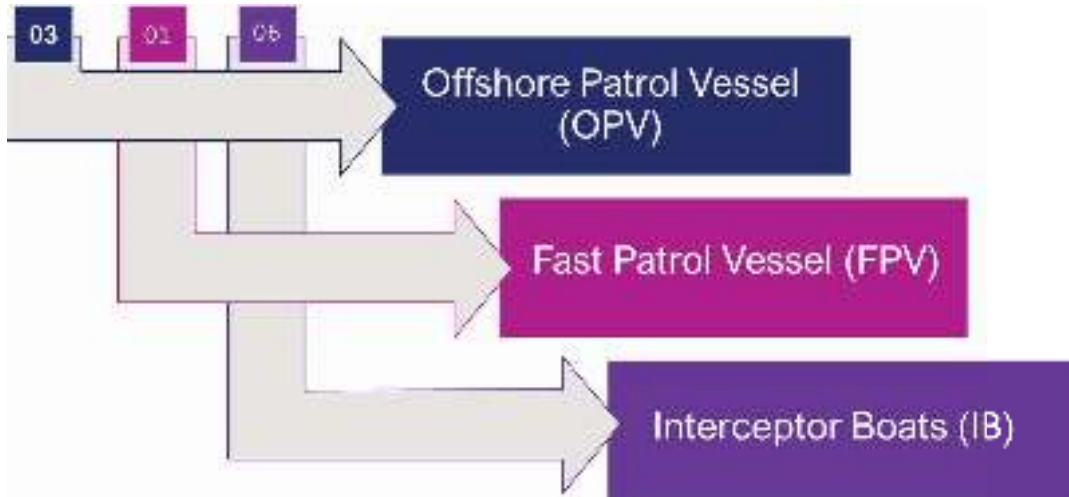
Coastal Security Operations: With the sustained impetus on Coastal Security, Coastal Security Operations are conducted in coordination with all stakeholders.

Community Interaction Programmes: Indian Coast Guard conducts Community Interaction Programmes to sensitize fishermen on safety and security issues and to create awareness about usage of lifesaving equipment like Disaster Alert Transmitters, lifebuoys and life jackets etc.

Boarding Operations: 16,994 boarding operations have been carried out by ICG ships in 2020.

Training of Marine Police Personnel: With a view to enhance professional skills of Marine Police personnel, ICG provides training to police personnel also.

Significant Milestones and Achievements



Surface Platforms inducted in ICG during the period 2020-21

International Cooperation

MoU between Indian Coast Guard and BAKAMLA	MoU with IORA on Search & Rescue
<ul style="list-style-type: none"> A Memorandum of Understanding (MoU) was signed on July 6, 2020 between Indian Coast Guard and Indonesia Coast Guard (BAKAMLA) on Maritime Safety and Security cooperation. 	<ul style="list-style-type: none"> India signed MoU between Governments of the Member States of the Indian Ocean Rim Association (IORA) on September 24, 2020 for the Coordination and Cooperation of Search and Rescue services in the Indian Ocean Region (IOR). Indian Coast Guard has been nominated as the implementing agency as per the provisions of MoU.

High Level Meetings (HLMs)

S. No.	Host	Participant	Remarks
1	Indian Coast Guard, New Delhi	Japan Coast Guard	19 th HLM on bilateral cooperation January 14, 2020
2	Indian Coast Guard, New Delhi	Royal Oman Police Coast Guard (ROPCG)	3 rd HLM to facilitate mutual cooperation on maritime issues February 23-27, 2020

3	Indian Coast Guard, New Delhi	US Coast Guard Pacific Area (PACAREA) Commander	January 28, 2020
4	Via Video Conference	Indian Coast Guard and Vietnam Coast Guard	4 th High Level meeting December 31, 2020

Visit of Japan Coast Guard Ship Echigo: JCG ship Echigo visited Chennai from January 13-16, 2020 to participate in Joint Sea Exercise 'Sahyog-Kaijin XIX' with ICG ships in domain of Maritime SAR, pollution response and law enforcement.

Overseas Deployment of ICG Ships to Foreign Ports

S. No.	ICG Ship	Duration/ Place	Remarks
1	ICGS Vikram	December 7, 2019 to January 16, 2020 (Seychelles, Mauritius, Madagascar, Kenya and Tanzania)	Professional interaction with respective Maritime agencies and Showcasing Indian Shipbuilding capability under Make in India initiative
2	ICGS Samudra Paheredar	January 16, 2020 to February 8, 2020 West Asia (Oman, Qatar, Saudi Arabia and UAE)	Interaction with Maritime Law Enforcement agencies and demonstration of Pollution Response off Oman Coast
3	ICGS Sujay & ICGS Sarojini Naidu	January 5-16, 2020 South Asia	Professional interaction with Bangladesh Coast Guard
4	ICGS Veera and ICGS Abheek	February 8-24, 2020 Sri Lanka and Maldives	Combined exercise with Maritime Law enforcement agencies and demonstration of Pollution Response off Trincomalee and Male

Search & Rescue

During year 2020-21, cyclones Amphan, Nisarga, Nivar and Bureni were experienced. By effective coordination with all the state fisheries authorities, 6402 boats were shepherded safely resulting in nil loss of lives and damage to property at sea.

Beacon Exercise: In the series of Emergency Locator Transmitter (ELT)/ Emergency Position Indicating Radio Beacon (**EPIRB**) Distress Beacon exercises to test the efficiency of beacon detection the 20th and 21st exercise was conducted on June 18-20, 2020 and December 7-9, 2020 respectively. Active participation was witnessed from Defence and Civil agencies wherein total 46 and 50 beacons were tested respectively.

SAR Communication Exercise: With a view to reinforce operational linkages with leading SAR service providers of the world, ICG MRCC (Mumbai), MRCC (Chennai) and MRCC (Port Blair) conducted 20 SAR communication exercises with 22 countries in 2020-21.

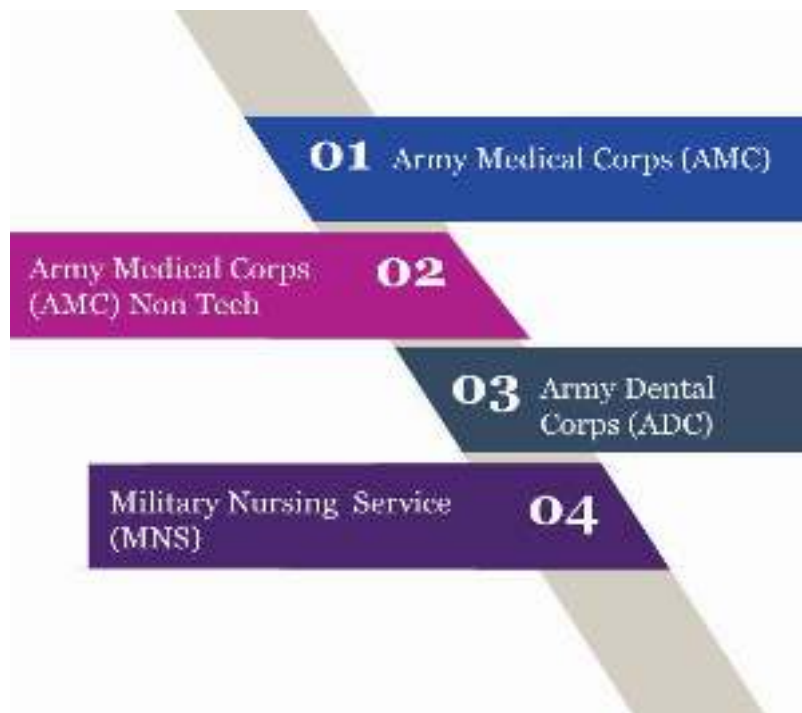
Achievements of Indian Coast Guard during the period January, 2020 to February, 2021:

Achievements	
Search and Rescue (SAR) Missions	144
Search and Rescue (SAR) Sorties	234
Lives Saved at Sea	179
Medical Evacuation at Sea	17
Poaching Trawler apprehension	10 Vessel and 89 Poachers
Repatriation of fishermen	23 Indian fishermen from Sri Lanka, 57 from Pakistan, 14 from Bangladesh and 8 from India to Bangladesh, 1 India to Myanmar, 4 India to Thailand.
Contraband Seized (including Gold)	Rs. 1476.80 crore

Armed Forces Medical Services

AFMS provides dedicated, dependable and comprehensive health care to Defence Personnel and their families. Medical Services are also provided to personnel of para-military organizations, while posted in the field and other Central Police/Intelligence Organizations and General Reserve Engineering Force (GREF) Units, operating in the disturbed and forward areas of country. The medical care is also provided to ex-servicemen and their dependents within the country. During natural calamities, disasters and operational areas, it also serves civilian population .

The AFMS consists of the Medical Services of the Army, Navy and Air Force and the Directorate General Armed Forces Medical Services (DGAFMS). Each Medical Service is under a Director General Medical Service (DGMS) in the rank of Lt General or equivalent. The DGAFMS, who heads the Service, is also medical advisor to the Ministry of Defence and the Chairman of the Medical Services Advisory Committee. There are 132 Armed Forces Hospitals.



Officers of AFMS

Important Activities

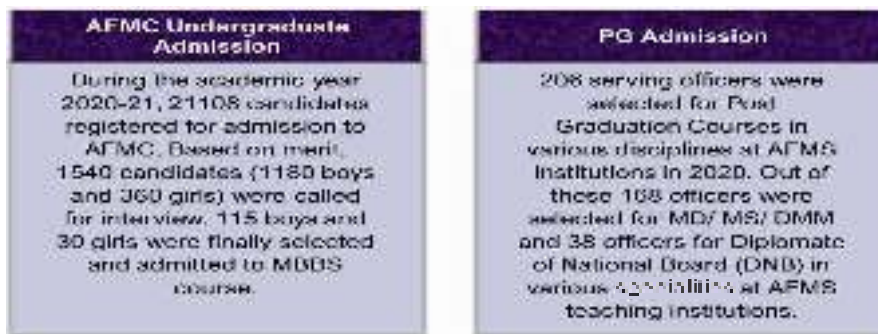
a) COVID 19: AFMS Response

<p>Issuance of Policies , Guidelines & Advisories</p>	<ul style="list-style-type: none"> • DGAFMS has issued several policies, guidelines and advisories, totaling to 47 till date for prevention & control of COVID-19
<p>Quarantine for Civilian Evacuees from COVID affected countries</p>	<ul style="list-style-type: none"> • Quarantine facilities were created at 13 stations :Italy, Iran, China , Malaysia ,Japan & Middle East • 3531 individuals were housed in these facilities. • Out of these, 357, were detected with COVID + and were prevented from mixing with general population.
<p>COVID Hospitals for Civilian Patients</p>	<ul style="list-style-type: none"> • Order issued for 50 AFMS Hospitals dedicated for COVID and mixed COVID hospitals on 31st March 2020. • 1066 civilians have been admitted in AFMS Hospitals till 18th December 2020.
<p>Viral Research Diagnostic Laboratories</p>	<ul style="list-style-type: none"> • AFMS in coordination with ICMR has set up 31 Viral Research & Diagnostic Laboratories at various hospitals in Armed Forces • 3,80,000 tests have been performed at these laboratories till 18th December 2020
<p>Support to Friendly Foreign Countries</p>	<ul style="list-style-type: none"> • AFMS has sent teams to friendly countries like Maldives and Kuwait to aid in capacity building and augmenting COVID testing facilities
<p>AFMS – DRDO COVID Hospitals</p>	<ul style="list-style-type: none"> • AFMS provided complete contingent of doctors, nurses and other paramedical staff at DRDO COVID Hospitals at Delhi, Patna & Muzaffarpur to provide ICU and HDU care to COVID-19 cases. • Hospitals at Delhi & Muzaffarpur are still functional. A total of 3649 civilians have been treated at these hospitals.

b) Commission in AFMS

- (i) **Grant of Short Service Commission (SSC) through open market in the Year 2020** - 117 Medical Officers (MOs) (Male - 103 and Female - 14) have been granted SSC.
- (ii) **Grant of Short Service Commission / Permanent Commission to Cadets of AFMC Pune** - A total of 103 cadets (Permanent Commission 52 and Short Service Commission - 51) from AFMC, Pune have been granted PC/SSC in AFMS during the year 2020 (Male - 83 & Female -20).
- (iii) **Grant of Short Service Commission through Civil PG entry in the Year 2020** - 16 MOs (Male 12 and Female 04) have been granted SSC during the year 2020.
- (iv) **Grant of Departmental Permanent Commission to Short Service Commissioned Officers** - 123 serving Short Service Commissioned officers (Male - 84 and Female - 39) have been granted Departmental Permanent Commission during the year 2020.
- (v) **Grant of SSC in AMC (NT) to JCOs/OR-** 02 OR have been granted Short Service Commission in AMC (NT) during the year 2020.

- (vi) **Grant of Departmental Permanent Commission (MNS) to Short Service Commissioned Officers.** 102 serving Short Service Commission officers (MNS) have been granted Departmental Permanent Commission during the year 2020.
 - (vii) **Grant of Short Service Commission/ PC (MNS) from School of Nursing and College of Nursing** - A total of 69 cadets have been granted SSC/ PC during the year 2020.
 - (viii) **Grant of Short Service Commission (Dental) in the year 2020** - 27 DO's (Male - 17 and Female - 10) have been granted Short Service Commission in 2020.
 - (ix) **Grant of Departmental Permanent Commission (Dental) to Short Service Commissioned Officers** - 20 serving (Male - 14 and Female - 06) Short Service Commissioned Officers (Dental) have been granted Departmental Permanent Commission during the year 2020.
- c) Armed Forces Medical College, Pune provides training to under graduate, post graduate Medical and Nursing students with assured career prospects in the Defence Service :-



d) **International Cooperation**

- **Support to FFCs:** Our country is supporting FFCs army personnel, providing medical training for various medical courses i.e., Post Graduate, Under Graduate and Para Medical Courses at AFMS Institutions. In the current year: -



- WHO programme on "**Health System Management Programme**" was scheduled to be held at Galilee International Management Institute Israel w.e.f. 09 Mar 2020 to 15 Mar 2020, due to COVID-19 pandemic, the programme was not conducted .
- e) **Medical aid rendered during Op Samudra Setu** : Indian nationals from Maldives, Sri Lanka & Iran were evacuated by Indian Naval ships as per the requirements indicated by GoI/MEA. The evacuation commenced from 08 May 20 with INS Jalashwa and also involved INS Magar & INS Shardul. Medical personnel were part of the Ops to carry out pre-embarkation medicals and also to provide medical assistance enroute.

**Till date, a total of 3107 Indians have been evacuated
(2188 - Maldives, 686 - Sri Lanka & 233 - Iran)**

- f) **Development of Innovative PPE for Healthcare workers involved in COVID duties**
- During the onset of the pandemic, a need was felt to develop a Personal Protective Equipment to protect the healthcare worker from contracting the infection. Existing PPEs were expensive and supply was limited due to import restrictions.
 - Realising the need, an innovative PPE was developed by the Innovation Cell at the Institute of Naval Medicine in collaboration with the Naval Dockyard, Mumbai. This PPE uses a fabric that is splash resistant, protects the user from infectious particles yet providing breathability, thereby permitting the user to be on duty for longer periods of time without fatigue.
 - The PPE is easy to manufacture, using an indigenous, easy-to-source fabric and very basic tailoring skills, thus providing jobs to local tailoring units as well as promoting the 'Make in India' programme. The cost of the PPE is less than Rs 550/- compared to Rs 1800 - Rs 2000 for conventional imported PPE.
 - The National Research and Development Corporation has licensed 06 firms for mass production. A number of Armed Forces, Government and Private hospitals are using the PPE and have expressed tremendous user satisfaction.

**The SVBP Covid Hospital in New Delhi also placed orders for
25,000 PPEs worth Rs 1.1 Crores.**

- g) The 58th Armed Forces Medical Research Committee (AFMRC) meeting was conducted at AFMC, Pune from 06 Feb - 07 Feb 2020 where a total of 154 medical research projects related to various aspects of Armed Forces were approved. A number of major collaborative research projects on COVID-19 and other contemporary health issues also been initiated with prestigious Govt research agencies like ICMR, AIIMS etc.

Other Organizations of Department of Defence

Directorate General Defence Estates (DGDE)

DGDE, New Delhi, has advisory and executive functions in matters relating to management of Defence lands and Civic Administration in 62 Cantonments. It presently functions through six Principal Directorates at Jammu, Chandigarh, Kolkata, Lucknow, Pune and Jaipur. The Principal Directorates in turn supervise a number of field offices, i.e., 38 Defence Estates Offices, 4 Assistant Defence Estates Offices and 62 Cantonment Boards. These field offices are entrusted with the day-to-day management of defence lands and Cantonment Boards across the length and breadth of the country.



The Directorate General has undertaken digitization of land records and survey and demarcation of all defence lands in order to strengthen control and management over defence land. Raksha Bhoomi software has been developed by DGDE to store electronically the information in GLR and MLR in respect of areas under all the Defence Estates Officers and Cantonment Boards.

Demarcation survey of entire Defence land inside and outside Cantonments and detailed polygon survey of Defence land inside Cantonments have already been undertaken. About 98.95% and 100% survey work has been completed inside and outside Cantonments respectively.

DGDE has also been entrusted with the task of conducting land audit. Land Audit for the year 2019-20 has been completed and reports submitted to MoD.



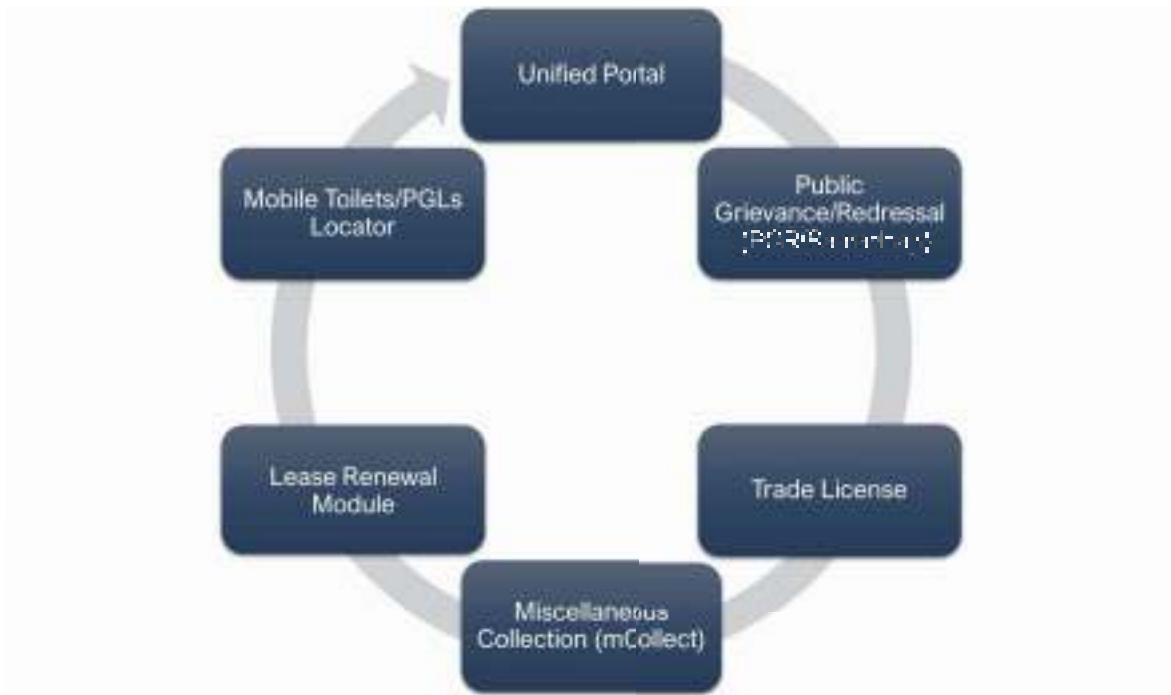
New Initiatives

eChhawani Project has been conceptualized in May 2020 by MoD in association with DGDE, eGovFoundation and BEL to provide online citizen centric municipal services like Public Grievance Redressal, Trade Licenses, Making online payments, Lease Renewal etc. to the 20 lakh citizens residing across the 62 Cantonments through a multi-tenant central platform. Objectives of e- Chhawani project are as follows:



- To provide citizen centric standardized municipal services to people living in Cantonments to achieve the objective of Ease of Living.
- To enable the Cantonment residents to access civic services anytime, anywhere.
- To improve the efficiency and effectiveness of the service delivery system by moving from paper based transactions to paperless services.
- To make **property tax assessment system standardized, simple and transparent for ease of assessment**, and optimization of revenue generation.

Following citizen centric modules were launched in 62 cantonments:



Manohar Parrikar Institute for Defence Studies and Analysis (IDSA)

Various events like, bilateral interactions/ talks, trilateral dialogue, roundtable/ book discussions, training programmes etc., were organized by IDSA during the year.

- 22 Bilateral interactions / talks involving participation by 13 countries.
- 8 Training / Orientation Programme involving OFB – 01, ITBP – 01, BSF – 05, CBIC – 01.
- 26 Seminars / Webinars conducted. A number of them focussed on COVID-19 pandemic, its impact and response options. Other webinars included topics like, ' 30 years later, Indian Peace Keeping Force 1987-90', '21 years of Kargil: Lessons for Contemporary Time'.

Military Engineer Services (MES)

Military Engineer Services (MES) provides engineering support to the three services at Strategic and Operational level. MES functions under the overall control of the Engineer-in-Chief at the Army Headquarters, who is the Advisor to the Ministry of Defence and the three Services Chiefs on all facets of works related issues. It provides rear line engineering support to the Armed Forces. It carries out multifarious construction activities such as residential and office buildings, hospitals, roads and runways, marine structures like docks and harbours and its associated service requirements such as air-conditioning, cold storage, electric and water supply, sewage treatment across the country including border areas.

Implementation of Green Building Norms with additional 10% plinth area rates and minimum three-star rating has been sanctioned. To reduce the national carbon footprint, 150 MW Solar Energy Power projects are being undertaken. To augment the energy conservation efforts, measures such as LED lighting and GRIHA norms are being incorporated in all new projects. MES has also been supporting military diplomatic initiatives by creating infrastructure abroad for friendly foreign Governments/ countries.

Services Sports Control Board (SSCB)

SSCB conducts and co-ordinates various sports activities in the three Defence Services and Inter-Service championships comprising of four teams (Army Red, Army Green, India Navy and Air Force).

National Defence College (NDC)

The National Defence College is India's apex Institution of learning for the study and practice of national security and strategy and is a crucible of strategic leadership. It is dedicated to the intellectual development and strategic enculturation of select senior officers of the armed forces and civil services of India as also of the participants from friendly foreign countries. Established in 1960, NDC has over the years earned a reputation for excellence and gained world renown.

On account of repeated requests from Friendly Foreign Countries for additional vacancies in NDC courses, the course strength is set to be increased from 100 to 110 in the year 2021 and further to be increased to 120 in the year 2022.

To cater for the infrastructure for increased Course members, development work for expansion of capacity of two critical spaces i.e. Kautilaya (lecture hall) and Dining hall has been initiated at

an accelerated pace. Alongside, a few of other arenas that are most frequented by guest speakers and course members, also being renovated to regal standards.

At the NDC, the officers undergo an eleven months course which is based on the mandated six modules.



Mandated six modules

**Diamond Jubilee Course
(60th NDC Course)**

- Commenced on 6th Jan,2020 and concluded on 27th Nov,2020
- 100 participants underwent programme – 58 from Indian Defence Services, 17 from Indian Civil Services and 25 from Foreign Friendly Countries.
- Members had interactions with various foreign delegations & dignitaries of national & international repute, Ambassadors, Ministers, Academicians and Think Tanks

To mark the Diamond Jubilee of the College, 'the President's Chair of excellence on National Security at NDC' was inaugurated by the Hon'ble President of India on 11th Nov,2020

The NDC journal has been revamped and rechristened as Kuutneeti 2020 (NDC Journal) with a very potent academic content. With the extraordinary contribution of the Course members, a new website of NDC has been designed which is more user friendly and helps in reduction of carbon emission, a part of 'Go-Green Initiatives'.

The 60th NDC Course members graduated on 27 Nov 2020, during which the Hon'ble President of India addressed the Course members (online) during valedictory ceremony on 13 Nov 2020 and lauded the role being played by the NDC in preparing strategic leaders to deal with complex security environment of the future in a comprehensive manner. The ensuing 61st NDC commenced on 01 Feb 2021 with 106 Course members which included 58 from Indian Defence Services, 14 from Indian Civil Services, 34 from Friendly Foreign Countries.

School Of Foreign Languages (SFL)

SFL is an eminent foreign language institution under administrative and functional control of HQ IDS, Ministry of Defence. It has been the pioneer in foreign language teaching in India since 1948. The school imparts training in following foreign languages to personnel of the three Services of the Indian Armed Forces and CAPFs:



Foreign languages in which training is accorded

On specific request of Ministry of External Affairs, SFL conducted written and oral tests of foreign language candidates in all UN and Japanese Languages under Atal Bhasanter Yojana (ABY).

College Of Defence Management (CDM)

CDM is a tri-Service institution which imparts the skills of contemporary management to the senior leadership of the three Services, Para Military Forces, officers of the Ministry of Defence and International participants. The education imparted at CDM has a vast international footprint that includes Military Officers (Col & Equivalent) from Asia, Africa, South America and Pacific Islands.

Defence Services Staff College (DSSC)

The Staff College affords an invigorating environment serving as a Cradle for Middle Level Military Leadership, creating excellent staff officers and stellar leaders as the cutting edge of the armed forces with accentuated levels of professionalism and steadfastly upholding the virtues of 'Duty, Honour and Valour'.

Armed Forces Tribunal (AFT)

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

At present Armed Forces Tribunals have been functioning at Delhi (Principal Bench) and at Regional Benches at Chennai, Jaipur, Lucknow, Chandigarh, Kolkata, Kochi, Guwahati, Mumbai, Jabalpur and Srinagar (functioning at Jammu).

Office of the Chief Administrative Officer

The Office of the Chief Administrative Officer (CAO) provides civilian manpower and infrastructural necessities to the Services Headquarters and the Headquarter Offices of Inter-Service Organizations (ISOs) under the Ministry of Defence. The Chief Administrative Officer (CAO) also discharges the functions of Director (Security) and Chief Information Security Officer (CISO).

Directorate Of Public Relations (DPR)

The Directorate publishes a fortnightly journal 'Sainik Samachar' in 13 languages for the serving Armed Forces personnel, ex-servicemen and the general public. Broadcasting Section of the Directorate produces a 40-minute programme 'Sena Darshan' that is broadcast on All India Radio on a regular basis for the Armed Forces personnel. The Photo Division of the DPR provides photo coverage to all the events related to MoD and the Armed Forces. During the year, DPR provided media coverage on various important events conducted by MoD.

DEFENCE COOPERATION WITH FOREIGN COUNTRIES

The Covid-19 pandemic delivered a shock to the international system in 2020-21. Society as a whole and governments across the world were forced to cope with unprecedented disruption. Defence Cooperation with Friendly Foreign Countries (FFCs) was also affected during the period. The Covid pandemic limited our physical interactions and visits and we migrated to the Hybrid mode, which included both online and offline interactions. Physical interaction and meetings, wherever essential were undertaken under Covid protocols.

Mission SAGAR and Operation Samudra Setu was undertaken by the Indian Armed Forces. Mission SAGAR was an initiative to assist countries in the Indian Ocean Littoral during the pandemic. India delivered following cumulative assistance as part of Mission SAGAR:



Operation Samudra Setu was undertaken to repatriate Indian citizens from overseas. The following are major highlights of defence cooperation between India and foreign countries during the year.

Australia

Raksha Mantri Shri Rajnath Singh held a telephone conversation with Australian Minister of Defence Ms Linda Reynolds on **26 May 20**.

The two Defence Ministers had discussions on their respective responses against the COVID-19 pandemic. Shri Rajnath Singh informed Ms Linda Reynolds on India's contribution to international efforts against COVID-19 and discussed areas of mutual cooperation in the global fight against the pandemic. They also agreed that India-Australia Strategic Partnership provides a good basis for both countries to work together alongwith other countries in this regard to deal with the post COVID-19 related challenges. Both ministers also conveyed their commitment to take forward the initiatives of bilateral defence and security cooperation under the framework of the India-Australia Strategic Partnership.

PASSEX between Royal Australian Navy (RAN) and Indian Navy was conducted in East Indian Ocean Region on 22 September 2020.

Bangladesh

The 9th Edition of Indo-Bangladesh Joint Military Exercise "SAMPRITI-IX" commenced at Umroi, Meghalaya on 03 February 2020 for a duration of 14 days. The main focus of this edition was on Counter Terrorism Operations in mountainous and jungle terrain. A delegation comprising of 31 officers and 138 other ranks of Bangladesh Army and a Company Group of Indian Army participated in the joint military exercise.

India-Bangladesh Annual Defence Dialogue (Co-chair Defence Secretary of India) was held on 2nd November, 2020 through Video Conferencing (VC).

A range of bilateral defence cooperation issues viz., training, capacity building, Subject Matter Experts Exchange (SMEE), high/ functional level visits, Defence Industry related issues were discussed during the meeting.

China

India and China held a series of discussions in July 2020 through established military and diplomatic channels to address the prevailing situation along the LAC. The Senior Commanders reviewed the progress on implementation of the first phase of disengagement and discussed further steps to ensure complete disengagement. The two sides remain committed to the objective of complete disengagement.



Hon'ble Raksha Mantri Shri Rajnath Singh met General Wei Fenghe, State Councilor and Defence Minister of China on 04 September 2020 in Moscow on the sidelines of the Shanghai Cooperation Organization meeting.

The two Ministers had frank and in- depth discussions about the developments in the India – China border areas as well as on India – China relations

Comoros

Comoros and India have always enjoyed close and friendly relations and have similarities of view on regional and global issues. As part of Mission Sagar, Indian Naval Ship (INS) Kesari entered Port of Moroni in Comoros on 31 May 2020 carrying a consignment of COVID related essential medicines for the people of Comoros. In addition, a 14-member specialist medical team comprising Indian Navy doctors and paramedics also embarked onboard the ship to work alongside their counterparts in Comoros to work together in fight against Covid-19 and dengue fever.

Czech Republic



Mr. Tomas Petricek, Minister of Foreign Affairs, Czech Republic visited India and called on the Hon'ble Raksha Mantri on 15th January, 2020. The two Ministers discussed various issues on Defence Cooperation.

Finland

Defence Secretary Dr. Ajay Kumar and Permanent Secretary, Ministry of Defence of Finland Mr Jukka Juusti signed a Memorandum of Understanding (MoU) to further defence cooperation in the field of Production, Procurement, Research and Development of Defence related Equipment and Industrial cooperation between the two countries on 15th January, 2020.

France

Hon'ble Raksha Mantri Shri Rajnath Singh held a telephonic conversation with French Minister of Armed Forces, Ms. Florence Parly on 02 June 2020.

They discussed matters of mutual concern including COVID-19 situation, regional security and agreed to strengthen the Bilateral Defence Cooperation between India and France. Both Ministers appreciated the efforts made by Armed Forces of India and France in fighting the COVID-19 pandemic. France reaffirmed its commitment to ensure timely delivery of Rafale Aircraft despite the challenges posed by the COVID-19 pandemic. Raksha Mantri welcomed the French Chairmanship of Indian Ocean Naval Symposium (IONS) from 2020 to 2022.

A French delegation led by the French Minister of Armed Forces, Ms. Florence Parly visited India to attend the Rafale Induction Ceremony held on 10th September, 2020 at Ambala. On the sidelines of the Induction Ceremony, a bilateral meeting was organized between the visiting French Minister and Hon'ble RM wherein a whole range of India-France defence cooperation issues were discussed.

Indonesia

The Defence Ministers' Dialogue between India and Indonesia was held in New Delhi on 27th July 2020. The Indian delegation was headed by Raksha Mantri, Shri Rajnath Singh while the Indonesian delegation was led by Indonesian Defence Minister, General Prabowo Subianto.

India-Indonesia Naval Coordinated Patrol (CORPAT) was held along their International Maritime Boundary Line (IMBL) on 17-18th December, 2020 in “at sea only” format. The CORPAT helps in building up understanding and interoperability between the two Navies in their joint effort to prevent piracy, maritime terrorism, contraband drug trafficking and illegal fishing in the region.

Iran

An infographic featuring a dark green triangle on the left and a white rounded rectangle on the right containing text. The text describes a bilateral meeting between the Indian and Iranian Ministers of Defence.

Raksha Mantri, Shri Rajnath Singh held a bilateral meeting on **5th September 2020** with Iran's Minister of Defence and Armed Forces Logistics, Brigadier General Amir Hatami.

Raksha Mantri was on a transit halt in Tehran enroute from Moscow to New Delhi. The meeting between the two Ministers took place in a cordial and warm atmosphere. Both the leaders emphasized upon the age-old cultural, linguistic and civilizational ties between India and Iran. They discussed ways to take forward bilateral cooperation and exchanged views on regional security issues, including peace and stability in Afghanistan.

Israel

An infographic featuring a pink ribbon-like shape on the left and a white rounded rectangle on the right containing text. The text describes a telephonic conversation between the Indian and Israeli Defence Ministers.

Raksha Mantri Shri Rajnath Singh had a telephonic conversation with Defence Minister of Israel Lt Gen Benjamin Gantz on **24th July 2020**.

Both the Ministers expressed satisfaction at the progress of strategic cooperation between the two countries and discussed possibilities of further strengthening the defence engagements. They also expressed satisfaction at the ongoing collaboration in research and development in fighting pandemic COVID-19 which will not only benefit the two countries but also aid the larger humanitarian cause. Raksha Mantri invited greater participation of Israeli defence companies under new liberalised foreign direct investment (FDI) regime in defence manufacturing.


Japan

An Agreement concerning Reciprocal Provision of Supplies and Services between the Indian Armed Forces and the Self-Defence Forces of Japan was concluded on the occasion of India-Japan Prime Ministers Summit held virtually on 10th September 2020.



Raksha Mantri Shri Rajnath Singh held a telephone conversation with Minister of Defence, Japan Mr Taro Kono on **08th May 2020**.

The two Defence Ministers had discussions on their respective responses against the COVID-19 pandemic. Shri Rajnath Singh informed Mr Taro Kono on India's contribution to international efforts against COVID-19. Both ministers also conveyed their commitment to take forward the initiatives of bilateral security cooperation under the framework of the India-Japan Special Strategic and Global Partnership.



Hon'ble RM held telephonic talks with the **Defence Minister of Japan** on **22nd December 2020**. During this discussion, both sides exchanged views on regional security situation and the bilateral defence cooperation during the ongoing health crisis.

Madagascar

Indian Naval Ship (INS) Airavat whilst on a deployment in the Southern Indian Ocean, was diverted on 26th January 2020 to render assistance to the citizens of Madagascar who were affected by the

devastation caused by Cyclone Diane. INS Airavat undertook Humanitarian Assistance and Disaster Relief (HADR) as part of 'Operation Vanilla' launched by the Indian Navy, which was the first international respondent to this evolving humanitarian crisis in Madagascar.



During the discussions, Raksha Mantri stressed upon enhancing ties in Maritime security cooperation in the region. Underlining the President of India's state visit to Madagascar in March 2018, Shri Rajnath Singh said that the historic visit reaffirmed the excellent bilateral relationship between the two countries. He emphasized that the MoU signed during the visit provided an enabling framework for defence cooperation between the two countries.

Maldives

INS Jalashwa, as part of "Operation Samudra Setu" was deployed to Maldives for evacuation of Indian nationals on 08 May 2020. A total of 698 Indian nationals, which included women, elderly people and children were evacuated safely to Kochi, India.

Mauritius

As part of Mission Sagar, INS Kesari entered Port Louis Mauritius on 23rd May 2020 to provide assistance in dealing with the COVID-19 Pandemic. The ship carried COVID related essential medicines and a special consignment of Ayurvedic medicines for the people of Mauritius. In addition, a 14-member Specialist Medical Team comprising Indian Navy doctors and paramedics also embarked the ship, to work alongside their Mauritian counterparts to render assistance for COVID-19 related emergencies.

Myanmar

A delegation led by Chief of Naval Staff visited Myanmar from 17 to 20 February, 2020. A whole range of issues pertaining to bilateral defence cooperation between Indian Navy and Myanmar Navy were discussed during the visit. During his visit, the CNS held bilateral discussions with Admiral Tin Aung San, C-in-C Myanmar Navy and also called on H.E. Senior General Min Aung Hlaing, C-in-C Defence Services, and other senior Government officials. CNS interacted with the trainees of National Defence College in Nay Pyi Taw, and also visited the Naval Dockyard and Training Command of the Myanmar Navy in Yangon.

A Table Top Exercise between the Indian Air Force (IAF) and the Myanmar Air Force (MAF) was conducted at Prayagraj on 18th March 2000 under the theme of HADR. The objectives of the exercise included planning of HADR operation in a given scenario, learn best practices, executing mission during HADR disasters, understand Search and Rescue Mission procedures etc. The exercise was conducted under the aegis of Headquarters Central Air Command, IAF. 20 members of IAF participated in the exercise.

Nepal

Chief of Army Staff (CoAS) visited Nepal from 04-06 November, 2020 on invitation of the Nepal Army Chief. During the visit, CoAS was conferred with the Honorary rank of the General of Nepal Army by the President of Nepal.

Qatar



During the meeting, the two Ministers reiterated their commitment to strengthen the bilateral defence cooperation, including defence industry relationship. The Qatari delegation also visited the DefExpo 2020 at Lucknow from February 5-9, 2020.

Republic of Korea (RoK)

Raksha Mantri Shri Rajnath Singh on **10 July 2020** spoke over telephone with Minister of National Defence of Republic of Korea (RoK) Mr Jeong Kyeong-Doo.

The two Defence Ministers had discussions on issues pertaining to the COVID-19 pandemic situation. Shri Rajnath Singh informed Mr Jeong Kyeong-Doo on India's contribution to international efforts against COVID-19 and discussed areas of mutual cooperation in the global fight against the pandemic. The Ministers agreed to work together to deal with the complex challenges posed by this pandemic.

Chief of the Army Staff visited RoK on a 'goodwill visit' on 28th December 2020. During his meetings with the counterpart and other dignitaries of the two countries, CoAS exchanged views on various defence cooperation related issues with a view to enhance further cooperation.

Russia

The 5th round of India-Russia Military Industrial Conference (IRMIC) was conducted on **6th February 2020** on the sidelines of Defexpo-2020 at Lucknow. The conference was co-chaired by **Dr. Ajay Kumar, Defence Secretary** from the Indian Side and Mr. Oleg Ryzantsev, Deputy Minister of Industry and Trade of Russian Federation.

The IGA provides framework for partnership of Russian OEMs with Indian industry for manufacturing of spare parts of Russian origin equipment in use by the Indian Defence Forces. During the conference, a total of 14 MoUs were exchanged between the Russian OEMs and the Indian companies.



Mr Borisov is the co-chair of the Inter-Governmental Commission with India on Trade & Economic & Scientific Cooperation. He also co-chairs with Raksha Mantri the High Level Committee on Science & Technology. India and Russia enjoy Special and Privileged Strategic Partnership and defence relationship is one of its important pillars.

Hon'ble Raksha Mantri led delegation visited Russia from **03-05 September, 2020** to attend the combined meeting of Shanghai Cooperation Organization (SCO)- Collective Security Treaty Organisation (CSTO) - Commonwealth of Independent States(CIS) Defence Ministers to commemorate 75th anniversary of victory in the Second World War.

Hon'ble RM separately met on **5th September, 2020** with the Defence Ministers of Tajikistan, Uzbekistan and Kazakhstan to discuss bilateral cooperation issues on the sidelines of SCO.

Singapore

The 14th India-Singapore Defence Policy Dialogue (DPD) was held via video conferencing on 28th August 2020 which was co-chaired by **Defence Secretary Dr. Ajay Kumar and Permanent Secretary (Defence), Singapore Mr Chan Heng Kee.**



Both sides held discussions on a number of issues of bilateral defence engagements and committed to further enhance the security partnership between the two countries. At the end of the DPD, an Implementing Arrangement on Humanitarian Assistance & Disaster Relief (HADR) between India and Singapore was also signed.

Seychelles

As part of Mission Sagar, INS Kesari entered Port Victoria, Seychelles, on 07th June 2020 carrying a consignment of COVID related essential medicines for the people of Seychelles.

Sri Lanka

INS Jalashwa was deployed to Colombo, Sri Lanka as part of Operation Samudra Setu on 01st June 2020. 685 Indian nationals were evacuated to India.

Thailand

Indo-Thai Coordinated Patrol (CORPAT) between India and Thailand took place on 20th November 2020.

UAE

Chief of Army Staff (CoAS) made a historic first-ever visit to UAE from 9-10th December 2020. During his meetings with the counterparts and other dignitaries, CoAS exchanged views on various defence cooperation related issues with a view to enhance further cooperation.

Ukraine

Ukrainian Deputy Prime Minister and Minister for Strategic Industries called on **Hon'ble RM** on **21st December 2020**. Issues of mutual collaboration and investment in India were discussed during the meeting.



The two Defence Ministers reviewed the progress in bilateral and multilateral defence co-operation and agreed to expand military-to-military engagements and defence trade & industry as part of India-US comprehensive global strategic partnership. The two Ministers exchanged views on the grave situation arising out of COVID-19 and expressed confidence that through open communication and mutual support, the world can overcome the pandemic. He invited Secretary Esper to visit India at the earliest convenient date.



The two Ministers briefed each other on the respective experience of fighting the COVID-19 pandemic and vowed to continue the excellent bilateral cooperation in this regard.

Hon'ble Raksha Mantri had a telephonic conversation with the US Secretary of Defence on **10th July, 2020 and 24th July 2020** to discuss the defence cooperation issues

A bilateral meeting between US Secretary of Defence (Dr Mark T. Esper) and **Hon'ble RM** was organized on **26th October 2020** at South Block, New Delhi. Indo-US bilateral Defence Cooperation was reviewed during the meeting.

India-US 2+2 Dialogue between **Hon'ble RM** accompanied by **AM** and US Secretary of Defence (Dr. Mark T Esper) accompanied by US Secretary of State (Mr Mike Pompeo) was held on **27th October 2020** at Hyderabad House, New Delhi.

The whole range of Indo-US bilateral cooperation issues were discussed during Dialogue. During the visit of US Delegation for the 2+2 Dialogue, Basic Exchange and Cooperation Agreement (BECA) was signed on 26th October 2020.

A telephonic conversation between **Hon'ble RM** and acting US Secretary of Defence Mr. Christopher C. Miller was held on **15th December, 2020**.

Indo-US defence relationship, Defence Industrial Partnership and other issues of mutual interest were discussed during this telecon.

Saudi Arabia

Chief of Army Staff (CoAS) went on a "Goodwill Visit" to Saudi Arabia from 13-14th December, 2020. During his meetings with the counterpart and other dignitaries, CoAS exchanged views on various defence cooperation related issues with a view to enhance further cooperation.

Vietnam

Defence Secretary had a telephonic conversation with Senior Lt Gen Nguyen Chi Vinh, Vietnam on **6th July, 2020** to discuss the COVID-19 pandemic and defence cooperation issues.




A Virtual Conference of RM with the Defence Minister of Vietnam was held on **28th November, 2020**.

India-Vietnam bilateral defence cooperation issues as well as regional and international issues of mutual interest was discussed during the meeting.

Indian and Vietnamese Navy conducted a PASSEX in the South China Sea from 26-27th December, 2020 as part of efforts to boost maritime cooperation between the two countries. INS Kiltan participated in this exercise during its visit to Vietnam carrying relief material for flood-affected people of Vietnam.

ASEAN Defence Ministers Meet (ADMM Plus)



Hon'ble RM–led Indian delegation attended the **14th ASEAN Defence Ministers' Meeting Plus (ADMM Plus)** in virtual format on **10th December, 2020** in Hanoi, Vietnam.

During this meeting, the participants expressed views on regional and global security situation. The occasion also marked the 10th Anniversary of ADMM Plus format and Hon'ble RM was invited to speak on the 'Regional and International Security Situation' on behalf of the Plus countries. A Joint Declaration was also adopted during the meeting as ADMM Plus expressed commitments to its advancement entering the second decade.

Shanghai Cooperation Organization (SCO)



Hon'ble Raksha Mantri led delegation visited Russia from **03-05 September, 2020** to attend the combined meeting of Shanghai Cooperation Organization (SCO)- Collective Security Treaty Organisation (CSTO) - Commonwealth of Independent States(CIS) Defence Ministers to commemorate 75th anniversary of victory in the Second World War.

During his address in the meeting, Raksha Mantri stressed that peace and Security in the SCO region demands a climate of trust and cooperation, non-aggression, respect for international rules and norms.

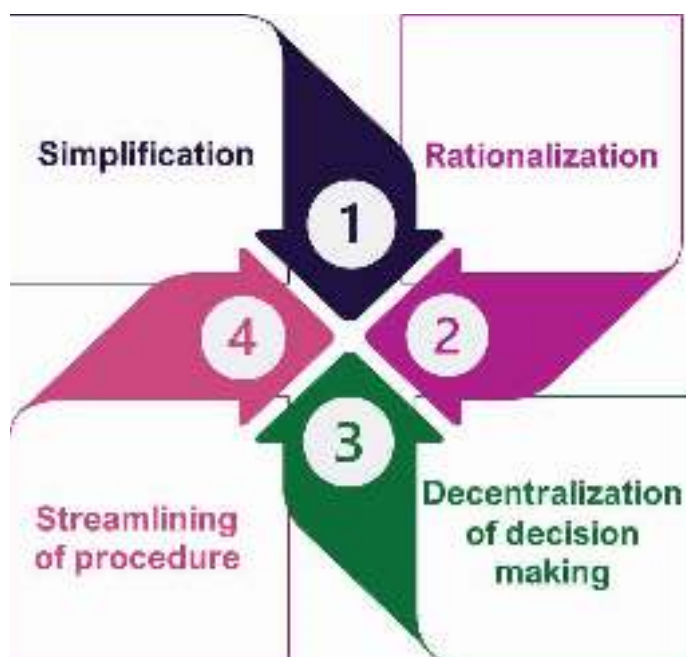
India – Africa Defence Ministers Conclave



The **Defence Ministers** and Heads of Delegation from African countries and the Defence Minister of the Republic of India held the first ever India Africa Defence Ministers' Conclave during the 11th edition of the biennial defence exhibition DEFEXPO INDIA 2020 at Lucknow, India on **6th February 2020**. The Ministers adopted the Lucknow Declaration during the Conclave.

Initiatives Towards Simplification, Decentralization and Enhancing the Ease of Doing Business

Equipping the Armed Forces with state-of-the-art weapon systems and equipment and promoting self-reliance in defence sector by giving a boost to domestic manufacturing are two sides of the same coin. Several path-breaking initiatives were taken by the Ministry during the period towards simplification, rationalisation and decentralisation of decision making and streamlining of procedure, which resulted in enhancement of the ease of doing business and replacement of 'red tape' by the 'red carpet'. This Chapter provides an overview of such measures.

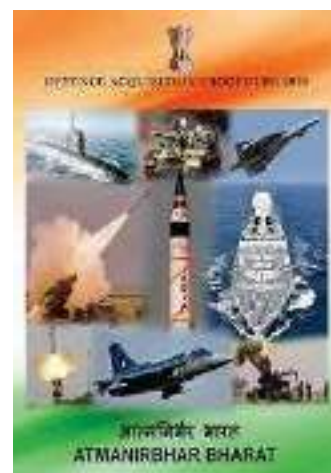


Enhancing Ease of Doing Business

Streamlining of Defence Procurement Procedure (DPP)

DPP 2016 has been revised as Defence Acquisition Procedure (DAP) 2020, which is driven by the tenets of Defence Reforms announced as part of 'Aatmanirbhar Bharat Abhiyan'. DAP 2020 has been finalized with the approval of Hon'ble RM in the meeting of DAC(05/2020) and the same has been put on Ministry of Defence website [mod.nic.in] on 30.09.2020.

The Defence Acquisition Procedure 2020 has come into effect from 01.10.2020. The revised procedure focuses on promotion of indigenization, streamlining of processes and shortening of timelines, has been driven by the tenets of Defence reforms announced as part of the "Aatmanirbhar Bharat" call given by the Hon'ble PM.



The DAP 2020 has introduced major policy initiatives with focus on boost to indigenous defence capability and reduction of reliance on imports under “Make in India” initiative.

Some of the initiatives are as given in subsequent paragraphs.

(a) To achieve self-reliance in Defence productions following measures have been introduced:

Notification of a list of weapons/platforms for ban on import

This would encourage production of these weapons/platforms in India.

Indigenisation of imported spares

Explore willingness of Foreign vendors to progressively undertake manufacture of amongst other things, spares in India.

New Category of Buy (Global- Manufacture in India)

The new category enables ab-initio indigenisation of spares.

Co-production through Inter Government Agreement

The newly added provision enables establishing co-production facilities through IGA and also explores import substitution.

Make Category

Make II & Make III (newly introduced in DAP 2020) categories further the objective of self-reliance by involving greater participation of Indian industrial eco-system including private sector.

FDI in Defence Manufacturing

Introduction of New category Buy (Global - Manufacture in India) encourages Foreign OEMs to set up 'Manufacturing/maintenance entities' through its subsidiary in India. The definition of Indian Vendor has also been aligned to the new FDI policy.

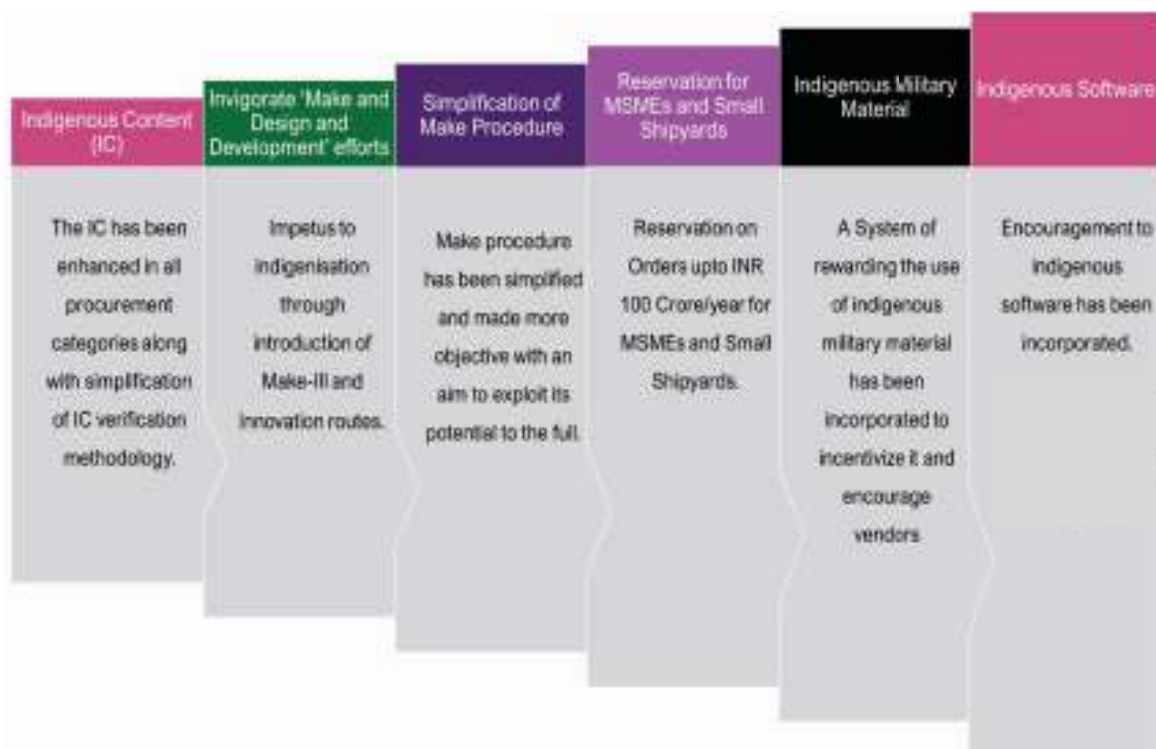
Offset Guidelines

The revised Offset Guidelines are focused towards development of Defence ecosystem while giving incentives to ToT and Defence Manufacturing, at the same time encouraging MSMEs & Defence Industrial Corridors.

(b) Time Bound Defence Procurement Process and Faster Decision Making: One of the key focus areas of review was to implement “Ease of Doing Business” with emphasis on Simplification, Delegation, Reduced timelines and making the process as industry friendly as possible. Specific provisions to address the same are as under:-



(c) Make in India: With focus towards enabling 'Make in India' the DAP 2020 incorporates the following measures:-



In order to promote indigenous design and development of defence equipment 'Buy {Indian-IDDM (Indigenously Designed, Developed and Manufactured)}' category was introduced in 2016 and was accorded topmost priority for procurement of capital equipment.

Ministry of Defence has notified a 'Negative list' of 101 items for which there would be an interim embargo on the import beyond the timeline indicated against them.

This is a big step towards self-reliance in defence. This would offer a great opportunity to the Indian defence industry to manufacture these items using their own design and development capabilities to meet the requirements of the Armed Forces in the coming years. This list includes some high technology weapon systems like artillery guns, assault rifles, corvettes, sonar systems, transport aircrafts, light combat helicopters (LCHs), radars and many other items to fulfil the needs of our Defence Services.

Defence Export

Standard Operating Procedure (SOP) for the export of munitions list items have been modified and placed on the website of the Department of Defence Production (DDP). The modifications in order to promote Ease of Doing Business are as below:

- a) In repeat orders of same product to the same entity, consultation process has been done away with and permission is issued immediately.
- b) For repeat orders of same product to different entity, consultation which used to be done earlier with all stakeholders is now limited only with MEA.
- c) In Intra-Company business (which is especially relevant for outsourcing of work by defence related parent company abroad to its subsidiary in India), the earlier requirement of getting End User Certificate (EUC) from the Government of importing country has been done away with and 'Buying' Company is authorized to issue the EUC.
- d) The legitimate export of the parts and components of small arms and body armour for civil use are now being permitted after prior consultation with MEA.
- e) For export of items for exhibition purposes, the requirement of consultation with stakeholders has been done way with (except for select countries).
- f) Export for the purpose of testing and evaluation and for the purpose of participation in tender EA is issued on case to case basis without insisting upon EUC from Government subject to the fulfilment of certain conditions.
- g) Powers have been delegated to DRDO, DGOF, and CMD's of DPSUs for exploring export opportunities and participation in global tenders.
- h) New End User Certificate Format for Parts & Components has been provided in SOP.
- i) For applications under Part B, EA is issued without waiting for the receipt of the original EUC, subject to the condition that it is received in the Department within 30 days of the date of filing the application.
- j) Validity of Export Authorization has been increased from 02 years to the date of completion of order/component whichever is later.
- k) A new provision for importing and re-exporting parts and components for undertaking repair or rework to provide replacement for a component under warranty obligation is inserted in

the SOP as a sub-classification of repeat orders. Export Authorisation in such cases shall be subject to submission of an undertaking as in Appendix V of the SOP.

l) The existing online application system of export authorisation has been made more user-friendly. A new software has been launched for improving the existing system being used by the industry to file the applications for issue of Export Authorisation. The following upgradation has been done to existing online system:-



(m) To ensure that DDP remains a single point of contact for exporter for export of parts and components of Small Arms & Ammunitions and to remove any confusion from the minds of the industry, MHA was requested to delegate its powers under the Arms Rules 2016 to this Department for issue of licence under these rules. MHA vide Notification dated 1.11.2018 has delegated its powers to this Department to issue export license under Arms Rules 2016 in Form X-A, for parts & components of small arms.

(n) The Department of Defence Production has brought in 2 OGEL's (Open General Export License) one for the select parts and components and the other for intra-company transfer of technology. OGEL is a one-time export license, which permits the industry to export specified items to specified destinations, enumerated in the OGEL, without seeking export authorisation during the validity of the OGEL. These notifications have been placed on <https://www.defenceexim.gov.in>

(o) To further promote Ease of doing Business and enhance the Defence Exports and also to achieve the objective set in Draft Defence Production Policy 2018 of annual Defence Exports to the tune of Rs.35,000 crores by the year 2025, the Department of Defence Production notified a Scheme for Promotion of Defence Exports. The scheme provides an opportunity to the prospective exporters an option to get their product certified by the Govt. and access to the testing infrastructure of MOD for initial validation of the product and its subsequent field trials. The certificate can be produced by the prospective exporter for marketing their products suitably in the global market.

Defence Investor Cell

Defence Investor Cell (DIC) was established by DDP in January 2018 to provide help, support and guidance to the defence industry, particularly MSMEs. Acting as a friend to defence entrepreneurs, it facilitates the entrepreneurs to venture into defence production. DIC can be reached online at <https://defenceinvestorcell.gov.in/> without any physical interface.



To further disseminate the role offered by DIC, it regularly participates in various industry events like Def Expo, Aero India, and those organised by FICCI, CII, MCCIA from time to time.

“DIC has facilitated 6 companies/ innovators in testing of their defence products at various Government facilities / test ranges.”

DIC has also helped in realisation of payment of more than Rs 24 Crore, mostly of MSMEs from DPSUs/OFB/SHQs. DIC also assisted in submission and evaluation of suo-moto proposals by SHQs under Make –II procedure. 8 such proposals have been positively responded by SHQs and are making further progress.

As on 31 Dec 2020, 1026 queries/cases have been received and handled by DIC since its inception. DIC has received appreciation and word of thanks from industry members. The average time taken for response was less than 2 days while the average time for closure was less than 7 days. The number of requests received in DIC in each quarter of 2019-20 is as below:

January-March 2020	April-June 2020	July–September 2020	October - December 2020
87	82	90	64

Pursuant to 'Atmanirbhar Bharat' announcement, DDP has developed a portal named, srijandefence.gov.in, as "**Opportunities for Make in India in Defence**". It was launched on 14.08.2020 by Hon'ble Raksha Mantri.



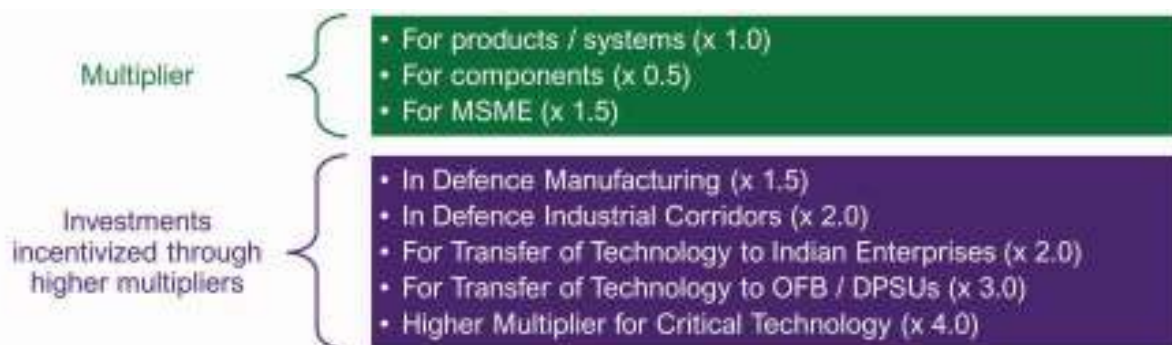
The main objective of the portal is to partner the private sector in indigenization efforts of Defence Public Sector Undertakings (DPSUs), OFB and the Armed Forces. The portal will be a non-transactional online market place platform.

DPSUs/OFB/SHQs will display their items on this portal, which they have imported or going to import, each item having sizeable import value. They will also display those items which have been planned/ targeted in the coming years, for indigenization. The Indian industry will be able to show their interest in those items for which they can design, develop and manufacture as per their capability or through joint venture with OEMs. The concerned DPSUs/OFB/SHQs, based on their requirement of the items and their respective guidelines & procedures, will interact with the interested Indian industry for indigenization. The interested Indian industry can also interact with concerned DPSUs/OFB/SHQs for their queries related to indigenization through the contact details given under each item.

As on 22.02.2021, there are more than 7500 items uploaded by DPSUs/OFB/SHQs on the portal. Indian Industry (100 vendors) have shown interest in more than 1700 items.

Under Atmanirbhar Bharat, DDP has been given target of 5000 Nos of items for indigenization by DPSUs/OFB/Services, for the years 2020-2025. As on Nov 2020, 854 items have been either indigenized or Supply orders have been placed.

"**Offset portal**" has been formulated in May 2019 to ensure Greater transparency, efficiency and accountability in the process. Reforms in Offset policy have been included in DAP 2020, with thrust on attracting investment and Technology for Defence manufacturing. Higher preference has given for purchase of defence products as compared to components, as under:



Government has notified the ‘**Strategic Partnership (SP)**’ Model in May 2017, which envisages establishment of long-term strategic partnerships with Indian entities through a transparent and competitive process, wherein they would tie up with global Original Equipment Manufacturers (OEMs) to seek technology transfers to set up domestic manufacturing infrastructure and supply chains.

Government has notified a ‘**Policy for indigenisation of components and spares used in Defence Platforms**’ in March 2019 with the objective to create an industry ecosystem which is able to indigenize the imported components (including alloys & special materials) and sub-assemblies for defence equipment and platform manufactured in India.

An Inter-Governmental Agreement (IGA) on “**Mutual Cooperation in Joint Manufacturing of Spares, Components, Aggregates and other material related to Russian/Soviet Origin Arms and Defence Equipment**” was signed in Sep 2019. The objective of the IGA is to enhance the After Sales Support and operational availability of Russian origin equipment currently in service in Indian Armed Forces by organizing production of spares and components in the territory of India by Indian Industry by way of creation of Joint Ventures/Partnership with Russian Original Equipment Manufacturers (OEMs) under the framework of the “Make in India” initiative.

DDP has notified 46 items under the latest Public Procurement Order 2017 notified by Department for Promotion of Industry and Internal Trade (DPIIT), for which there is sufficient local capacity and competition and procurement of these items shall be done from local suppliers only irrespective of the purchase value.

As a result of all the above efforts, during the last three financial years i.e., from 2017-18 to 2019-20 Government has accorded Acceptance of Necessity (AoN) to 123 Defence proposals, worth INR 169,750 Crores approximately, under the various categories of Capital Acquisition, which promotes domestic manufacturing as per the DAP.

रक्षा मंत्रालय
MINISTRY OF
DEFENCE



रक्षा उत्पादन विभाग
DEPARTMENT OF
DEFENCE PRODUCTION



India: The Emerging Defence Manufacturing Hub
DEFEXPO 2021
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Ministry of Defence

रक्षा मंत्रालय
MINISTRY OF
DEFENCE



रक्षा उत्पादन विभाग
DEPARTMENT OF
DEFENCE PRODUCTION
GOVERNMENT OF INDIA

INAUGURAL CEREMONY
3RD FEBRUARY, 2021



Department of Defence Production



रक्षा मंत्रालय
MINISTRY OF
DEFENCE

Department Of Defence Production

The Department of Defence Production (DDP) was set up in November 1962 with the objective of developing a comprehensive production infrastructure to produce the weapons/systems/platforms/equipment required for defence. Over the years, the Department has established wide ranging production facilities for various defence equipment through the Ordnance Factories, Defence Public Sector Undertakings (DPSUs) and also facilitated private defence industry.

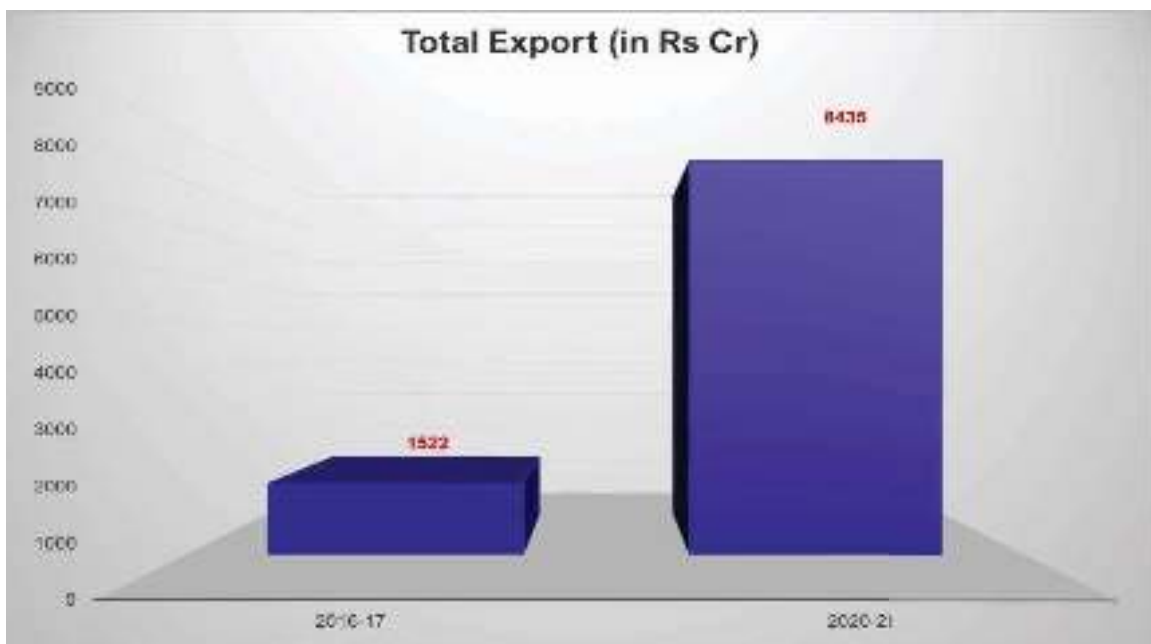


Products manufactured by DPSU's

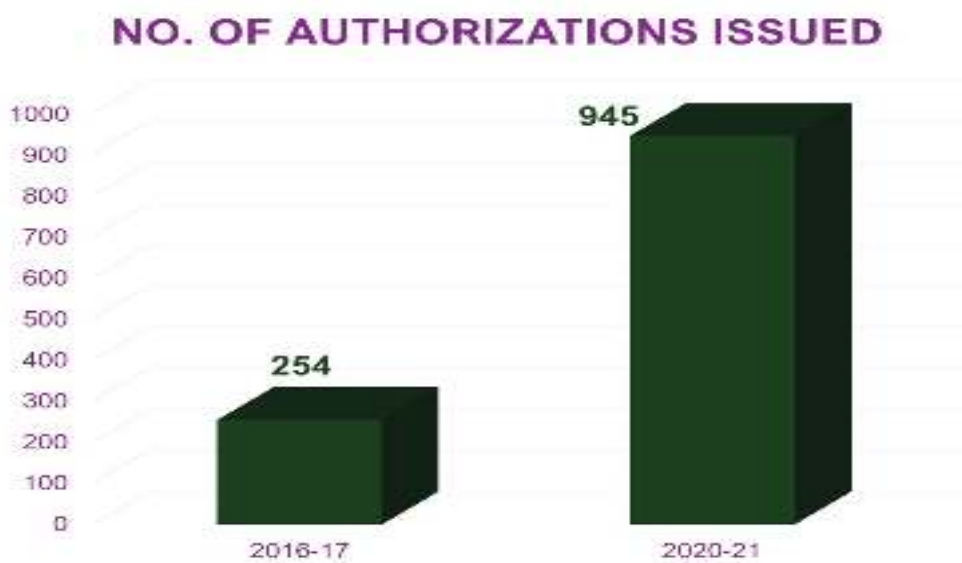
As a result of the efforts taken to develop defence production ecosystem, the country has achieved capability in wide range of defence and aerospace. As far as land systems are concerned, these include Artillery guns, tanks, various types of heavy vehicles, mine protected vehicles, various kinds of small arms, armoured material including bullet proof jackets and helmets, wide range of ammunitions, propellants and explosives, etc. As regards aero-systems, fourth generation fighter aircrafts, helicopters of 3-5.5 tonne class, trainer aircrafts, missiles of several types, and as regards naval systems, capability to manufacture practically all type of naval vessels including Offshore patrol vessels, corvettes, frigates, destroyers, aircraft carriers, submarines etc. have been created in the country.

Export Import Profile of Indian Defence Industry

With series of reforms and focused attention on promotions of exports of Indian Defence Products have provided big boost to defence export since 2016-17, as depicted below:

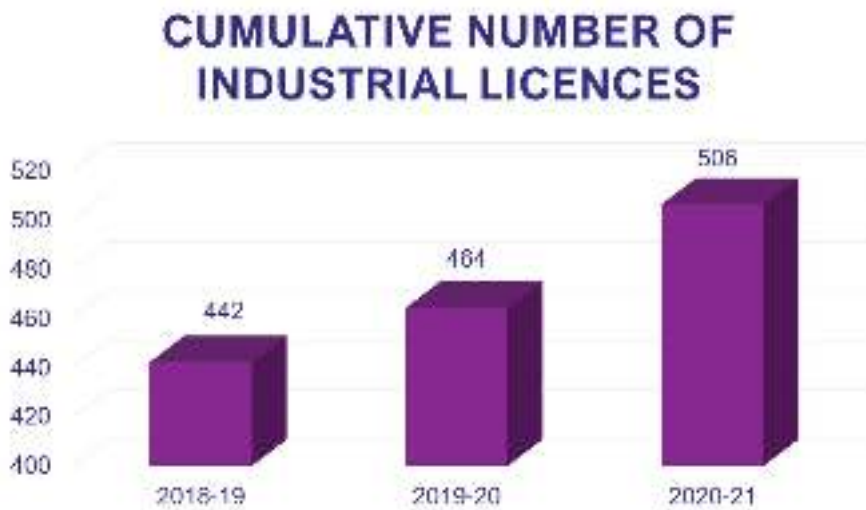


Similarly, the numbers of Export Authorizations issued have also gone up from 254 in 2016-17 to 945 in 2020-21.



Streamlining Industrial Licensing

There has been steady increase in the number of Industrial Licenses (ILs) issued for defence manufacturing. The bar chart indicating Cumulative number of Industrial Licenses issued during last three years is as shown below –



Developing Artificial Intelligence based capabilities:

DDP constituted a Task Force in February 2018 under the Chairmanship of Shri N. Chandrasekaran, Chairman Tata Sons to study the strategic implications of Artificial Intelligence in National Security and Defence needs and to make appropriate recommendations in this regard. The Task Force submitted its recommendations to Ministry of Defence in June 2018.

Based on the recommendations of the Task Force established a high level Defence AI Council (DAIC) headed by the Hon'ble Raksha Mantri, to provide necessary guidance to enable and effect development or tailoring of operating framework, policy level changes and structural support for AI implementation in Defence. A Defence AI Project Agency (DAIPA) with Secretary (DP) as the ex-officio head of the agency was also established to enable the design, development and production of AI based systems and AI based processes across the services and other defence organisations.

Based on the recommendations of the Task Force, a three-year (2019-2022) AI roadmap for Defence PSUs and OFB has been finalized for creating AI based products/technologies relevant to their platforms and earmark appropriate funds for the same. Total 25 AI enabled projects have

been identified under AI road map. Prototypes for 21 Nos. products have been developed and are undergoing testing.

Government has established two defence industrial corridors to serve as an engine of economic development and growth of defence industrial base in the country. They span across Chennai, Hosur, Coimbatore, Salem and Tiruchirappalli in Tamil Nadu and spanning across Aligarh, Agra, Jhansi, Kanpur, Chitrakoot and Lucknow in Uttar Pradesh, wherein investment of over Rs. 3,100 crore and Rs. 3,700 crores respectively were announced by OFB/ DPSUs/ Private Industries.



Two defence industrial corridors

The Government of India has enhanced Foreign Direct Investment (FDI) in Defence Sector up to 74% through the Automatic Route for companies seeing new defence industrial license and up to 100% by Government Route wherever it is likely to result in access to modern technology or for other reasons to be recorded. The obligatory licensee for change in equity / shareholding pattern up to 49% FDI has been replaced with mandatory declaration for the same within 30 days of change of equity /shareholding pattern. The proposals for raising FDI beyond 49% from such companies could also be considered with Government approval. 44 FDI proposal / Joint Venture have been approved in defence sector for manufacture of various defence equipments. Further, significant FDI inflows in Defence and Aerospace sectors have been witnessed.



MoD, in October 2019, has promulgated 02 Nos. OGELs for export of parts and components and for Intra Company ToT.

In order to provide impetus to self-reliance in defence manufacturing as part of Atmanirbhar Bharat, Ministry of Defence has issued a negative list of imports comprising of 101 weapon/platforms, along with indicative timelines/year of import embargo for these items. DDP has also forwarded details of additional lists of items received from DPSUs/OFB to DMA for issuing further tranche of negative lists so that more number of imported items are manufactured in the country.



Innovation for Defence Excellence (iDEX) framework was launched with the aim to achieve self-reliance and to foster innovation and technology development in Defence and Aerospace Sector by engaging Industries including MSMEs, Startups, Individual Innovators, R&D institutes and Academia. More than 90 iDEX winners have been identified for problem statements.



The 'Make' Procedure of capital procurement has been simplified. There is a provision for funding upto 70% of development cost by the Government to Indian industry under Make-I category. In addition, there are specific reservations for MSMEs under the 'Make' procedure. Procedure for 'Make-II' category (Industry funded), introduced in DPP 2016 to encourage indigenous development and manufacture of defence equipment has number of industry friendly provisions such as relaxation of eligibility criterion, minimal documentation, provision for considering proposals suggested by industry/individual etc.

55 projects relating to Army, Navy & Air Force, have been accorded 'Approval in Principle', valuing about INR 30,000 Crores.

Defence Public Sector Undertakings (DPSUs)



Attached/Subordinate Office(s) under Department of Defence Production

- 1. Ordnance Factories under the Ordnance Factory Board (OFB):** Indian Ordnance Factories, with 41 Production Units and several Training and Research Units are the oldest and largest industrial setup which functions under OFB with the primary objective of achieving self-reliance in equipping the armed forces with state-of-the-art battlefield equipment. Core competence of Ordnance Factories is:



Value of Production (VoP)

Values in Rs Cr (excluding) GST

Year	2017-18	2018-19	2019-20	2020-21 (provisional upto 31.12.2020)
Value	16,449	15,087	13,203	6,940

Value of Outsourcing (VoO)

VoP	VoO	VoO/VoP (%)
6,940	1,483	21.36%

2020-21 (Upto 31.12.2020)

Export

In order to make its presence felt in Global Market, various transformation agenda have been implemented in Ordnance Factories by manufacturing OFB products in consonance with international MIL/NATO standard products. OFB has made its presence in the global market in 2020-21 by expanding its export market to new territories such as Middle East, South Asia and USA.

Till OFB has received an export order of 2.7 Million USD for supply of ammunitions to USA.

Major Achievements:

First time issue of HMX

- OFB produced this strategic high explosive for the first time and a consignment of 500 Kg HMX was issued to DRDO (I-CMRL, Pune) in June 2020.

Bullet Resistant Jacket

- Ordnance Clothing Factory Awari handed over first consignment of 92 Bullet Resistant Jackets to Tamil Nadu Police.

40mm UBGL Practice Ammunition

- Inspired by the Prime Minister's clarion call for an Atma Nirbhar Bharat, Ammunition Factory Bhaskri (Pune) wrote a new chapter on self-reliance and indigenization by manufacturing and supplying the first consignment of 40mm Under Barrel Grenade Launcher (Practice) Ammunition to Border Security Force in August 2020.

Issue of first Pilot overhauled T-90 Tank

- HVT undertook this activity without any TCT by using expertise gained in production of GE tanks. The first overhauled tank was rolled out in November 2020 by handing over the title to Lt Gen. MJS Kanon, AVSM, Director General Armoured Corps.

Successful Trials of JVPC Weapon

- 5.56x30mm Joint Venture Protective Carbine (JVPC) jointly developed by OFB (SAP, Karapur) and DRDO (ARDE, Pune) has successfully completed the first phase of User Trials at ARDE Pune in December 2020.

Green Energy

- OFB is significantly contributing to Green Energy and has installed 92.67 MW Solar Power Plants across various Ordnance Factories.

Release of OFB Export Handbook

- OFB Export Handbook was released on 28.09.2020. This is a comprehensive and well-structured guidebook which will be helpful to deal with export transactions.

Production of Emergency Items for Fight against COVID-19

- OFB has produced various essential items during the lockdown period for supporting the government in fight against Covid-19 Pandemic, including total 1.58 lakh litres Hand Sanitizer.

The quantities produced/supplied are given below:

Item	Produced/supplied
Hand Sanitizer	1.58 Lakh Litres
Medical and Non-Medical Masks	25,03,065 Nos
Coveralls (PPE) for Hospital Staff	85,204 Nos
Tents for isolation/quarantine facilities	350 Nos
Repair of Ventilators	67 Nos

Directorate General of Quality Assurance (DGQA)

DGQA is an Inter-Service Organisation functioning under the Department of Defence Production, in the Ministry of Defence. DGQA is responsible for Quality Assurance of all defence stores and equipment, both imported as well as indigenous for the Army, Navy (excluding Naval Armaments)

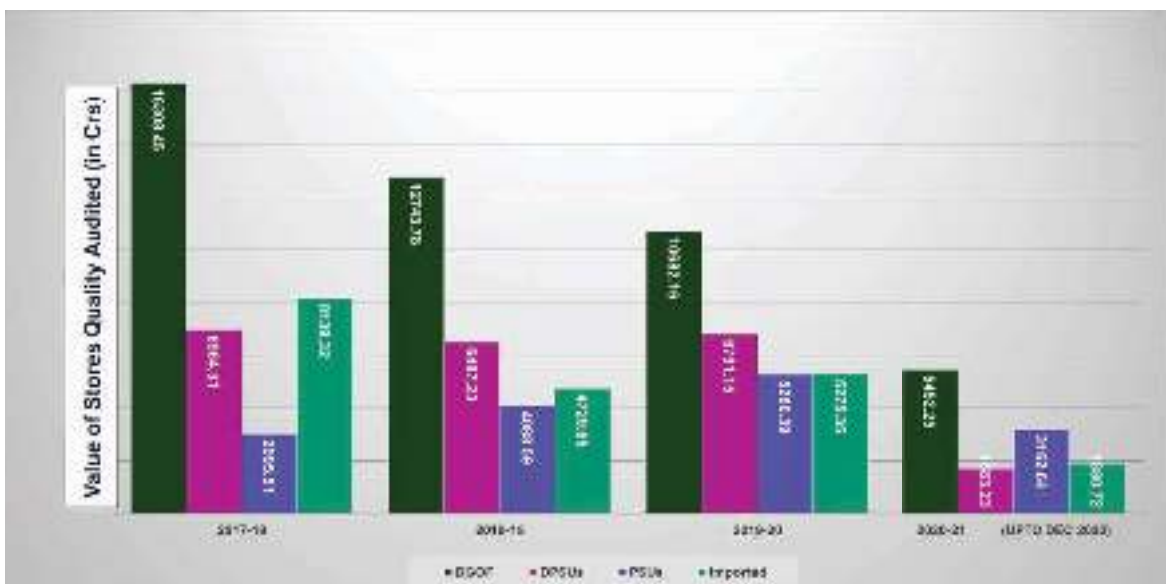
and common user items for the Air Force, procured from Private Sector, Public Sector Undertakings, Ordnance Factories and as Govt to Govt Foreign Military Sales.

DGQA Organisation is structured into eleven Technical Directorates, each responsible for distinct range of equipments. The Technical Directorates are further structured in two tiers for functional purposes, comprising of Controllerates (AsHSP) and Field Quality Assurance Establishments. In addition, there are Proof Establishments under Armament Discipline to carry out proof of weapons and ammunition. DGQA establishments are ISO 9001:2015 certified and 37 laboratories of DGQA are NABL Accredited.

Achievements:

(i) Quality Assurance of Defence Stores:

- (a) During the current financial, Apr to Dec 2020, DGQA organization has provided Quality Assurance services for defence stores worth INR 12,178.87 Crores.
- (b) Manufacturer wise value of stores (Rs in Crore) Quality Audited during last four financial years is as under:-



- **DGQA Technical Evaluation:** During the period from Apr 2020 to Dec 2020, DGQA has carried out Technical evaluations of 12 Major equipment platforms and attended 14 User Trials of various stores, ammunition and equipment, comprising of a number of complex systems and sub systems. For quality assurance of ex-import equipment, a total of 38 pre dispatch inspections (abroad) and 46 joint receipt inspections were carried out.



- **Mission Raksha Gyan Shakti (MRGS):**

(i) Ministry of Defence, Department of Defence Production had launched - '**Mission Raksha Gyan Shakti**' in Apr 2018, with objective of "Boosting the IP culture" and to promote creation of Intellectual Property in the Defence production sector.

(ii) DDP has created a 'Supporting Eco-system' in form of an Intellectual Property Rights Facilitation (IPF) Cell under DGQA, as part of DDP's 'Mission Raksha Gyan Shakti'.

(iii) 1838 number of IP assets have been filed and 26,111 numbers of defence personnel have been trained on IPR.

(iv) It is also heartening to notice that innovators from Indian Armed Forces are coming forward and sharing innovative ideas for providing solution to operational problems and recently the IPF Cell has facilitated filing of 23 numbers of IPR applications forwarded by the personnel of Armed Forces. This trend is very promising and will fulfill the very core objective of MRGS in a very efficient way.

- **Grant of Green Channel and Self Certification for Procurement of Defence Stores & Spares :**

(i) With a view to promote ease of doing business and to achieve national objective of 'Make in India' and 'Atma Nirbhar Bharat', post decision to institute a mechanism for awarding Green Channel Status to firms having predefined financial and quality credentials for broad categories of items having continuous requirement / mass consumption in Defence forces, a Green Channel Policy has been formulated by the Department of Defence Production with the approval of Raksha Mantri. MoD has issued the policy on Green Channel Status vide order dt 24 Mar 2017, for procurement of Defence stores & spares.

(ii) 17 numbers of firms have been granted Green Channel Status to supply main equipment and spares manufactured.



Firms awarded with Green Channel Certificate

- **Self-Certification:** Self Certification has been awarded to 09 Major Defence equipments manufacturers having proven in-house quality management system. The Defence stores shall be supplied by these firms under their own QA Certification.

- **Third Party Inspection(TPI) of Defence Stores**

(i) Under the 'Make in India' and 'Atma Nirbhar Bharat' initiative of the Government Third Party Inspection Scheme has been launched to provide the requisite impetus and support for development and manufacturing of Defence products. This scheme is to outsource Quality Assurance activities for Defence stores manufactured by private industry to TPI agencies. Third Party Inspection (TPI) was promulgated on 30 May 2018. DGQA has registered the following five firms as TPI agencies:



(ii) Rate Contract with 03 registered TPI Agencies have been concluded by DGQA, for inspection for 09 types of batteries. Service HQ has also been intimated to avail TPI services of these registered and contracted agencies for future procurement of these 09 types of batteries.

• **Defence Export Promotion Scheme:**

(i) Scheme for promotion of Defence Exports was issued by Dept of Defence Production. DGQA was assigned the responsibility for issue of 'Fit for Indian Military Use' certification. The scheme provide two options to prospective Defence exporters for export of their equipment globally. DDP notified agencies in respect of Defence equipment/systems indicating "Fit for Indian Military Use" or "Tested and Certified against the QR provided by the prospective Indian Defence Exporter/Manufacturer", for improving the marketability of their products, globally.

An SOP for 'Certification, Testing and Certification under Defence Exports Promotion Scheme' was promulgated by MoD on 06 Mar 2019.

(ii) Major Indian Defence Equipment manufacturers have been awarded 'Fit for Indian. Military' use certificate on 18 Oct 19 under this scheme.



• **Defence Testing Infrastructure Scheme (DTIS):**

(i) Under 'Make in India' and 'Atma Nirbhar Bharat' initiatives, Govt has accorded high priority for development of manufacturing infrastructure in Aerospace and Defence sectors in the country to reduce dependence on imports. Lack of access to 'State of the Art' testing infrastructure for MSMEs, Start Ups and other industries is one of the main impediments for domestic Defence production.

The Defence Testing Infrastructure Scheme (DTIS) envisages setting up of 6-8 DTIS Labs to meet the crucial requirements of testing of Defence equipment/systems.

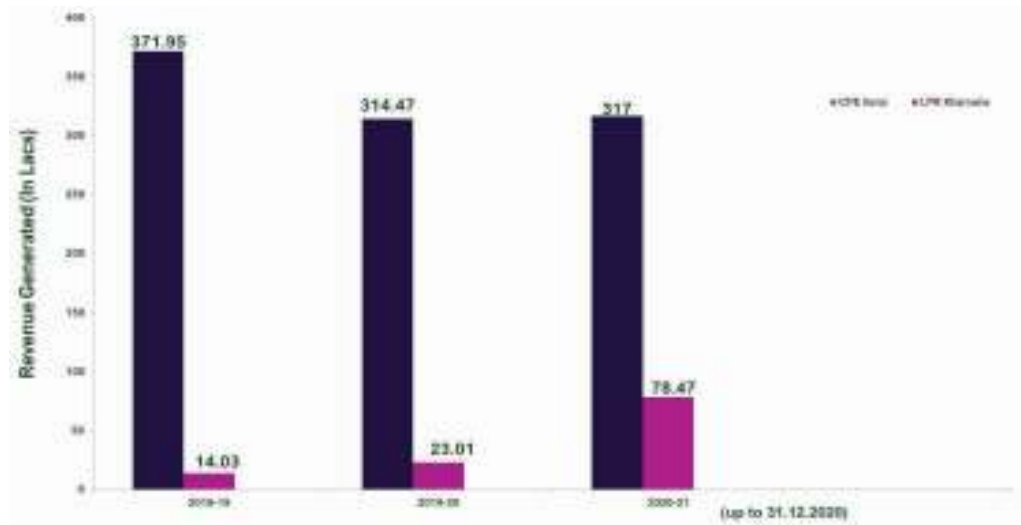
The scheme is also to augment the existing Defence Testing Infrastructure of the already existing Defence Labs.

- (ii) DGQA has been nominated as the coordinator for steering DTIS. Presently DTIS proposes setting up of 6 to 8 new green field Defence Testing Infrastructure, with a total Grant-in Aid of Rs 400 Crore.
- (iii) The DTIS scheme would run for the duration 2020-25, which is concurrent with the Fifteenth Finance Commission cycle, with the sunset date of 31 March 2025. The test facilities planned to be set up under the Scheme are divided into three types, namely, Small, Medium and Large.
- (iv) Presently, Gap analysis of testing infrastructure is being carried out by the appointed consultant, to identify the scope for improvement and shortlist 08 testing infrastructure projects.
- **SOP for Allotment and Utilization of Proof and Firing Ranges by Private Industry.** SOP for Allotment and Utilization of Proof and Firing Ranges by Private Industry has been revised by DGQA including proof ranges under OFB control, DRDO and Indian Army ranges, and promulgated the same on 20 Jun 2019. DGQA is the nominated Nodal agency for coordination of allotment of proof ranges to Private Industry.

Eight Defence weapon manufacturers (Pvt/DPSUs) have utilized the proof test facilities during the financial year.

SOP on testing charges for allotment of proof ranges to private Industries has been promulgated on 16 Dec 2020 and is uploaded on DGQA Website.

- **Proof Activities and Revenue Generated.**
 - (i) Central Proof Establishment, Itarsi (MP) and Long Proof Range, Khamaria (MP) are the two prime Proof Firing Establishments of DGQA. Majority of weapons and ammunitions manufactured in India are proof tested at these establishments.
 - (ii) Revenue earned by DGQA by undertaking proof and test of weapons and ammunition, manufactured by private industries, is as under:-



- **Vendor Interaction Meet:QA-Industry Conclaves** were organised pan India during the current financial year, where reps from various industries participated.
- **Naval Golden Quality e-Conclave (NGQeCON):** NGQeCON was conducted on the theme “Naval QA and Shipbuilding Industry-Emerging Challenges and opportunities in the New Era”, on 10 Jun 20, on behalf of MoD/DDP. The event was organized to commemorate the journey of 50 Glorious Years by Naval QA Units, which were raised in 1970. The event was held as an E-Conclave, with participation of nearly 1000 stakeholders from MoD, Indian Navy, DGQA and Industry.
- **Workshop on QA Data Aggregation & Big Data Analytics:**-A webinar on QA Data Aggregation & Big Data Analytics for Predictive Maintenance & Supply Chain Automation was conducted for DQA(N) & DQA(WP).
- **Software Quality Assurance (SQA) Lab for EW Projects:** CQA(EW) has taken the initiative for establishment of first SQA Lab for EW Systems. AoN for procurement of SQA Tools at an estimated cost of INR. 22,48,201/- has been accorded by Min of Defence (Finance), in Jul 2020.
- **Product Improvement:** National initiative of ‘Atma Nirbhar Bharat’ was contributed by Product Improvements carried out on Gunner Panel and Power Control Panel of L-70 Gun Upgrade. Test Setup Feeder Unit and Electromechanical Power Amplifier for Tank T-90 were upgraded. Modification on humidity oven and walk in dry heat chambers were carried out by DGQA.

- **Training Initiatives:** Defence Institute of Quality Assurance (DIQA) carries out training of DGQA officers and officers from other Defence organizations on Quality Management System. During the current financial year, 260 numbers of officers were trained by conducting online courses on Cyber Security, Basic Explosive, Basic Metallurgy, Internet of Things, IPR and Orientation course for JE (QA).

Directorate General of Aeronautical Quality Assurance (DGAQA)

DGAQA is the Quality Assurance (QA) regulatory authority for Defence & Civil PSUs, Ordnance Factories, DRDO Labs, Trade Firms etc. and provide QA coverage to Military Aircrafts, Aero Engines, Associated Accessories, Air Armaments, Unmanned Air Vehicle (UAV), Missiles etc. during design, development, production (including overhaul/ repair/ defect investigation/ up-gradation/ modification) at various work centres.

DGAQA also plays vital role in Technical Evaluation, Field Trials, Pre-Dispatch Inspection (PDI) & JRI during foreign procurement of Military Aviation stores. DGAQA is a member of Court of Inquiry set up for Accident/ Incident Investigation of Military Aircrafts.

DGAQA has also been authorized by MOD for Capacity assessment and registration of Indian firms for manufacturing & supply of defence aviation stores to the services.

During the year 2020-21, DGAQA has registered 09 firms under different categories. DGAQA approves Test Laboratories for testing of Defence Stores for aviation application.

DGAQA created three new establishments i.e. BEL Chennai (TN), BEL Panchkula and HAL Kasargod (Kerala) with the approval of MoD.

BEL Chennai cell shall provide QA Coverage for the Military Aviation Stores & Associated Ground Support Equipments to BEL Chennai, Combat Vehicles Research and Development Establishment (DRDO) and other private Vendors in and around its location.

BEL Panchkula cell will provide QA coverage to BEL Panchkula & additionally at Central Scientific Instrument Organisation (Ministry of Science and Technology), Terminal Ballistics Research Laboratory (DRDO), Semi Conductor laboratory Mohali, HAL Helicopter Division Extension Office at Mamun Pathankot.

HAL Kasaragod Cell shall provide QA coverage to HAL Kasaragod (Extension of HAL Hyderabad Division) and to other private Vendors in and around its location.

Financial data/ parameters: Value of stores provided with QA coverage by DGAQA during the current year & previous three years is given below:

Financial Year	2017-18	2018-19	2019-20	2020-21 Upto31-12-2020
Value of stores (Crore)	21671	22877	21494	15620.73
DGAQA Budget (Crores)	125.40	130.10	149.91	172.36
Cost of providing QA coverage (%)	0.57%	0.56%	0.69%	

Missile System Quality Assurance Agency (MSQAA): MSQAA is providing QA effective coverage for the following development and production projects:

Developmental Products	Production Projects
HELINA MPATGM NGARM QRSAM SANT RUDRAM-II NASM-SR NIRBHAY SLCM PRALAY PRAHAR ASTRA MRSAM(A) PRITHVI P-II PRITHVI P-II(A) PRITHVI P-III (B) NAG/ PROSPINA	AKASH (ARMY) AKASH (AIRFORCE) BRAHMOS (ARMY) BRAHMOS (NAVY) BRAHMOS (AIR VERSION) MRSAM (IAF) LRSAM SRSAM

The Value of stores inspected/ accepted are as follows:

Year	2017-18	2018-19	2019-20	2020-21 (Provisions & up to 31.12.2020)
Value of Production	390153.56	437337.78	267750.30	305453.74*

*Note: Value taken for period up to 19 Jan 2021

Directorate of Standardization (DoS)

DoS is paving way to mitigate proliferation so as to optimize defence inventory by means of establishing commonality. The assigned duties of the Dte of Standardisation towards standardisation and codification are being accomplished through continual process of formulating new and updating of existing standards.

Targets and Achievement : “Committee of Chairman Standardisation Sub Committee (CCSSC) has target of 1186 Standardisation Documents (95 New & 1091 Revision cases) for year 2020-21 and achieved 935 Standardisation Documents (34 New & 901 Revision cases). 4210 active standardisation documents are maintained by the Directorate of Standardisation (Std Group). 130 Standardisation Documents have been distributed in year 2020-21.

Inclusion of Codification Clause in DAP 2020 :-MoD/DDP/DOS has adopted NATO Codification System (NCS) for codifying the defence inventory by uniquely linking each item of supply to a 13 digit NATO Stock Number (NSN). Software based codification commenced in 2016. DoS has codified more than 5 Lakhs items and registered more than 12,000 vendors by allotting NCAGE (5 Digit Alpha numeric number) giving export potential to indigenous manufacturers (both commercial & defence). Towards ab-initio codification by indigenous manufacturers/Designers as well as obtaining NSNs of imported equipment already codified, a new codification clause has been introduced in RFP(@Para 16, Chap II) and Contractual Clause in SCD (@ Article 33, Chap V)

Cyber Security Group - Cyber Security Group has undertaken number of important and critical activities Some of them are mentioned below:-



Directorate of Planning & Coordination (Dte. of P&C)

The Directorate of Planning and Coordination, an attached office of Department of Defence Production, was established in 1964.

The Directorate is primarily mandated to establish robust indigenous defence industry, improve domestic production by expediting indigenization process in defence sector through various enabling policies viz. 'Make in India' initiative, liberalization of FDI Policy/Industrial licensing policy, providing level playing field to private sector, giving preference to procurement from indigenous route and operationalization of iDEX

Scheme along with the ancillary and correspondingly organising of Defence India Startup Challenge (DISC) on a regular basis with an aim to nurture, handhold and galvanise the startup ecosystem and foster a sustained culture of innovation. Defence Investor Cell is also handled by the Directorate.



In addition, the Directorate renders advice on capital acquisition proposals of Service Headquarters and plays key role in streamlining of Defence Procurement Procedure (DDP). The Directorate is also playing pivotal role in speeding up the on-going efforts for modernization of Naval Shipyards.

Defence Exhibition Organization (DEO)

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

The exhibitions conducted offer an excellent opportunity to show case the capabilities of the Indian Defence Industry. The shows are conducted on an international level. The forum also facilitates interaction with senior foreign delegations.

The primary objective is to promote defence export from both the Defence Public Sector Undertakings (DPSUs) and the Indian Pvt Public Sector industries.

International Exhibitions in India

To provide a platform for the Indian Defence Industry to showcase its capabilities, DEO organizes two biennial International exhibitions in India, namely Aero India and Defexpo India. While Aero

India is dedicated to the aerospace and aviation industry, the focus of Defexpo India is on land and naval systems.

(i) **DefExpo India-2020:** The 11th edition of Defexpo 2020 was organized by the Department of



Defence Production, Ministry of Defence, from 05-09 February 2020 at Vrindavan Yojana, Sector 15, Lucknow, Uttar Pradesh. The theme of Defexpo 2020 was “Digital Transformation of Defence” and tagline was “India the Emerging Defence Manufacturing Hub”.

This was the biggest exposition on Defence ever in terms of area, exhibitors and footfall. The exhibition showcased India’s emergence in the shape of alliances and joint ventures in the defence industry. This show also attracted an unprecedented network of international government and military agencies. The highlights of the event were:-

- (a) Combined live demonstration of indigenously manufactured aero, naval and land systems.
- (b) Largest ever exhibitors participation wherein 1028 exhibitors participated in Defexpo 2020, out of which 856 were Indian exhibitors and 172 were Foreign exhibitors and a footfall of over 11 Lakh visitors was recorded.
- (c) Participation from over 70 countries and was in line with the biggest of international Defence Exhibitions.
- (d) The bookings of space, chalets, conference halls, visitor passes including payment etc were all online.
- (e) In order to encourage MSMEs participation, they were given 50% discount in space booking. 273 MSMEs participated in the event.

(f) For the first time a dedicated MoU signing Event '**Bandhan**' was organized wherein over 200 partnerships involving the signing of MoUs, Transfer of Technology (TOT) and Product Launches were concluded. It witnessed 125 MoUs between DPSUs, Private Defence manufacturing companies and Govt. of UP. 15 Licensing Agreements for ToT were handed over by DRDO to 18 industries apart from exchange of MoU between UPEIDA and DRDO to provide technology support to UP Defence Industrial Corridor.

During Bandhan event there were product launches by OFB, BDL, BEL, MDL and Pvt Sector industries under the 'Make in India' vision. OFB launched '**Sharang**' the 155 mm artillery gun. The BDL launched a man-portable anti-tank guided missile and '**Varunastra**' the anti-submarine torpedo.



'Bandhan' Event

(g) International seminars on India emerging as defence manufacturing hub with focus on digital transformation in defence were organized.

(ii) **Aero India-2021**: Aero India-21, the world's first ever Hybrid Aero and Defence Exhibition was held at Air Force Station, Yelahanka, Bangalore from 3rd Feb to 05th Feb 2021 and was dedicated to Business Visitors only due to COVID-19 restrictions. The event was conducted in Hybrid format showcasing the prowess of Aviation Industry and India's cutting-edge technology. Public days were omitted for the first time due to the pandemic. This 13th edition of Aero India marked the Silver Jubilee/25th glorious year of the biennial event. In the year 1996 the first show took place at the Air Force Station, Yelahanka, Bengaluru, which continues to host this prestigious show ever since.



Aero India 2021: Inaugural Ceremony

(a)The theme of Aero India-21 has been “**The Runway to a Billion Opportunities**” aiming at forging partnerships between Foreign and Indian firms as also Indian and Indian firms which translates to discovery of newer avenues in the global value chain through fast-tracking the indigenization process. Right from the development of the aero engine complex to maintenance, repair and overhaul services, this exhibition demonstrated the accelerated speed with which the Ministry of Defence is inching towards self-reliance and shaping India into a Global Aerospace Hub.

(b)Hon’ble RM launched the website of Aero India-21 on 11 Sep 2020 and released Aero India-21 teaser video during Ambassadors’ Round Table Conference on 07th Oct 2020.

(c)MoU for Aero India-21 was exchanged between DDP/MoD and Government of Karnataka on the margins of Apex Committee review meeting on 15th Jan 2021.

(d)Hon’ble RM also launched the Aero India-21 Mobile App, which proved as handy interactive interface for all issues related to the event and promised to provide a hassle free entry to the venue.

(e)A Curtain Raiser was chaired by Hon’ble RM on 02 Feb 2021. Hon’ble Minister shared the vision of making India one of the biggest countries of the world in defence sector, from design to production, with active participation of public and private sector.

(f) Aero India-21 was inaugurated on 03 Feb 2021 by the Hon’ble RM who emphasized the Hon’ble PM’s call for ‘Atmanirbhar Bharat’.

(g) Aero India -21 witnessed participation of 602 registered exhibitors (524 Indian exhibitors and 78 Foreign exhibitors) and 338 virtual exhibitors.

(h) The contract for 83 Light Combat Aircraft Tejas was handed over to Hindustan Aeronautics Limited(HAL) during the Inaugural Ceremony.

(i) Hon'ble RM inaugurated India Pavilion (India Helisphere) based on theme – **'Rotary Wings' i.e. Helicopters**. It aimed to depict the journey and the potential of our indigenous blades of glory along with a glimpse of roaring future of Rotary wing system in the country through rapid indigenization. India Pavilion witnessed the highest ever participation from more than 70 exhibitors including Govt organizations, PSUs, Indian private majors, MSMEs & startups of the country. It featured state of the art design and manufacturing supply chain associated in various facets of the 360-degrees of rotary wing Eco-system including rotatory UAVs and drones.

(j) The Chiefs of Air Staff conclave with the theme **'Leveraging Aerospace Power for Security and Stability'** was organized on 03 & 04 Feb 2021 in a Hybrid format. About 40 countries (24 countries physically and 16 virtually) from across the continents from Americas, Europe, West Asia, Central Asian Republics, South East Asia, Africa, Indian Ocean Region and the Indo Pacific Region attended the conclave.

(k) Indian Ocean Region(IOR) Defence Ministers' Conclave themed on 'Enhanced peace, security and cooperation in the Indian Ocean Region' was organized on 4th Feb 2021 with the view to promote dialogue and to strengthen vision of Security and Growth for All in the Region(SAGAR) with emphasis on economic and security cooperation among the littoral states, towards sustainable regional development and promoting collective action to deal with threats like natural disasters, piracy, terrorism, illegal, unreported and unregulated fishing etc.

26 countries from the IOR region attended the conclave (18 in physical and 8 in virtual mode).

The Conclave confirmed physical participation from 18 countries including Defence Ministers from four countries (Maldives, Comoros, Iran and Madagascar), Six Ambassadors/High Commissioners representing their countries (Australia, Kenya, Seychelles, Mauritius, Kuwait and Myanmar), Defence Secretary of Sudan and also Service Chiefs of 10 countries.

(l) Hon'ble RM released export compendium of DRDO which consists of defence system and platforms, which can be exported to friendly countries. Commemorating the golden jubilee of the Aeronautical Research and Development Board(AR&DB), RM released a stamp and a book on the journey of AR&DB's contributions to the field of aeronautics. The book highlights the major achievements of AR&DB since its formation. A major revision of Design Development & Production of Military Airborne Stores(DDPMAS) document was also released.

(m) The major attraction of DRDO's participation in the event was the flying display of Airborne Early Warning & Control (AEW&C) system, Light Combat Aircraft (LCA) Tejas and LCA Navy. The highlights of indoor systems included Combat Free Fall System, models of Advanced Medium

Combat Aircraft (AMCA), ABHYAS – High speed Expendable Aerial Target, Twin Engine Deck Based Fighter (TEDBF), FCS System for LCA and Aerostat Systems. More than 300 systems were on display in DRDO pavilion.

(n) India-Russia Military Industrial Conference, India–Russia Military Industrial Conference (MIC) was organized to provide platform to Russian Origin Equipment Manufacturers (OEM) and Indian defence private & public sector companies to interact and identify possible areas of cooperation.

(o) Startup Manthan dedicated to bring together startups, MSMEs and the corporate and military representatives, to identify productive ways forward was organized as a part of Aero India on 5th Feb 2021 by the Innovations for Defence Excellence (iDEX). It provided an unique opportunity for firms associated with iDEX DIO to showcase their capabilities, products & services to the targeted audience of industry leaders and business decision makers.

(p) Seminars were organized by DRDO on energizing the R&D capabilities with Industry, Academia and Certification aspects for Atmanirbhar Bharat. Govt of Karnataka organized seminar on Aerospace and Defence opportunities in Karnataka and US Embassy organized seminar on US-India Defence Collaboration Opportunities and Challenges.

(q) Bandhan Ceremony for signing MoUs, products launches and major announcements was organized on 5th Feb 2021. It witnessed the signing of 128 MoUs, finalization of 19 Technology Transfer (ToT), launches of 17 products, 33 major announcements and handing over of 04 products.

(r) The other important highlights during the Aero India-21 were as under:-



The Valedictory Function on 5th Feb 2021 was graced by the Hon'ble President of India, Shri Ram Nath Kovind. He also witnessed the flight display and India Pavilion.

(t) Aero India-21 is expected to boost the growth sector and promote India as a preferred manufacturing destination globally. It may attract more FDI, increase indigenization, improve employment opportunities in defence sector and promote export furthering the cause of “**Self-reliant India**” initiative.

Autonomous Institute under the Department of Defence Production

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

NIRDESH is a Society of the Ministry of Defence/ Department of Defence Production (MoD/DDP), registered under the Societies Registration Act XXI of 1860 on 20th November 2010. NIRDESH is guided by a General Body (GB) and Board of Governors (BoG) and the functioning is under the directions of an Executive Committee (EC). The member organizations are Indian Navy (IN), Indian Coast Guard (ICG), DRDO and four DPSU Shipyards.



NIRDESH, was set up with a vision of achieving self-reliance in warship and submarine building. An interim head office was setup at Calicut, and the Institute commenced training and R&D activities. Research projects along with the academic institutes have been completed, and five IPRs are now being processed, which would be further taken up for ToT and technology development in maritime application. NIRDESH is now in the process of re-structuring and DRDO will manage the R&D needs mandated to NIRDESH.

Others Divisions/ Cell

(I) Defence Investor Cell (DIC) : DIC was established in January 2018, to act as a facilitator & friend to Defence Entrepreneurs & MSMEs. It acts as a single point of contact for entrepreneurs, to answer all their queries related to policy and investment opportunities in defence production, thereby facilitating investment into defence production sector. Defence Investor Cell (DIC) has made it easier for industry to deal with their queries and requirements. DIC can be reached online at <https://defenceinvestorcell.gov.in>.



DIC has received a phenomenal response from the industry, particularly MSMEs, operating in defence sector, which have found it to be of enormous utility in addressing their grievances related to DPSUs/OFB/SHQ. As on 31 Dec 2020, 1026 queries/cases from the industry, largely from MSMEs, have been received and duly dealt with by DIC since its inception. More than 24 Crore is the amount, DIC has helped in realisation as payment, mostly of MSMEs from DPSUs/OFB/SHQs. The DIC is ensuring response time of less than 2 days to its queries/cases, whereas the average time for successfully closing the query/case is less than 7 days. DIC has been regularly receiving praise and accolades from industry which is tweeted from time to time from the official tweet handle of DDP, MoD i.e. @DefProdIndia.

(II) Defence Production Information Technology (DPIT) Division: DPIT has undertaken all the Information and Communication Technology (ICT) related initiatives under DDP & DOD. Some of the notable projects Design/Developed and Maintained by DPIT are:



Projects Implemented during 2020-21:

i) **Aero India 2021 (<https://aeroindia.gov.in/>):** The website provides solution for online payment, online space bookings, invoice generation etc. Along with Aero India 2021 website, following services were also provided by DPIT:



ii) **Srijan Defence (<https://srijandefence.gov.in/>):** The portal allows DPSUs/OFB/SHQs to display their items, which they have imported or going to import, each item having sizeable import value. They will also display those items which have been planned/targeted in the coming years, for indigenization. The Indian industry will be able to show their interest in those items for which they can design, develop and manufacture as per their capability or through joint venture with OEMs. The concerned DPSUs/OFB/SHQs, based on their requirement of the items and their respective guidelines & procedures, will interact with the interested Indian industry for indigenization.

iii) **Automation of CSD (<https://afd.csdindia.gov.in/>):** The online AFD1 portal is a step towards automating the existing processes of Canteen Stores Department. With the newly developed system, canteen card holders are able to order and make payment for AFD1 items online and take delivery of the ordered product by making only a single visit to the depot. The portal was launched by Hon'ble RM.

(i) **NOC for:**

Aerial Review	https://modnoc.ncog.gov.in/NOC_Aerial/login	The newly developed portal is aimed at facilitating the applicants for submitting their proposals online for seeking MoD Security Clearance for undertaking Aerial activities. The Online System will establish an effective, speedy and transparent mechanism to process these proposals.
RSEE Project	https://modnoc.ncog.gov.in/NOC_OIL/login	The newly developed portal is aimed at facilitating the applicants for submitting their proposals online for seeking MoD Security Clearance for undertaking RSEE activities. The Online System will establish an effective, speedy and transparent mechanism to process these proposals.
Power Project	https://modnoc.ncog.gov.in/NOC_Power/login	The newly developed portal is aimed at facilitating the vendors for submission of applications online for grant of No Objection Certificate for Construction of Power Projects/Wind Turbine Generators/Solar Power Projects (except solar power modules at the top of building for domestic usage).

(ii) **Raksha Mantri Awards Project** (<http://rmawards.ddpmod.gov.in/rmawards/>): The portal, all set to launch, is designed to receive applications for various categories, under the Raksha Mantri Awards for Defence & Aerospace. The portal is developed with a vision to digitize the process of filing nomination and scrutiny of submitted applications by the officials. The portal is aimed to speed up the existing process and to bring in more transparency in the selection process.

Value of Production by Defence PSUs: With the objective of achieving self-reliance in defence and making India a global hub in defence manufacturing, the defence industry ecosystem has enhanced its capabilities and widened the product range. A number of major products have been developed through research and development initiatives in addition to a number of products and equipment being produced through transfer of technology. As a result of these efforts, increase in Value of Production and Profit after Tax of Defence PSUs are indicated in the following tables:-

Value of Production of DPSUs (Value in Rs. Crore)

DPSU	2017-18	2018-19	2019-20	2020-21
HAL	17553	18650	20590	20043.52
BEL	9670	11921	12348	13947
BEML	3226.89	3466.84	3320.76	3556.34
BDL	4641.30	3235.22	2601.21	2042.67
GRSE	1345.52	1378.77	1424.70	1132.76
GSL	1342.67	847.80	902.94	827.39
HSL	583.54	535.85	494.98	393.27
MDL	4484.99	4607.69	4897.43	4041.58
MIDHANI	697.68	814.83	970.11	771.64
Total	43545.59	45458	47550.13	46756.17

Profit after Tax of Defence PSUs (Value in Rs. Crore)

DPSU	2017-18	2018-19	2019-20	2020-21
HAL	1987	2346	2842	3239.45
BEL	1399	1927	1794	2065
BEML	129.45	63.49	68.38	74.8
BDL	528.15	422.59	534.90	257.77
GRSE	92.40	109.94	163.48	153.47
GSL	217.33	131.52	197.77	127.91
HSL	20.99	36.23	13.03	(14)
MDL	439.93	517.28	408.48	479.57
MIDHANI	131.26	130.56	159.73	166.29
Total	4945.51	5684.61	6181.77	6550.26



Department of Military Affairs



Indian Army

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

Operations

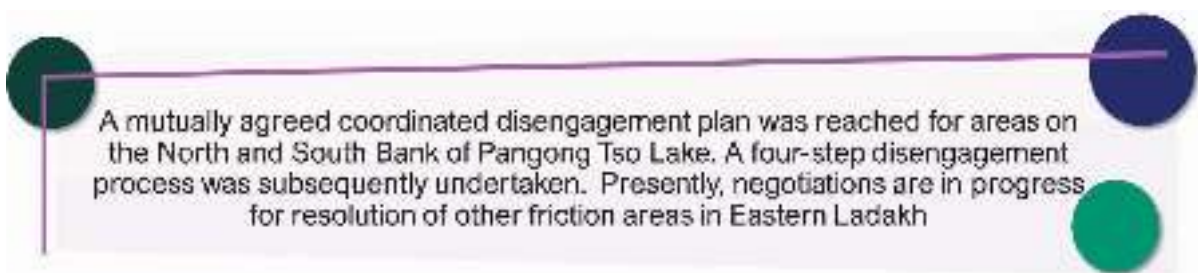
India-China

Situation along Line of Actual Control (LAC)

The year 2020 was a landmark year for India and China along the Northern Borders. China had tried to unilaterally assert her claim in areas where there is a difference in perception of the LAC. Transgressions, clearly intended at altering the status quo along the LAC were carried out. Own troops gave a resolute response, resulting in face-offs. The Indian troops also carried out pre-emptive actions to deny the Chinese side any foot hold on the Kailash Range.

The Chinese side had resorted to rapid paced upgradation of infrastructure through construction of better road connectivity and additional billeting in the areas close to LAC. Our side had also carried out certain infrastructure development.

The highly volatile environment along the LAC resulted in negotiations to be raised to Corps Commander Level.



Jammu and Kashmir

Overall Situation: The year 2020 was a year of stability and consolidation in J&K. On one hand, high tempo of kinetic operations in the hinterland ensured denial of operational space to terrorist tanzems and on the other hand, high level of alertness of troops along the Line of Control (LC) ensured Pakistan's endeavours to infiltrate terrorists into the Valley are defeated.

Situation Along the Line of Control (LC)

Situation along the LC remained tense throughout the year due to unabated probing attempts for infiltration/ trans LC operations by the terrorists and relentless Ceasefire Violations (CFVs) including calibre escalations by Pakistan Army's forward troops. Additionally, a significant increase was witnessed in the number of CFVs. In fact, the year 2020 witnessed the highest number of CFVs since the Ceasefire Understanding of 2003.

During the year 2020, several attempts were also made by Pakistan based terrorist tanzems to smuggle arms and ammunition using innovative means to include use of drones from LC and International Border (IB) sector in J&K and Punjab. High level of alertness displayed by our troops resulted in foiling of several attempts to smuggle arms, ammunition and narcotics.



Situation in Hinterland

Relentless operations had a crippling effect on the terrorist tanzems, severely degrading their ability to undertake terror incidents. A new trend was witnessed during the year wherein at least seven terrorists neutralised turned out to be J&K youth who proceeded on visa to Pakistan in the year 2018. They had apparently undergone radical indoctrination and terrorist training in Pakistan/ Pakistan Occupied Jammu and Kashmir.

Continuing the yearly trend, the number of Terrorist Initiated Incidents (TIIs) reduced in 2020. The terrorists resorted to low-cost low impact TIIs primarily designed to create an environment of fear and intimidation by targeting civilians and lobbing grenade/ firing on static deployments/ piquets of Security Forces. Intensity of violence of these incidents had been relatively lower. However, an increase in targeted killing of political workers/ activists was witnessed during the year. Pakistan tried to cloak the activities of prescribed and conventional terrorist tanzems through proxy tanzems. Many such proxy tanzems came to the fore since August 5, 2019. However, these tanzems primarily remained in social media domain with no manifestation on ground.

North-East

Security situation in the North-east remained stable with violence parameters showing a considerable decline from the previous years. Active insurgency was restricted to a few pockets in Upper Assam, South Arunachal Pradesh, Nagaland and Manipur. Army and Assam Rifles (AR) continued to play a pivotal role to usher in a peaceful environment, which is congenial to socio-economic development of the region.



Operational Logistics

Northern Borders

- Mobilisation:** The mobilisation of formations was complex and the resources employed were a mix of air and road move with stage forwarding of mechanised elements to emplaning airfields by train.
- Advance Winter Stocking:** Given the operational situation in Eastern Ladakh, despite challenges imposed by COVID, additional tonnage (33% more) had been stocked in Ladakh to cater for road open and road closed periods.
- Emergency Procurement:** A number of schemes had been processed to meet the emergent requirements of the Indian Army due to the critical operational situation along the Northern Borders. Fructification of these schemes enhanced fire power, accuracy, surveillance and communication capability in the operational area.

Ammunition Management

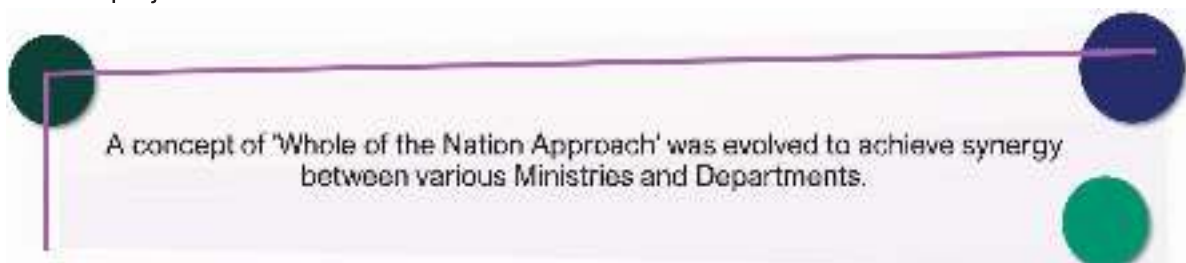
- a) **Five Year Roll-on-Plan** Five year roll-on plan for ammunition infrastructure had been prepared to offset the deficiency of ammunition infrastructure storage along Northern Borders. Accordingly, ammunition infrastructure construction was prioritised.
- b) **Cavern Type Ammunition Storage:** Indian Army had signed a Memorandum of Understanding with National Hydro-electric Power Corporation Limited in April 2019, for construction of Cavern type and Semi Underground Bunker type ammunition storage, as part of a pilot project to check the feasibility of storing ammunition in such structures in mountainous terrain along our Northern Borders. The aim of creation of such infrastructure was to ensure safety of ammunition and optimum utilisation of land.

Joint Logistics Nodes (JLN): In order to identify commonality in processes and utilise the best practices of each service and to further initiate the process of jointness in operational logistics, Government Sanction Letter for JLN at Port Blair, Guwahati and Mumbai had been issued. The JLN (Port Blair) with Andaman and Nicobar Command as lead, JLN Guwahati with Indian Army as lead service was made operational and JLN Mumbai with Indian Navy as lead will be operational soon.

Clean Energy Initiative - Solar Energy Project at Siachen: Indian Army signed Power Purchase Agreement with M/s Broil Solar Energy Ltd to execute One MW solar energy project each at Siachen Base Camp and Partapur. Apart from ecological gains, the project is expected to accrue savings of approximately Rs. 5 crore per year (less than cost of utilisation of diesel in a year) and enable solar mapping by the Indian Army for tapping solar energy particularly along Northern Borders.

Whole of the Nation Approach

Concept: In order to optimise the national resources and gain maximum from the ongoing and future development programs, it is desirable that military requirements be suitably dovetailed in national projects.



The initiative was appreciated by the Prime Minister. As a follow up, several projects had been completed/or are in progress. A brief of various projects initiated under 'Whole of the Nation Approach' are given below:

- a) **Increased Use of Railway Assets by Ministry of Defence:** The rolling stock held by Indian Army is not adequate for smooth mobilisation. To make up the deficiency, rolling stock owned by Railways is being employed to speed up the mobilisation.
- b) **Dual Use Ramps:** In order to enhance entraining/detraining capability at certain locations, a project had been initiated with the Railways for creating additional end ramps on dual use on no cost basis.
- c) **Joint Standard Operating Procedure (SOP)** with Ministry of Road Transport and Highway for use of hydraulic trailers in emergency situations had been evolved.

Modernisation of Arms and Services

Individually, various Arms and Services are being modernised to enhance combat efficiency as follows:

- a) **Infantry:** Modernization of Infantry is being undertaken with aim to enhance lethality and fighting capability of the Infantry soldiers and Specially Forces.
- b) **Mechanised Forces:** Capability enhancement of Mechanised Forces is being undertaken by means of night enablement, enhancing mobility and accuracy as well as upgradation of existing equipment.
- c) **Artillery:** Capability development of Artillery is focused on mediumisation with enhancing lethality, accuracy and surveillance capabilities.
- d) **Army Air Defence:** Capability enhancement of Corps of Army Air Defence is underway. These will enhance the capability of ground-based Air Defence.
- e) **Army Aviation:** Army Aviation is enhancing its firepower and surveillance capability.
- f) **Signals:**
 - i. **Network For Spectrum (NFS):** Project NFS is a pan India Tri Services communications project being rolled out by BSNL under the aegis of Ministry of Communication and Information Technology. After implementation, the network will be handed over to the Ministry of Defence

- ii. **Army Static Switched Communication Network (ASCON) Phase IV:** ASCON Phase IV had been planned in conjunction with Project NFS to extend the reach of Project NFS to the Border Areas (IB/LAC/LC). The Probable Date of Completion (PDC) for the Project is September 2023.

Training: A Futuristic Approach

Inception of Niche Technologies in Indian Army: Technology has changed the battlefield at a fast pace. The recent wars such as the Nagorno-Karabakh conflict are examples in context. There is a need of embracing the best technologies in our services to make them future capable. The idea of 'Atmanirbhar Bharat' had helped Indian Army tremendously in introducing futuristic technologies. Supported by Indian academia, research centres, public and private industries, Indian Army is set for absorption of niche technologies in the Armed Forces.

Training on Niche Technology

1 **Wi-Fi Based Campus Wide Secure Network (CWNs)**

- Military College of Electronics and Mechanical Engineering (MCEME) and Defence Service Staff College (DSSC) have established/are establishing CWNs based on removable end point devices (Tablet/ Laptop etc).
- Military College of Telecommunication Engineering (MCTE) has been mandated to establish fully secure Wi-Fi for CWN. An IT integrated project is being undertaken.

2 **Cyber Training for Defence Cyber Agency (DCyA)**

- MCTE is the Nodal Centre of training of the Army component of the DCyA. Courses on cyber are being undertaken in the Institute.

3 **Artificial Intelligence (AI)**

- A Committee of Experts for AI, has been established in the Indian Army. An AI lab is being established for Rs. 15 crores. A pool of AI qualified persons had been created with eight officers, three JCOs and three NCOs trained in various AI courses. The AI courses in Indian Army had already started in year 2019-20.

4 **Internet of Military Things (IoMT) on 5G**

- Indian Army is in the process of utilising the 5G Test Bed at IIT, Madras and introduction of the Military grade 5G Technology in the Army. As a technology demonstrator, a comprehensive proposal for establishing and demonstration of IoMT for two-point 5G illuminated network for a Brigade sized area in Northern Command is in progress.

COVID Pandemic Response Strategy

Army's response to COVID-19 'Operation NAMASTE', had been two-pronged in the year 2020: 'Force Protection' and 'Assistance to Civil Administration'.

Activities undertaken by the Army to fight the COVID-19 pandemic were part of a MoD level coordinated action plan with the Raksha Mantri, at the helm. All three services worked in synchronisation, in accordance with directions promulgated by the Department of Military Affairs. The salient aspects include the following:

- a) **Force Protection:** Since February, 2020, exhaustive instructions pertaining to hygiene, sanitisation, social distancing, wearing of protective gear, contact tracing, isolation, quarantine etc were issued.

Additional measures such as exploitation of technology and secure communication to encourage work from home wherever feasible with skeletal attendance in offices and restrictions on social and organised congregations were taken to prevent the spread of the pandemic.

In addition, the Indian Army modified various drills/ training methodology and ensured strict compliance to designated protocols. The medical infrastructure was also boosted to cater to COVID-19. These measures adopted resulted in negligible effect of the pandemic on troops and recovery rate of more than 99% was achieved. Vaccination of Army Health Care Workers (HCWs) and Front-Line Workers (FLWs) were undertaken as part of a well-coordinated COVID vaccination plan.

- b) **Strategic Movement of Personnel during Pandemic:** The rotation of defence personnel to maintain operational preparedness of the Defence Forces faced unprecedented challenges due to national lockdown. A large number of personnel were moved to respective Commands from Category A/B establishments and leave stations. The Staff Duties relief movement of units and advance parties was carried out by innovative utilisation of defence rolling stock. The timely induction of units with stringent COVID precautions was a major enabler.

- c) **Training during COVID-19 Pandemic:** Training was carried out within laid down guidelines and norms. Adequate quarantine/isolation facilities were created. Wherever feasible, training was also conducted online. Training of Friendly Foreign Country (FFC) students was carried out without physical presence and contact in classrooms. Adequate provision of online training material and online assignments was carried out.

Territorial Army (TA)

The Territorial Army Act was enacted in 1948. The concept of the Territorial Army provides part time military training to gainfully employment citizens who become competent soldiers as a result of the military training imparted to them.

Contribution of Territorial Army Units in Counter Insurgency/Combat Training and Internal Security: Approximately 75 percent of Territorial Army units are deployed in Counter Insurgency/Counter Terrorism environment in Jammu & Kashmir and North-East and playing an

important role as an adjunct to regular Army for carrying out assigned task in professional manner.



Terriers in Action

Namami Gange

The project for rejuvenation of river Ganga has gained national importance, and after detailed consideration, GoI decided to involve the Army to give impetus to the mammoth task. 137 CETF Bn (TA) 39 GR, colloquially also called the 'Ganga Task Force' has been raised as a pilot project. During the covered period the battalion successfully completed projects of patrolling of sensitive river areas of maintaining, biodiversity, monitoring of river pollution, afforestation & establishment of riverbanks and public awareness campaigns. During the period the battalion initiated work for rejuvenation of 'Macferson Lake' once largest water body of Prayagraj but had dried and decayed over period of time.



Macferson Lake

Afforestation and Ecological Restoration by Ecological Task force Units

As the regular Army could not be pulled out from its operational commitment, it was decided that a Territorial Army unit be raised for the purpose enrolling ex-servicemen from the region on 'Home & Hearth' concept.

Territorial Army as on date has 10 Ecological Task Force Units, including Ganga Task force under its flagship. These units are deployed across the country and actively involved in mass afforestation and ecological restoration tasks in degraded forest lands.



Battalions also run environment awareness campaigns at regular intervals to make local population aware of the importance of ecological restoration in their region.



From left to right: Nirgudi plantation site, Water harvesting



Unit Nursery of Eco Bns Afforestation Kolhan Site

Project Herbal Garden: 134 Ecological Task Force (ETF), a project approved by Ministry of Ayush, had established two herbal gardens, one in Thakubari Military Station and another in the unit planting various endangered species of medicinal plants to propagate them and create awareness of endemic species.



Herbal Garden

Induction of Women Officers: Induction of women officers in Territorial Army has started w.e.f. 2019. So far three women officers have been inducted in TA.

Army Day and Republic Day Parade 2021: Marching contingent of 172 Infantry Battalion (TA) MADRAS participated in for the year 2021. It is a matter of honour for a newly raised battalion for having Army Day and Republic Day Parades successfully participated in both Army Day and Republic Day Parades.

Honours & Awards 2020-2021



TA Marching Contingent in the Republic Day Parade 2021

The following Gallantry/Distinguished service awards were conferred to Territorial Army personnel on the occasion of Independence Day, Army Day & Republic Day 2021:



United Nations (UN) Peacekeeping

United Nations (UN) Peacekeeping: Indian Army continues to play a lead role in UN Peacekeeping with presence in eight out of 14 UN missions worldwide.



The contingents of Indian Army are deployed in some of the most violent and volatile UN missions. Indian Army outreach programmes to integrate internally displaced personnel, communities and tribes into mainstream social fabrics have had a major impact on the peace process in these violent areas which has been appreciated by the missions, international community and local population.



Additionally, India has deployed eight hospitals varying from Level I to Level III hospitals, one Engineering Company, one Petroleum Platoon and one Force Signal Unit. In addition, India has pledged one Rapidly Deployable Infantry Battalion, one Engineering Company and one Signal Company besides ten Staff Officers in United Nations Peacekeeping Capability Readiness System.

India is committed towards participation of women in UN peacekeeping missions. India's current contribution stands at 51 female peacekeepers including 24 SO/MILOBs and 27 as part of contingents.

UN Mission and International Cooperation in Medical Aspects

- a) **COVID Hospitals in UN Mission:** Two Indian hospitals in UN Missions in Democratic Republic Congo and South Sudan have been designated as COVID19 referral hospital for their respective missions and the hospitals have been augmented with additional medical teams.



Indian Hospital in DR Congo

- b) **Exemplary Services of Indian Hospitals in UN Mission:** Indian Field Hospital, Level III, MONUSCO (Democratic Republic of Congo) was the first hospital in the UN System to be evaluated based on the standard for healthcare facilities and has scored an overall compliance of 98 percent.



- c) **Tailormade Courses for Friendly Foreign Countries (FFCs):** In spite of COVID-19 pandemic, 333 mandatory and essential courses were re-structured and conducted. These courses were undertaken ensuring full COVID-19 prevention protocols. In these courses, Indian Army offered 1869 vacancies to foreign officers and NCOs for courses in Indian Army Category 'A' Training Institutes. 24 tailor-made training cadres in the fields desired by FFCs was conducted for five countries.

Additionally, structured exchanges were also undertaken between Instructors/Cadets of Indian Army training / pre- training institutions with the FFC counterparts abroad. As the COVID-19 pandemic restricted the movement of trainees between India and foreign countries, plans were meticulously executed to repatriate them using special flights, chartered flights, service aircrafts and Vande Bharat flights.



Kazakhstan Army Personal being Trained for Casualty Evacuation

Indian Navy



IN has donned a maritime leadership role in the Indian Ocean Region (IOR) due to its multi-dimensional capabilities and active presence in the region. The environment in India's maritime neighbourhood is dynamic, with increased instabilities, deepening geopolitical and ethnic faultlines, growing military capabilities and wide range of security challenges. These pose a combination of conventional and sub-conventional threats emanating to India, at and from the seas, which require the IN to remain effective across the entire spectrum of combat operations and constantly reshape itself to meet future challenges.

The Indian Navy, in addition to being the primary instrument of the nation's maritime power, has also established itself as the primary tool for maritime military diplomacy. Towards this, the Indian Navy has played a critical role in furthering our national and foreign policy objectives through active cooperation and engagement with not just IOR littorals, but maritime nations across the globe. The IN has been actively pursuing activities towards capability building and capacity enhancement of Navies of friendly countries in the IOR.

Operational Deployments

Mission Based Deployments:

IN undertook Mission Based Deployments in Areas of Interest in the IOR to safeguard national maritime interests and maintain continuous/ near continuous presence in areas of significant maritime importance in the IOR. These deployments were in consonance with PM's vision of 'Security And Growth for All in the Region (SAGAR)'. IN ships and aircraft were regularly deployed in the Gulf of Oman/ Persian Gulf, Gulf of Aden/ Red Sea, South and Central Indian Ocean Region (IOR), off Sunda Strait, Andaman Sea/ approaches to Malacca Strait and Northern Bay of Bengal. These deployments enabled IN to be the 'first responder' and 'preferred security partner' across the IOR.

Operation Sankalp: IN has been undertaking Maritime Security Operation code-named Op SANKALP in the Gulf Region to ensure safe passage of Indian Flag Merchant Vessels (IFMVs) transiting through the Strait of Hormuz.



“IN has deployed 16 warships and escorted approximately 161 Lakh Tonnes of cargo onboard 156 IFMVs.”

UN World Food Programme (UN WFP) Escort Mission: INS Airavat escorted UN WFP chartered ship MV Juist carrying relief food cargo from Berbera to Mogadishu in Somalia from June 5-14, 2020, under challenging sea/ weather conditions. This was the third WFP escort mission undertaken by the IN, with previous missions undertaken by INS Trikand in December 2019 and INS Sunayna in December 2018.

Operation Samudra Setu: IN ships Jalashwa, Shardul, Airavat and Magar were deployed from May–July 2020 for Operation Samudra Setu to undertake repatriation of stranded Indian Nationals in the wake of COVID-19, from Iran, Maldives and Sri Lanka. IN ships deployed for Op Samudra Setu evacuated 3992 Indian Nationals including 3551 males, 387 females and 54 children.



Evacuation of Indian Nationals from Maldives



Evacuation of Indian Nationals from Iran



Operation Samudra Setu

Mission SAGAR, SAGAR II and SAGAR III: INS Kesari was deployed to the Southern IOR Island nations as part of ‘Mission SAGAR’, to provide medicine stores and medical kits to Maldives, Mauritius, Madagascar, Comoros and Seychelles. IN Medical Teams embarked onboard the ships also provided medical assistance to Mauritius and Comoros. During Mission SAGAR II, INS Airavat was deployed to deliver 270 MT of humanitarian aid stores to Djibouti, Massawa (Eritrea), Port Sudan (Sudan) and Mombasa, Kenya (for South Sudan) from October-November 2020. INS Kiltan was deployed with Humanitarian Assistance and Disaster Relief (HADR) stores for flood-affected people of Vietnam and Cambodia from December 2020- January 2021, as part of Mission SAGAR III.



Mission Sagar by INS Kesari



Operation SAGAR - Medical Team at Comoros

Assistance to Foreign Governments

Assistance to Government of Madagascar: In January 2020, IN Ship Airavat, which was mission deployed in the South Western IOR, was diverted to Antsiranana, Madagascar for 'Operation Vanilla' to provide HADR to the affected populace post devastation caused by Cyclone Diane. The relief material comprising disaster relief stores, clothing, food and medicines were handed over to Government of Madagascar in presence of the Prime Minister of Republic of Madagascar, His Excellency Christian Lois Ntsay, on February 1, 2020. Further, IN Ship Shardul deployed to South Western IOR in March 2020 delivered of 600 tons of rice to Antsiranana, Madagascar as relief, in the backdrop of floods in the country.



Assistance to Government of Madagascar

Assistance to Government of Mauritius: IN Ship Nireekshak was deployed from August 13 - September 18, 2020 to provide assistance to the Government of Mauritius in the backdrop of the environmental hazard caused due to grounding of MV Wakashio. The ship provided seaward security, search and rescue cover for the salvagers and also assistance for diving operations.



Assistance to Government of Mauritius

Assistance to Philippine Naval Ship: Philippine Navy Ships BRP Ramon Alcaraz and BRP Davao Del entered Kochi harbour on May 6, 2020 for embarkation of Philippine nationals and collection of COVID-19 face masks. The ships departed on May 7, 2020. Post leaving harbour, there was an incident of fire onboard Ramon Alcaraz on May 7, 2020, the ship returned to Kochi on May 8, 2020. Two Philippine Navy sailors who had suffered burns and were evacuated to INHS Sanjivani and to Command Hospital Bangalore by Military Air Ambulance. In addition, technical assistance was also rendered by NSRY (Kochi) for repair of fire damage in the Engine Room.



Casualty Evacuation of Philippine Navy Sailor

Assistance to Maldives: One IN DO in MNDF colours along with crew was deployed at a short notice in spite of travel restrictions imposed by COVID 19 at Hanimadhoo, Maldives w.e.f. September 29, 2020. Consequent to a request from the Government of Maldives, refit of MNDF Huravee was successfully undertaken by Naval Dockyard, Visakhapatnam from March 10 - November 7, 2020.



Assistance to Maldives

Assistance to MV New Diamond: On September 3, 2020, IN ship Sahyadri was diverted to provide assistance to Panama flagged Crude Oil Tanker New Diamond off the East coast of Sri Lanka. On request of Sri Lankan Navy, the ship assumed duties of Scene-of-Action Coordinator to coordinate firefighting and salvage efforts. As Scene-of-Action Coordinator, Sahyadri was instrumental in coordinating firefighting, salvage and towing operations.

Exercises with Foreign Navies

Naseem-Al-Bahr 2020: IN and Royal Navy of Oman (RNO) bilateral exercise Naseem-Al-Bahr was conducted at/ off Goa from January 7 – October 10, 2020. RNO ships Al Rasikh and Al Khassab along with IN ships Beas and Subhadra participated in the exercise.

INDRA NAVY' 2020: IN and Russian Federation Navy (RuFN) bilateral exercise INDRA NAVY was conducted in Bay of Bengal from September 4-5, 2020. RuFN ships Admiral Tributs, Admiral Vinogradov, Boris Butomaand IN ships Ranvijay, Kiltan, Shakti participated in the exercise.



INDRA NAVY 2020

JIMEX 2020: IN and JMSDF (Japan Maritime Self Defence Force) bilateral exercise JIMEX 2020 was conducted in the Arabian Sea from September 26-28, 2020. JMSDF ships Kaga and Ikazuchi; IN ships Chennai, Tarkash and Deepak, IN aircraft P8I, MIG 29K and integral helicopters of both navies participated in the biennial exercise.



BONGO SAGAR 2020: IN and Bangladesh Navy (BN) bilateral exercise BONGO SAGAR 2020 was conducted in North Bay of Bengal from October 3-4, 2020. BN ships Prottoy and Abu Bakr along with Maritime Patrol Aircraft and IN ships Khukri and Kiltan along with Dornier aircraft and integral helicopter participated in the exercise.



BONGO SAGAR 2020

VARUNA 2020: IN and French Navy (FN) bilateral exercise VARUNA-2020 was conducted in Western IOR from October 19-21, 2020. French submarine FNS Emeraude (SSN) and IN submarine Kalvari, along with ASW MR aircraft P8I aircraft participated in the exercise.

SLINEX 2020: IN and Sri Lanka Navy (SLN) bilateral exercise SLINEX 2020 was conducted in the Bay of Bengal from October 19-21, 2020. SLN ships Sayura and Gajabahu and IN ships Kiltan and Kamorta along with Dornier aircraft and integral helicopters participated in the exercise. Maiden landing of Advanced Landing Helicopter (ALH) was undertaken onboard SLN Ship Gajabahu during the exercise, to showcase IN's indigenous capability.



SLINEX 2020

MALABAR 2020: Multi-lateral exercise between IN and United States Navy (USN), Japanese Maritime Self Defence Force (JMSDF) ships and Royal Australian Navy (RAN) was conducted in the IOR in November 2020.



MALABAR 2020

SITMEX 2020: Multi-lateral exercise between IN, Republic of Singapore Navy (RSN) and Royal Thailand Navy (RTN) was conducted the Eastern IOR from November 21-22, 2020.



SITMEX 2020

SIMBEX 2020: IN and Republic of Singapore Navy (RSN) bilateral exercise SIMBEX 2020 was conducted in the Eastern IOR from November 23-25, 2020.



SIMBEX 2020

IMNEX 2020: IN and Myanmar Navy (MN) bilateral exercise IMNEX 2020 was conducted in the Eastern IOR from November 26-28, 2020.



IMNEX 2020

PASSEX: The Indian Navy undertakes Passage Exercise (PASSEX) with friendly foreign navy units on opportune occasions to enhance inter-operability and imbibe best practices. PASSEXs were undertaken with JMSDF, French Navy, US Navy and RAN during the year 2020.



PASSEX with Australian Navy

Coordinated Patrol (CORPAT) with Indian Ocean Region Littoral Navies: As part of maritime security cooperation with maritime neighbours, Coordinated Patrols along the IMBL are being conducted with Indonesia, Thailand, Bangladesh, Myanmar, as per established MoUs and Standard Operating Procedures.

Anti-Piracy Patrol: To address the wide range and large spread of unconventional security challenges in the maritime domain such as piracy, smuggling, human trafficking, gun-running etc, IN has been deploying a ship in the Gulf of Aden since 2008. A total of 84 ships have been deployed to-date.

Exclusive Economic Zone (EEZ) Surveillance: IN is committed to assisting friendly IOR littoral nations in maritime surveillance. Accordingly, based on request of the host government, IN regularly undertakes surveillance of the Exclusive Economic Zone of Maldives once a month, and of Seychelles and Mauritius twice a year by deploying IN ships and aircraft. With the recent signing of MoU between India and Mozambique, IN will commence undertaking EEZ surveillance of Mozambique twice a year.

P-8I Deployments

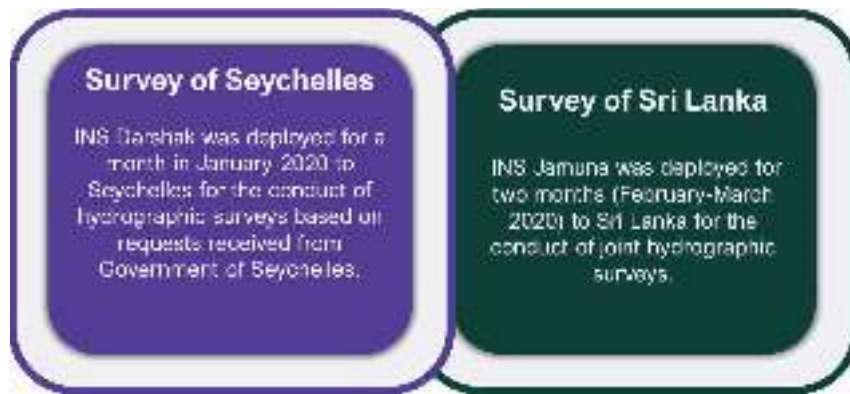
La Reunion IN P-8I was deployed to La Reunion Island from February 27 to March 3, 2020 to participate in Joint Maritime Security Operations in a bilateral engagement with the French Armed Forces in the Southern Indian Ocean Zone (FAZSO).
Comoros IN P-8I was deployed to Moroni, Comoros as part of the Southern IOR Deployment from June 17-18, 2020. This was the maiden deployment of an IN Maritime Patrol Aircraft to the Archipelago.
Qatar IN P8I was detached to Doha for the first IN-QENF BILAT from November 18-22, 2019.



P-8I deployed to La Reunion Island

Hydrographic FC Initiatives of IN

The IN ships were deployed to Mauritius, Seychelles and Sri Lanka. The details of foreign cooperation surveys undertaken are enumerated in succeeding paragraphs:



Coastal Security Exercises: In order to integrate the fishing community into the Coastal Security framework and to develop them as “Eyes and Ears of the sea, regular coastal security awareness programmes are being conducted at coastal districts of the country. The campaigns are a joint effort with personnel drawn from the Indian Navy, Coast Guard and Marine Police. Officials of Fisheries department also join the campaign in their respective areas.



Coastal Security Campaign

Commissioning and Launching of Ships

Launch of Himgiri: The first of the three Project 17A ships being built at M/s GRSE, Kolkata was launched on December 14, 2020 by spouse of Chief of Defence Staff.



Launch of Himgiri

Commissioning of INS Kavaratti: INS Kavaratti, the fourth and last ship of Project 28, was commissioned by Chief of the Army Staff on October 22, 2020 at Visakhapatnam.



Commissioning of INS Kavaratti

Commissioning of IN LCUs L57 (Yard 2098): IN LCU L57 was commissioned by Commander-in-Chief, A&N Command at Port Blair on May 15, 2020. The ship is seventh of eight LCU MK IV ships being constructed by M/s GRSE, Kolkata.



Commissioning of IN LCU L57

Innovation and Indigenization

Introduction of Higher Specs Fuel for IN Ships (LSFHSD-IN 512): IN in collaboration with M/s IOCL carried out an extensive, thorough study along with a comparative evaluation of existing international regulations (ISO, MARPOL, NATO etc.) and as an outcome, new fuel specs meeting international and NATO standards, were launched in January 2020. Supply of the new fuel through IOCL commenced in March 2020.



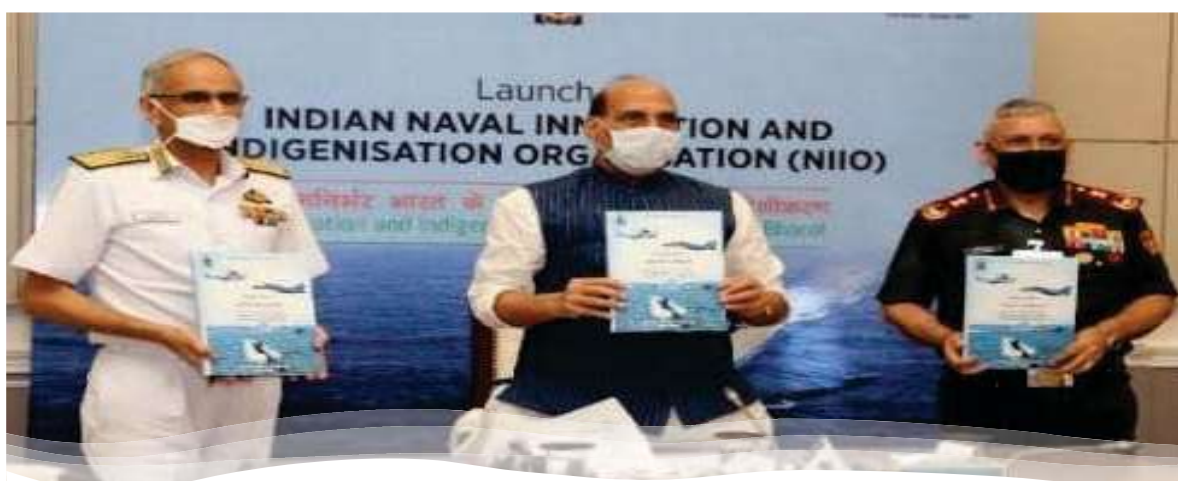
Launch of New Fuel Specs – IN 512

Indigenization Efforts: IN continues to be in the forefront of indigenization, in-line with the Government's vision for 'Atmanirbhar Bharat'. Out of 42 ships on order, 40 are being built indigenously and AoN exists for construction of 49 ships and submarines to be built indigenously. IN has developed 23 major equipment/systems and over 4500 sub-assemblies/components indigenously for IN Ships and Submarines till date.

The first 'Commercial Supply' of indigenously designed and developed Sonar Dome for IN ships was supplied by M/s Kineco, Goa in September 2020.

Important Activities

Naval Innovation and Indigenisation Organisation (NIIO): (NIIO) was inaugurated by Honorable RM on August 13, 2020. Indian Navy had signed four Memorandums of Understanding (MoUs) with Uttar Pradesh Expressway Industrial Development Authority (UPEIDA), Raksha Shakti University (RSU) at Gujarat, Maker Village at Kochi and the Society of Indian Defence Manufacturers (SIDM) to interact with academia and industry towards fostering innovation and indigenization for self-reliance in defence. In addition, IN's Indigenization Plan titled 'SWAVLAMBAN' was also released by Raksha Mantri, as part of launch of NIIO.



Inauguration of Innovation and Inauguration of Innovation and Indigenization Organization (NIIO)

DEFEXPO 2020: DEFEXPO 2020, a flagship biennial Defence Exhibition hosted by MoD, was held in Lucknow from February 5-9, 2020. This was the eleventh edition of DEFEXPO with a theme of 'India: The Emerging Defence Manufacturing Hub'. 172 foreign defence manufactures participated in the event. The Navy Pavilion on Indigenization was set up during the DEFEXPO and comprised of 10 stalls for displaying IN's indigenization efforts.



Indian Navy Indigenization Pavilion & CDS Visit to IN Pavilion during DEFEXPO 2020

India-Africa Defence Minister's Conclave: Maiden India-Africa Defence Minister's Conclave was held on February 6, 2020 at Lucknow in conjunction with DEFEXPO-20. A joint declaration- 'Lucknow Declaration' was signed as part of the Conclave.

"154 delegates from Africa including Defence Ministers from 14 African countries, Members of Parliament, 19 Defence and Service Chiefs and eight Permanent Secretaries from 38 African countries participated in the Conclave."

Award of President's Colours

- a) On the occasion of Platinum Jubilee, INS Shivaji was awarded the President's Colours in February 2020, in recognition of meritorious service rendered towards training of personnel.



Handing over of President's Colours

- b) Naval Academy has been in existence for nearly 50 years. President of India awarded President's Colours to INA in November 20, 2019 on 50th anniversary.



Award of President's Colours to INA

MLA's Day at Sea: MLA's (Odisha Legislative Assembly) Day at Sea was conducted off Paradip on December 22, 2020, in which 90 MLAs and one MP participated. The dignitaries were briefed on the Maritime Security in general and Coastal Security in particular during the Day at Sea.



MLA's Day at Sea

39th Indian Scientific Expedition to Antarctica: Hydrographic survey team consisting of one Long Hydrography course qualified officer and one Hydro sailor participated in the 39th Indian Scientific Expedition to Antarctica from December 2019 - May 2020. They carried out hydrographic survey off Larseman Hill and Princess Astrid Coast.

LCA (Navy): LCA (N) programme is being jointly developed by ADA & IN. The project achieved a major milestone on January 11, 2020 when the aircraft undertook the first ever arrested landing on the aircraft carrier.

Victory Day Parade: Victory Day Parade to commemorate 75th anniversary celebrations of World War II was held at Moscow, Russia on June 24, 2020. A 75 member tri-services contingent, including 19 members (2 officers and 17 sailors) from IN participated in the parade.

Indian Airforce



Air power is a powerful and flexible tool of national security. In a classic sense, Air power is defined as the total ability of a nation to assert its will through the medium of air. It is a potent instrument of national power capable of deterring conflict and maintaining peace. In any conflict in present times, the aim would be to isolate the enemy's command and control structures, augment psychological warfare and precision strikes on the critical vulnerabilities deep inside enemy territory. This concept favours employment of air power more than any other form of military power.

The strength of India's air power lies in the IAF with the capabilities of air arms of the other services reinforcing that strength. Aviation related research and development as also industrial capabilities have a force multiplier effect. Space capabilities further add to the above to enhance the aerospace power of the nation.

IAF is pursuing a focused modernisation plan to transform into a strategic aerospace power with full spectrum capability. Continuous upgradation of the existing equipment and induction of new weapon platforms and systems have ensured that IAF continues to progress on the desired trajectory of modernisation. Induction of Rafale aircraft, Attack Helicopters, Heavy Lift Helicopters, Combat Support Elements, Surface-to-Air Guided Weapons (SAGW) and Air Defence Radars will bolster operational capability and capacity. The IAF is also strengthening its ability to undertake Network Centric Operations (NCO) by integrating all the Command and Control structures with the sensors and weapon systems.

Acquisitions and Upgrades

Rafale Aircraft: Rafale is an omni-role fighter aircraft which is fully operational in India with its state of the art weapons. It will provide long range capability to engage targets in depth and will provide a strong weapons and systems capability edge over our adversaries. The weapons package includes Air-to-Air Beyond Visual Range (BVR) METEOR missile. For ground targets, Rafale is equipped with long range SCALP precision guided Air-to-Ground missile which will provide IAF the capability to strike targets with precision without crossing the border/LoC.

In addition, the Rafale for IAF has certain India specific enhancements including capability for high altitude engine start (enabling operations from Himalayan region).



Rafale Aircraft

Light Combat Aircraft (LCA): HAL has commenced delivery of LCA in Final Operational Clearance configuration. The second squadron has been resurrected by IAF and is operational since April 1, 2020.

LCA Mk 1A will have better capabilities such as AESA Radar, Integrated Electronic Warfare (EW) Suite, Long Range Beyond Visual Range (BVR) missile, Air to Air Refuelling and better avionics with many maintainability and obsolescence improvements.



Light Combat Aircraft

Mirage-2000 Upgrade: In production year 2020-21, HAL upgraded a total of 06 Mirage 2000 H/TH aircraft to Mirage 2000 I/TI aircraft. Series upgrade of a total of 18 aircraft has been completed at HAL till March 2021. The upgrade features state of the art avionics, enhanced radar ranges and BVR missiles.



Mirage 2000 Upgrade in Air Defence Configuration

MiG-29 Upgrade: The MiG-29 Upgrade Contract was signed on March 7, 2008 for upgrade and life extension of 63 MiG-29 aircraft. A total of 46 aircraft have been upgraded till March 2021 with the remaining aircraft at various stages of upgradation. The upgraded aircraft have been allotted to three frontline Squadrons.

Apache Operations: Both Apache Sqns were operationalized at Pathankot and have been deployed in Ladakh sector due to Op requirements in June 2020. They have operationalized in all high altitude helipads/ ALG's and undertook high altitude live firing of ATGM's, RF's and canons. They also took part in AFDP fly past and Republic Day celebrations fly past.

Projects

Integration of BrahMos Air to Surface Missile on Su-30 MKI Aircraft: The fleet clearance of BrahMos missile on Su-30MKI was accorded on September 29, 2020. Successful firing of BrahMos missile against a sea target was carried out on October 30, 2020. Successful integration of the BrahMos missile on the Su-30 MKI has enhanced the strategic significance and combat potential of the aircraft by a sizeable margin.



Su30 MKI with BrahMos Missile

MAFI Phase-II: A contract for Modernisation of Air Field Infrastructure Phase II was signed with M/s Tata Power (SED) on May 8, 2020. MAFI Phase-I included upgradation of 30 airfields of IAF. MAFI-II includes 37 airfields out of which 24 are of IAF, 9 of Indian Navy and 2 each of ARC and ICG. It is a turnkey project that includes installation and commissioning of modern airfield equipment, thereby providing excellent control of the airfield systems to the air traffic controllers. The up-gradation of navigational aids and infrastructure under this project would enhance the operational capability in poor visibility and adverse weather.



Modernised Air Field Infrastructure

Ground Based Air Defence Systems: A contract for Digitisation of Firing Units of Pechora Ground Based Surface to Air Missile System was concluded on September 25, 2020 and a

contract for procurement of 7 Sqns of indigenous Akash Missile System was signed on September 13, 2019.



Akash Missile System

Integrated Air Command and Control System (IACCS): It is a networked system of systems to carry out automated Air Defence Op functions. Total nine nodes are functional since 2019-20 achieving pan-India integration of all military air traffic. All radars of IAF have been integrated successfully. MRSAM and Akash Weapon Systems have also been successfully integrated into IACCS.

Integrated Training Area: An Integrated Training Area (ITA) has been operational since March 2020 to train the combat elements in a realistic scenario, with an aim to keep the air force battle ready. The training was successfully undertaken with adherence to COVID-19 protocols. Exercise provides opportunity to evaluate efficacy of various indigenous combat system under development.

Flexible Use of Airspace (FUA) & Joint User Aerodromes (JUA)

(a) The Indian Air Force, under the Government of India initiative of UDAN and RCS, has opened 46 airfields for civil airline operations.



Under UDAN & RAS 46 airfields has been opened for civil airline operations

This has not only enhanced domestic air connectivity but also optimized resource utilization. Wherever the civil terminals are not available, to support the civil airline operations, the IAF has permitted civil aircraft parking in the IAF technical area.

- (b) To boost the civil aviation industry the IAF opened up its upper restricted airspace for civil airline use by setting up the National Airspace Management Cell (NAMC) at Delhi in July 2020. In order to optimize flexible utilization of the airspace, the Regional AMC at Chennai has also been operationalised with joint manning by IAF and AAI.

Under the FUA, the IAF has handed over its restricted airspace above FL 330 North of Pune and FL 250 South of Pune to AAI.

- (c) IAF has also permitted establishment of 95 ATS routes which also includes Conditional Routes (CDRs). This has made it possible for civil aircraft to fly more direct routes which has resulted in time savings, reduced fuel consumption as well as reduced carbon foot print.

Base Repair Depots (BRDs)/ Nodal Technology Centers/ Innovations: BRDs are driving the innovations and enhancing the indigenisation through Nodal Technology Centres (NTC) and respective indigenisation Cells. The efforts are appended below:

- (a) **Target for High Value Items Indigenisation under Atmanirbhar Bharat Abhiyan:** For the year 2020-21, 97 lines of high value and complex spares which are presently under import range, have been targeted for indigenisation. As of March 1, 2021 out of 97 lines, 47 lines have already been indigenised and for 47 lines Development Orders have been placed. The successful completion of 47 lines has resulted in Rs 141.6 crore being offset against import cost.

- (b) **Srijandefence Webportal:** In support of the website launched by the Ministry of Defence viz., ***www.srijandefence.gov.in***, IAF has uploaded a list of 206 Spares which are under import range. This would provide better visibility of IAF's indigenisation requirements to the Indian Industry. Post hosting, certain Indian industries have approached the IAF for the indigenisation projects and follow-up actions initiated.



- (c) **Manufacture of Russian Origin Spares in India under IGA:** Several MoU have been finalized between Russian OEMs and Indian industry partners under the umbrella of Inter Governmental Agreement. The process of manufacturing of 24 lines of spares has been issued

to M/s Space Era, Hyderabad (a JV between Indian partner and JSC KRET) for manufacture in India.

(d) **MoU with R&D Centers:** IAF has signed MoU with NAL on November 24, 2020. MoU with National Metallurgical Lab, Jamshedpur for cooperation and promotion of Research and Development in areas of mutual interest has been signed on December 7, 2020.



(e) **Indigenisation of Complex Spares through Nodal Technology Centers:** In order to widen the scope of indigenisation activities, tap the Depots' expertise in Life Cycle Management and garner their potential to optimum levels, a total of 11 Nodal Technology Centres (NTCs) have been formed at major BRDs and 28 ED. 135 NTC projects have been completed and work is in progress for 187 projects.

(f) **Indigenous ROH/ Upgrade Technology Development:** OEMs have expressed inability to provide ToT for few maintenance activities. BRDs with their technological core competency have developed the in house ROH technology for fleets and support systems. Accordingly, RoH facilities for 14 items have been established and for 58 lines various are under progress.

e-MMS: Indian Air Force has taken a giant step in automation of Maintenance Management through implementation of e-Maintenance Management System (e-MMS), which is one of the largest Maintenance Repair Overhaul (MRO) solutions implemented in the world. Paperless workflow for recording maintenance activities in e-MMS is in effect from April 2020. This has enhanced efficiency, productivity in decision making and digital enforcement of maintenance policies.

Integrated Materials Management Online System (IMMOLS): IAF has developed a fully automated Provisioning and Forecasting model through IMMOLS to meet the maintenance Spares requirement for the next five years based on past consumption trend, likely assets to be available in this period and utilisation rate being planned for the weapons systems. Additionally, a HAL interaction mechanism has been made as a Single Point Contact agency is exercising

interaction with HAL with all Division Heads and Corporate office. An IAF- HAL e- Portal “Havai” has been launched for enabling real time exchange of Information between IAF and HAL.

Atmanirbhar Bharat: It has been an endeavour of IAF to provide impetus to the process of self-reliance in Defence Manufacturing. The various schemes under Make in India initiative:

(a) **Make-II Scheme:** 15 cases as per the Make-II procedure of Chapter-III of DAP 2020. Out of these fifteen cases, Project Sanction Order (PSO) for prototype development has been issued for five cases. PSO to undertake Design & Development of Chaff & Flares, Infra Red Scan and Track for Su-30, Foldable Fibreglass Mats, 125 Kg Bombs and Fuze for Aerial bombs has been awarded to Indian Industry.

(b) **Technology Development Fund (TDF) Scheme:** Government of India had set up a ‘Technology Development Fund (TDF)’ which is managed by DRDO. A total of 18 IAF projects under the scheme are at various stages of the TDF procedure. Design and Development of Video processing/switching board for Su-30 MKI has been completed by M/s Logic Fruit Technologies. Further, contract for D&D of Burner rings for Mirage-2000 engines has been awarded to an Indian vendor.

(c) **iDEX (Innovation for Defence Excellence):** Under the iDEX framework of DIO, MoD for engaging industries (including MSMEs, Start-ups, Individual Innovators), IAF has participated in four Defence India Startup Challenges (DISC). IAF is the nodal service for following projects under progress through iDEX framework.



Fight Against Covid - 19: Medical Activities



IAF Corona Help Line: An IAF Corona helpline has been started on March 13, 2020 for all Serving personnel, families, defence civilians and veterans. The helpline is managed by medical officers from AFCME and it is active 24x7 and on all days. The queries are received on mobile, whatsapp and email.

Infrastructure Facilities for Covid-19: As per directions of Gol, quarantine facilities for COVID-19 patients were created at various stations in IAF for catering to Gol evacuees from overseas or within the country.

Equipment for Covid-19 Management: All IAF hospitals were adequately stocked with consumables (eg. PPEs, masks, medicines, sanitising material etc.) and non-expendable medical stores (eg. ventilators, oxygen cylinders, oxygen concentrators etc), utilising emergency financial powers.

Treatment Facilities: IAF converted five Air Force Hospitals into Dedicated/ Mixed COVID hospitals which were prepared to receive civilian patients in addition to serving personnel and dependents.

COVID Vaccination Programme in IAF: Vaccination for Covid-19 commenced across IAF on January 16, 2021 along with the national vaccination drive. Dedicated Covid-19 vaccination centres have been established in each station. In the first phase, all the Healthcare Workers (HCWs) are being vaccinated, followed by Frontline Workers (FLWs).

Modernisation of Healthcare Services

Installation of SPECT – CT Machine at CHAF Bangalore: A state of art single-photon emission computerized tomography (SPECT) – Computed tomography (CT) Machine was installed in Nuclear Medicine Centre on November 20, 2020 at CHFAB.



Assisted Reproductive Technology (ART) Centre at CHAF Bangalore: A state of art ART facility 'Navakriti' was established on November 20, 2020 at CHAFB. This centre boasts of the complete spectrum of advanced fertility management facilities (IUI, IVF, ICSI, Testicular Sperm Aspiration, Percutaneous Epididymal Sperm Aspiration & Fertility preservation including Oocyte and semen freezing).

Headquarters Integrated Defence Staff (HQ IDS)

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

Enhancing Combat Capability

Integrated Theatre Commands: Integrated Theatre Commands are being raised in the Armed Forces. Task Directives for Study Groups for establishment of Integrated Air Defence, Maritime Theatre and Land Theatre Commands have been formulated and studies are currently underway for formulation of the implementation norms.

Joint Logistics in the Services: A joint & more efficient concept of dealing with operational logistic issues in the three Services is currently under formulation. In this regard, Joint Services Study Groups (JSSG) are currently being progressed to evolve common logistics policies for the Services. A pilot project based on establishment of Joint Logistics Nodes (JLN), one each at following cities, have since been sanctioned.



It would significantly enhance jointness and inter-operability between the Services and go a long way in improving & integrating the logistics processes of the Armed Forces.

Andaman & Nicobar Command (ANC): A long term comprehensive infrastructure development plan focusing on augmentation of operational logistics facilities has been finalised for implementation. Further operational plans have also been refined to ensure optimum surveillance & security.

Integrated Capability Development System (ICADS): The procedure for ensuring joint capability development in the Armed Forces has been streamlined in consultation with the Service HQs under ICADS which has been implemented w.e.f. August 14, 2020. HQ IDS Procedure based on ICADS Framework has been instituted to undertake Joint Capability Development in the Armed Forces through ICADS framework to formulate a long term Integrated Capability Development Plan (ICDP), five year Defence Capital Acquisition Plan (DCAP) and two year roll on Annual Acquisition Plan (AAP) in conjunction with the Service Headquarters.

Constitution of Joint Capability & Force Structuring Board (JCFCB): Given the enormity and complexity of the Integrated Capability Development System (ICADS) process, a separate empowered board; the JCFCB has been established in November 2020 under the chairmanship of CISC with a formal composition, membership & charter. JCFCB will deliberate on specific & critical matters of capability development and adjudicate issues prior to their being processed at Ministry of Defence.

Enhancing Jointmanship

HQ Integrated Defence Staff (IDS): Restructuring of HQ IDS has been carried out to realign & harmonize its functioning in sync with the appointment of CDS and his charter as Permanent Chairman Chiefs of Staff Committee (COSC). This revised structure of HQ IDS is also envisaged to meet the primary need of driving the transformation & theaterisation of the Services

Tri-Services Artificial Intelligence (AI) Initiatives: The AI Tri-Service Joint Working Group steered by HQ IDS has ensured sharing of information of AI initiatives and best practices amongst the Tri-Services. Setting up a High Performance Computing (HPC) infrastructure for Tri-Service requirement of AI is also being progressed.

Development of Joint Doctrines: Three joint doctrines have been promulgated during the year while four new Joint Doctrines are currently under formulation. In addition, several Joint Doctrines are also under revision.

Jointmanship Training Capsule: A Jointmanship training capsule was conducted by Training Branch of HQ IDS at USI New Delhi w.e.f. January 18 to 29, 2021 for 30 mid/ senior rank Officers of the Armed Forces.



Atmanirbhar Bharat

In last two years, 75 schemes of Make in India (MKI) worth Rs 1.14 lakh crore have been contracted and 90 AoN worth Rs 1.61 lakh crore granted.

In 2020 alone, 73% of the total contracts were in favour of Indian vendors.

The 'Buy Indian' category has contributed to 65% of the total contracts in the past two years.

In efforts to boost the Indian defence industry, contracts with MSMEs in 2020 have been increased by 28%.

A large number of Artillery guns, Ammunition, Aircraft, Helicopters, Ships, Assault Rifles and Air Field security/ infrastructure have been manufactured or are under manufacture through domestic industry.

Indigenisation (Negative) List of Imports First Indigenisation (Negative) list of Weapons/ Platform for import Embargo' with regard to the three Services was released by the Hon'ble RM on August 9, 2020 in order to give a fillip to Atmanirbhar Bharat. The second list is currently under preparation in due consultation with all the stakeholders especially the domestic & private industry. This is envisaged to provide the domestic defence manufacturing and R&D sector including MSMEs a much needed boost, enhance public-private partnership and enhance industrial capacity.

Indigenisation of Imported Spares: A multipronged approach involving SHQs and DDP is being progressed to address this issue.

Overhauling Trial and Testing Procedures: In line with the Government pronouncement to streamline trial and testing procedures to allow time bound procurement of equipment and promote indigenous defence industry, actions were taken by HQ IDS to revamp the procedure of Field Evaluation Trials (FET) as part of DAP 2020. An HQ IDS led committee undertook comprehensive review to streamline both trial and Quality Assurance procedures to make them more objective, efficient and inclusive. Inputs from industry were also factored to remove bottlenecks, bring in more transparency and ensure involvement of QEMs at each stage.

Military International Cooperation

Reciprocal International Logistics Agreements: Post signing of the first reciprocal international logistics agreement in 2016 between India and US (LEMOA), the same has now been operationalized. The agreement is designed to facilitate reciprocal logistics support between the

military forces of India and US, to be used during authorised port visits, joint exercises and training events and Humanitarian Assistance and Disaster Relief (HADR) efforts. Similar arrangements have also been signed with Australia and Japan in 2020. These agreements are a paradigm shift from the way international logistics requirements was being dealt with and will go a long way in enhancing strategic reach of Armed Forces as also accrue economic advantage to the nation.

Roadmap For Military International Cooperation (MIC): With restructuring of MoD, the responsibility to “Integrate and rationalise International Cooperation plans of the Services, including Foreign Training, Exercises and other exchanges in coordination with the Ministry of External Affairs” has been entrusted to DMA. A roadmap to streamline and align the defence cooperation activities of all three Service HQs as well as HQ IDS, with the National Foreign Policy is currently under formulation.

Defence Export Promotion: In pursuit of national interests, the MoD has accorded utmost importance to achieving self-reliance and indigenization in the field of defence production, to inter-alia address the security challenges in the immediate neighbourhood. Towards achievement of the same, the DDP / MoD has laid down an export target of Rs. 35000 crore by 2025, in which our Def Wings abroad have been incorporated to play a pivotal role. In order to empower the Def Wings and to boost defence exports ushering in a transition from ‘Make in India’ to ‘Made for the World’, HQ IDS actively interfaced between the Def Wings & the DDP by issuing advisories, facilitating allocation of promotional funds to the Def Wings, seeking feedbacks from Def Wings and making suitable recommendations to the DDP on the subject.

Human Resource Management

Joint Promotion Board Policy for the Services: Common guidelines for the Services for conduct of promotion boards promulgated.

Tenant Joint Staff Assignments for Career Progression: Policy for making Tri Services tenures mandatory for promotion to Two Star rank in General Cadre was promulgated in September 2020 to the three Services.

Adoption of E-SeHAT (Tele Medicine Consultation), E-Aushadhi & E-Upkaran (Medicines & Store Inventory Management System) in the Services: The current pandemic has accentuated the need to exploit fully modern technology in the health care sector for the personnel of the Armed Forces too. In this regard, E-SeHAT has been customized & secure internet based tele medical consultation application was developed by HQ IDS in collaboration with CDAC Mohali. Contract agreement for final implementation of this project is currently under negotiation while E-Aushadhi & E-Upkaran are nearing initial rollout of the projects.



Humanitarian Aid and Disaster Relief (HADR)

The Armed Forces provided Humanitarian Aid and Disaster Relief during the following natural calamities:



AMPHAN: Indian Army provided 24 columns, 6 IN Ships were deployed along with two IAF C-130 aircrafts.

NISARGA: 40 Teams of Indian Army were on standby, 5 IN Ships were deployed with 11 Teams standby. Air Force airlifted 5 NDRF Teams

NIVAR: Six teams of Indian Army, HADR Bricks on board 3 IN Ships, 6 Diving & 18 Rescue Teams of IN and 5 Aircrafts & 8 Helicopters of IAF were on standby.

Anti Locust Ops: Two IAF Mi-17 helicopters were modified and utilised.

Dousing of Forest Fire in Dzouko Valley: IAF conducted 130 sorties comprising of 142 flying hours, with employment of 6 MI-17 Helicopters & 2 IA Teams.

In response to environmental hazards caused by grounding of a tanker at sea, assistance was provided to Mauritius in August – September 2020 by the IN.

Assistance was also provided to Sri Lanka in fire fighting, salvage & towing ops off the East Coast of Sri Lanka by the IN.

Response To National Efforts : Covid-19 Pandemic

The highlights of the activities undertaken by the Armed Forces in 2020 in response to COVID 2019 pandemic are as under:

182 Indians were evacuated by the IAF from Iran and Wuhan, China.

Quarantining facilities were established at 21 locations for 7000 evacuees. A total of approximately 3500 Indian evacuees from China, Italy, Malaysia, US, Middle East countries were quarantined at Manesar (Gurugram), Jaisalmer, Jodhpur, Mumbai, Hindon (Ghaziabad), Chennai, Bhopal, Hyderabad, Kochi and Bhatinda.

19 COVID Hospitals and 31 mixed hospitals were nominated as dedicated COVID hospitals for national COVID pool, catering to approximately 10,000 patients.

Approx 3,17,374 tests were concluded in Armed Forces COVID testing labs at 21 locations across the country.

IAF assisted the civil administration, for transshipment of essential medical load. Approx 560 sorties (728 flying hours) carrying 798 Tonnes of load for COVID related items and personnel were carried out by the IAF.

IN ships have assisted in evacuation of approximately 4000 Indian nationals from Maldives, Sri Lanka & Iran. Assistance was also provided in ferrying of food grains to various nations in the IOR.



International Outreach: As part of International outreach, following activities were undertaken:



Aid to Delhi Government: Armed Forces assisted in operation of three medical facilities as under:



Aid to Bihar Government: Armed Forces have established 500 Bed (each) Hospitals at Patna and Muzzafarpur from September 2020 to January 2021, to assist the State Government in management of COVID cases.

PM CARES Fund: Approximately Rs. 186 crore was contributed by the three Services to PM CARES Fund.



Defence Research and Development



सत्यमेव जयते

रक्षा मंत्रालय
MINISTRY OF
DEFENCE

Defence Research and Development

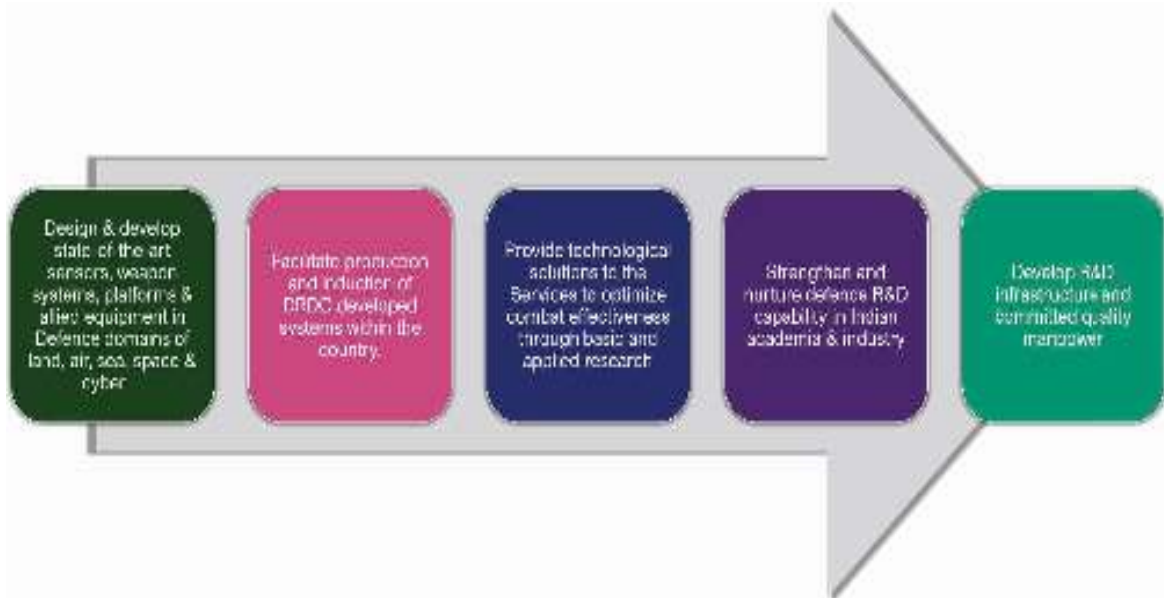


Background

Defence Research & Development Organisation (DRDO) with its spectrum of technologies and systems encompassing the entire range of Defence requirements, is a force behind self-reliance for critical defence equipment. DRDO has identified nine thrust areas for its research.



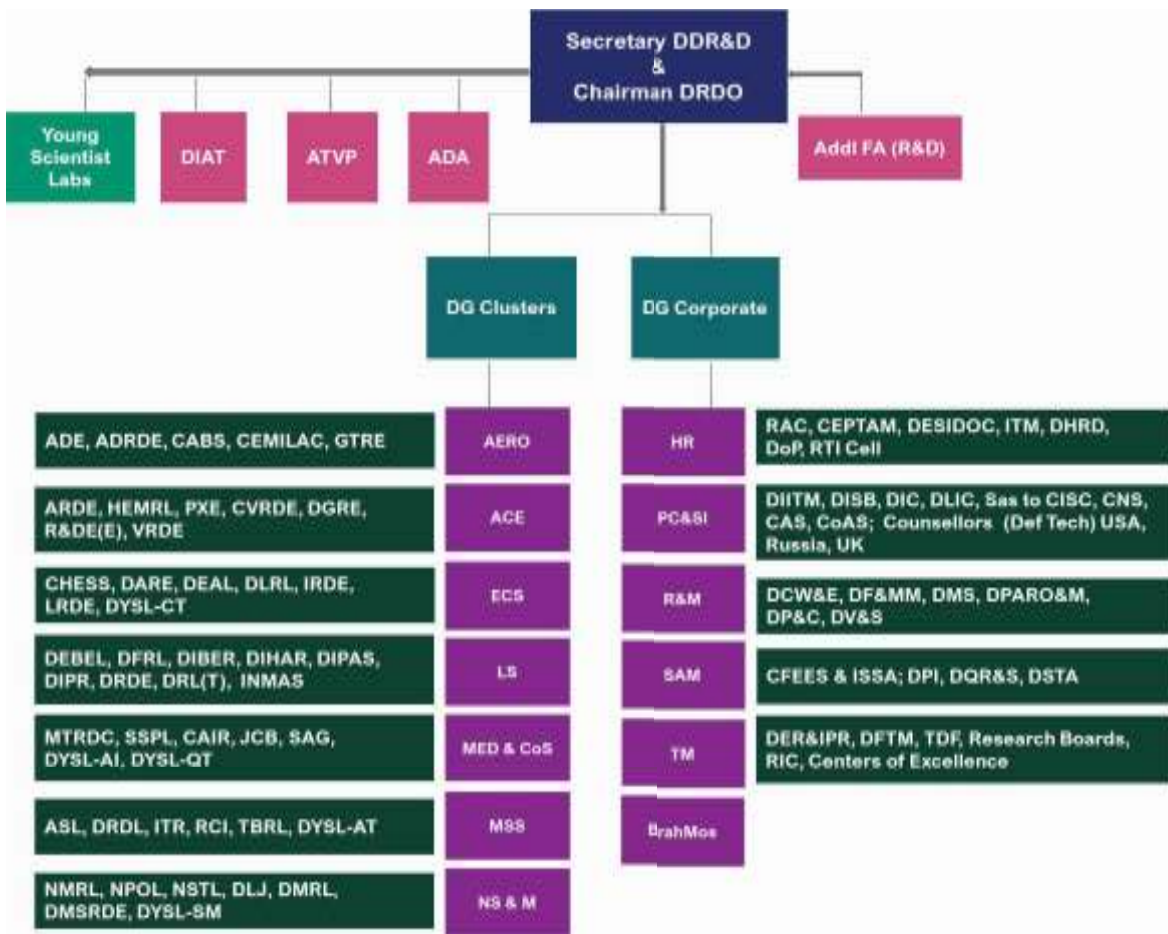
DRDO's mission essentially covers the following broad activities:



DRDO has worked closely with Ordnance Factories (OFs), Defence Public Sector Undertakings (DPSUs), large-scale private industries, Micro Small and Medium Enterprises (MSMEs), and academia to develop products and systems for induction into the Services. Besides, DRDO collaborates with other S&T organisations like the Department of Space (DoS), Department of Atomic Energy (DAE) and Council of Scientific and Industrial Research (CSIR) for common requirements and applications.

Organizational Structure

DRDO is headed by Secretary DD R&D & Chairman DRDO. Its labs are grouped into seven technology clusters each headed by a cluster Director-General. DRDO headquarters (HQ) at Delhi, which coordinates the overall functioning of the organisation, is an interface between the Government and the cluster HQs and laboratories. There are five corporate DGs to oversee the activities of the HQ. A snapshot of organisation structure of DRDO is shown as under:



Manpower

DRDO has a total strength of 22,628 employees, out of which 6,946 are in Defence Research and Development Services (DRDS); 8,689 in Defence Research and Technical Cadre (DRTC); 330 Service officers, 1731 Service personnel and 4,932 are in Admin & Allied Cadre.

Budget

During the financial year 2020-21, DDR&D was allocated Rs. 19,327.35 crore (BE), about 5.73% of the total Defence Services Estimates Budget. A total of Rs. 10532.87 crore was allocated under Capital head and Rs. 8,794.48 crore under Revenue head.

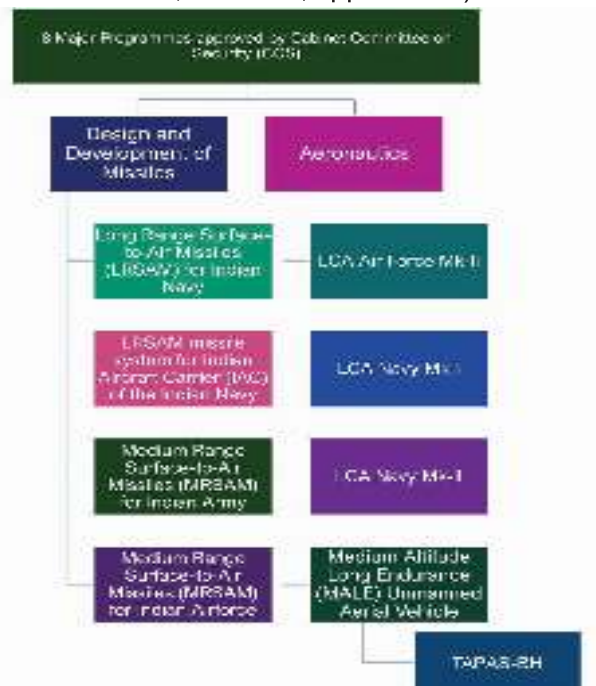
Programmes and Projects

DRDO projects are categorized as follows:



During the period (January – December 2020), 83 new projects were sanctioned at a total cost of Rs. 5,220 crore. DRDO currently has 410 ongoing projects (excluding strategic projects) amounting to Rs. 70,704 crore (DRDO share: Rs. 3,9594 crore, approx 56 %). Out of 410 ongoing projects, 55 large projects (cost \geq Rs. 300 crore) have a cost of Rs. 48,998 crore.

There are 8 major programmes approved by Cabinet Committee on Security (CCS) amounting to Rs. 41,553 crore (DRDO share: Rs. 12,010 crore, approx 29%).



The production value of DRDO developed systems (inducted and approved for induction) as on date stands over Rs. 3 Lakh crore.

AoN of Major systems worth above Rs. 30,000 crore were approved in 2020. The list includes Long Range-Land Attack Cruise Missile, Brahmos for P-15B destroyers, Airborne Early Warning & Control (AEW&C) Mk-II, Smart Anti-Airfield Weapon, 125 mm Tank Ammunition, Pinaka Rocket Ammunition, USHUS ver 2 for IN submarine 'Sindhughosh', Software Defined Radio (Manpack), Electronic Warfare (EW) System for Plains and Deserts, 'Nayan' COMINT System, Weapon Locating Radar for Mountains.

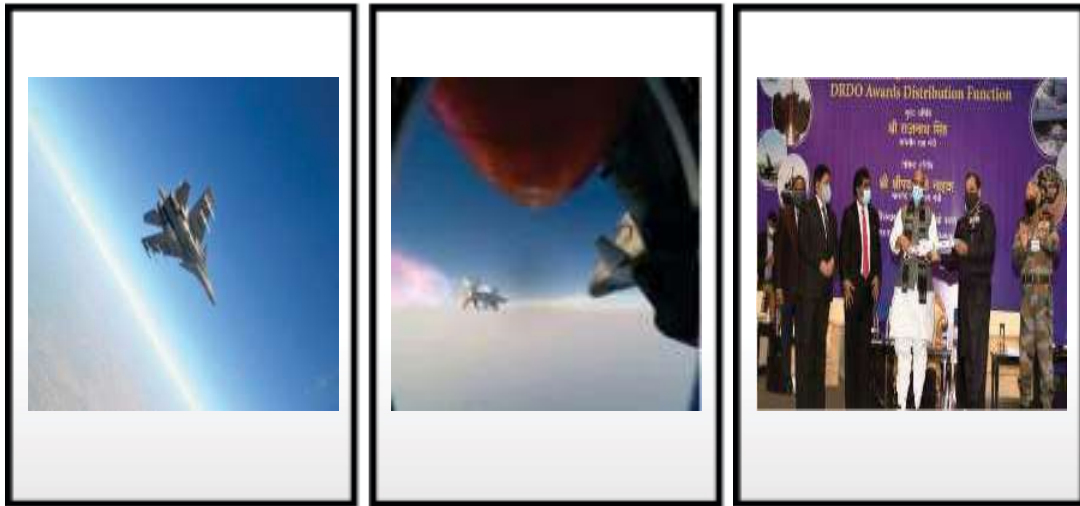
Recently, AoN of Major systems worth Rs. 13,700 crore was approved on February 23, 2021. The systems include Main Battle Tank Arjun Mk 1A, Kalyani M4 armored vehicles, Nag anti-tank missiles, modified Nag Missile Carriers/ Namica, Medium power RADARs called Arudra, and practice ammunition for T-90 and T-72 tanks.

The year 2020 – 2021 witnessed several significant achievements in DRDO projects, some of which are detailed in succeeding paragraphs:

Main Battle Tank MBT Arjun Mk-1A: The MBT Arjun Mk-1A is incorporated with many versatile and improved features over Mk-1, which makes it a much more superior battle tank. Crew comfort, advanced land navigation system and enhanced night vision capabilities for both, tank commander and driver are some of the progressions. It is a highly potent and dependable war-fighting machine. The MBT 'Arjun' Mk-1A has been handed over by Prime Minister to the Indian Army on February 14, 2021. AoN for 118 Nos MBT Arjun Mk-1A worth Rs. 8350 crore was accorded by the DAC on February 23, 2021.



Beyond Visual Range Air-to-Air Missile 'Astra': Development of beyond visual range air-to-air missile (BVRAAM) 'Astra' with modern guidance and navigation techniques is complete. The missile possessing high single-shot kill probability has mid-course guidance and RF seeker-based terminal guidance to achieve target destruction of highly maneuvering supersonic aerial targets. Astra was successfully flight tested from Su-30MKI platform off the coast of Chandipur, Odisha. Raksha Mantri handed over the Air-to-Air missile to the Indian Air Force in December 2020.



Medium-Range Surface-to-Air Missile (MRSAM) for Navy: MRSAM is a joint development programme of DRDO and Israel Aerospace Industries (IAI), Israel for the Indian Navy. It uses a dual-pulse rocket motor and active Radar seeker in terminal phase and inertial/mid-course update for guidance. The weapon system would provide a point and area defence for three P15 A ships of the Indian Navy against a vast variety of aerial threats including fighter aircraft, subsonic and supersonic missiles, etc. Final production batch of MRSAM for IN (LRSAM) was flagged off in February 2021.



Vertical Launch Short Range Surface to Air Missile (VL-SRSAM): The missile is developed for the Indian Navy, for neutralizing various aerial threats at close ranges including sea-skimming targets. Two vertical launches of the missile were carried out on February 22, 2021 from Integrated test Range (ITR), Chandipur off the coast of Odisha. On both occasions, the missiles intercepted the simulated targets with pinpoint accuracy. The missiles were tested for minimum and maximum ranges.



Hypersonic Technology Demonstrator Vehicle (HSTDV): HSTDV is an unmanned scramjet technology demonstration hypersonic vehicle. The hypersonic air-breathing scramjet technology was successfully demonstrated through the flight test of HSTDV from Dr APJ Abdul Kalam Launch Complex at Wheeler Island, off the coast of Odisha in September 2020. With the successful demonstration of HSTDV, many critical technologies such as aerodynamic configuration for hypersonic maneuvers, use of scramjet propulsion for ignition and sustained combustion at hypersonic flow, thermo-structural characterization of high-temperature materials, separation mechanism at hypersonic velocities, etc. were proven.

Supersonic Missile Assisted Release of Torpedo (SMART): DRDO has taken up a project to develop and demonstrate a missile-assisted release of lightweight anti-submarine torpedo system for ASW operations far beyond torpedo range. During the year, SMART was successfully flight tested in October 2020 from Wheeler Island off the coast of Odisha. All the mission objectives including a flight up to the range and altitude, separation of the nose cone, the release of torpedo, and deployment of velocity reduction mechanism (VRM) were perfectly met.



Akash New Generation (Akash-NG): Akash - NG is a new generation surface-to-air missile meant for use by IAF intending to intercept high maneuvering low RCS aerial threats. The maiden launch of the Aakash – NG missile was conducted by a joint team of DRDO, BDL and BEL from ITR, Chandipur, Odisha on January 25, 2021. The missile intercepted the target with precision, meeting all objectives by performing high maneuvers during the trajectory.



New Generation Anti-Radiation Missile (NGARM): NGARM is the first indigenous air-launched anti-radiation missile with a dual seeker system being developed. The missile is a potent weapon for IAF for suppression of enemy air defence effectively from large stand-off ranges. It is designed to be launched from Su-30 aircraft and uses a dual-pulse propulsion system. Indigenously developed, passive homing head seeker and an active MMW seeker have been developed and are used along with IN-GPS for mid-course and terminal phase guidance. The weapon was successfully flight tested from Su-30 MKI aircraft in October 2020 onto a radiation target located on Wheeler Island off the coast of Odisha.



for IAF for suppression of enemy air defence effectively from large stand-off ranges. It is designed to be launched from Su-30 aircraft and uses a dual-pulse propulsion system. Indigenously developed, passive homing head seeker and an active MMW seeker have been developed and are used along with IN-GPS for mid-course and terminal phase guidance. The weapon was successfully flight tested from Su-30 MKI aircraft in October 2020 onto a radiation target located on Wheeler Island off the coast of Odisha.

Quick Reaction Surface-to-Air Missile (QRSAM): QRSAM is a land-based on-the-move air defence system being developed for the Indian Army. The system is capable of engaging multi-directional targets with search and track on move capability and firing on short halts. The missile is highly agile and can handle highly maneuverable aerial threats. The missile uses all indigenous sub-systems. Developmental trials of the weapon system were successfully completed in November 2020.





Third Generation Helicopter Launch Anti-Tank Guided Missile

(‘HeliNa’/Dhruvastra): HeliNa is a 3rd generation helicopter launch anti-tank guided missile (ATGM) with Lock-On-Before-Launch (LOBL) capability for integration on Advance Light Helicopter (ALH). Joint User trials of Helina (Army Version) and Dhruvastra (Air Force Version) were completed on February 19, 2021 at Pokhran. This is one of the most advanced anti-tank weapons in the world.

Anti-Tank Missile (PROSPINA): 'Nag', with day and night capabilities can engage highly fortified enemy tanks. It is a Lock-On-Before-Launch (LOBL), fire and forget class anti-tank missile and uses an indigenously developed IIR seeker in LOBL mode. The missile is launched from tracked Infantry Combat Vehicle (ICV) called the Nag Missile Carrier (NAMICA). Final User Trials were successfully completed by the Indian Army in October 2020 from the Pokhran range.



Stand-off Anti-Tank (SANT) Guided Missile: DRDO is involved in the design, development and technology demonstration of Stand-off Anti Tank (SANT) guided missile. Control and Guidance trials of the missile were carried out at ITR Chandipur in October 2020. During the trials, the missile successfully reached the designated target point and met the desired flight trial objectives.

Man-Portable Anti-Tank Guided Missile (MPATGM):

MPATGM is a 3rd generation ATGM with 'Fire & Forget' and 'Top Attack' capabilities, which can be used by day and night. Design & development of MPATGM weapon system is undertaken for deployment by Infantry and Parachute Battalions of the Indian Army. It is intended to be a replacement for 2nd generation MILAN & Konkurs ATGMs, in service with the Indian Army. Guided Flight Trials of the system were carried out in September 2020 followed by Final User Trials of the system with warhead was carried out in October 2020 at Pokhran.



Anti-Tank Guided Missile (ATGM) for MBT Arjun

Mk-II: ATGM Project is aimed at developing a laser-guided anti-tank missile that can be launched from MBT Arjun Mk-II gun barrel and thus empowering the MBT with missile firing capability. During the year, firing trials of ATGM including DRDO developed Laser seeker and Laser Designator cum Range Finder (LDRF) was conducted at KK Ranges, Ahmednagar in September and October 2020. During the trials, the dual thrust propellant system for the main motor and ejector charge propulsion for launching performed satisfactorily.

Smart Anti-Airfield Weapon (SAAW): SAAW is a class smart weapon capable of engaging ground enemies airfield assets such as radars, bunkers, taxi tracks, and runways, etc., The high precision-guided bomb is light weight as compared to weapon systems of the class. DRDO successfully conducted a captive and release trial of indigenously and release trial of indigenously developed SAAW from Hawk-1 of Hindustan Aeronautics Limited (HAL) off the Odisha Coast on January 21, 2021. The launch met all mission objectives.

Long Range Glide Bomb (LRGB): The project involves design, development, and validation of conventional warheads viz. blast pre fragmentation (PF) & penetration-cum-blast (PCB) for proven glide bombs, glide-W (Gaurav) & Glide-NW (Gautam). Mechanical configuration reviews for Electrical Integration, Structural design review of all configurations of LRGB were completed during March 2020. On Board Computer (OBC) in loop test was also established during November 2020.

Supersonic Cruise Missile 'BrahMos': 'BrahMos' is a two-stage precision strike weapon operating on fire and forget principle, which can be launched from multiple platforms against land and sea targets. Developed by India and Russia, the versatile BrahMos has been operationalised in the Indian Armed Forces with all three Services. The missile was flight tested from ITR Chandipur in September 2020. The missile was also flight tested from Indian Navy's indigenously built stealth destroyer, hitting a target in the Arabian Sea in October 2020. A subsequent Test Firing with BrahMos Missile in Anti-Ship mode was successfully carried out by the Indian Navy in December 2020.



The missile performed highly complex maneuvers and hit Bull's eye of the target.

Light Combat Aircraft (LCA) 'Tejas' Mk-1A: LCA Tejas is India's first indigenous multi-role fighter aircraft designed and developed to meet the requirements of the IAF. LCA Mk-1A is the new variant of the LCA Mk-1 variant of the fighter to enhance its performance and improve its maintainability. The enhanced features of LCA Mk-1A include Active Electronically Scanned Array (AESA) radar, podded self-protection Electronic Warfare (EW) jammer, improved missile capabilities, avionics upgrade, etc. It is an advanced technology, supersonic, lightweight, all-weather, multi-role fighter aircraft designed for multiple combat roles. Contract for 83 LCA Tejas was placed in February 2021.



Naval Light Combat Aircraft: Naval Light Combat Aircraft (LCA Tejas) is an advanced technology, supersonic, lightweight, all-weather, multi-role fighter aircraft designed for multiple combat roles. Two prototypes of the Naval version of the LCA, Navy Trainer (NP1) and Navy

Fighter (NP2) successfully undertook maiden arrested landing and ski-jump take-off onboard INS Vikramaditya during January 2020. Both the aircraft conducted a total of 18 ski-jump take-off and 18 arrested landing onboard INS Vikramaditya in five days.



Medium Altitude Long Endurance (MALE) Unmanned Aerial Vehicle (UAV) 'TAPAS-BH': TAPAS-BH, a multi-mission UAV is being developed with an endurance of 24 hours to carry out intelligence, surveillance, and reconnaissance (ISR) roles for the three Armed Forces. Three flight trials were carried out in December 2020, using AF-6A for evaluation of Long Range Electro-Optic (LREO), Electronic Intelligent (ELINT), and Synthetic Aperture Radar (SAR) payloads. Maximum range of 75 km, maximum the altitude of 15,000 ft and maximum duration of 3 hrs 30 min was achieved during the trials.



High-Speed Expendable Aerial Target (HEAT) 'Abhyas': HEAT 'Abhyas' is an expendable high-speed unmanned aerial target, being developed by DRDO. The configuration of Abhyas is designed on an in-line small gas turbine engine and uses an indigenously developed MEMS-based navigation system for its navigation and guidance. Open-loop launches were carried out in June 2020. Three successful flight trials of Abhyas were conducted in September 2020 from ITR Balasore, Odisha.

During the test campaign, the User requirements were successfully achieved. The vehicle can be used as the target for the evaluation of various missile systems.

Advanced Towed Artillery Gun System

(ATAGS): ATAGS is an all-electric drive four-wheeled advanced gun system meeting futuristic requirements of better accuracy, advanced fire control system, extended range, and multiple round simultaneous impact capability with surveillance and sighting systems onboard. Operationally the system is capable of firing existing 155mm



ammunitions held with the Indian Army with higher range, accuracy, and consistency. The gun system is compatible with the Indian Army's command and control network. A series of trials of ATAGS was conducted in December 2020 from PXE Chandipur, paving way for its induction into the Armed Forces. Pre-PSOR Trials were carried out in February,2021 at Sikkim.

Guided Pinaka Rocket System: Guided Pinaka, an INS+GPS guided, canard controlled, precision strike guided artillery rocket system, has been designed and developed by DRDO. The rocket system has the capability of engaging targets in varying ranges with high accuracy at all ranges. User Evaluation Trials of the system were successfully concluded in December 2020.



AHSP Transfer of Pinaka Weapon System from DRDO to DGQA: Pinaka is a free-flight artillery rocket system. Pinaka rockets are launched from a multi-barrel rocket launcher which can launch a salvo of rockets. An important milestone was achieved in September 2020 when Authority Holding Sealed Particulars (AHSP) responsibility of the Pinaka weapon system was handed over by DRDO to DGQA. The AHSP transfer marks the successful establishment of the production of Pinaka systems as well as the successful establishment of quality assurance processes.

Wheeled Armour Platform (WhAP): WhAP is a multi-utility armoured platform with a modular design, configurable for a variety of combat and combat-support roles. User exploitation trials of WhAP were completed at Leh (high altitude) in October 2020. Orders for 6 Nos. have been placed by CRPF.



46m Military Load Class (MLC-70) Modular Bridge:

DRDO has developed a mechanically launched single-span 46m MLC-70 modular bridge with a bridge length variable from 14m to 46m in the step of 6.5m. User & DGQA trials of the system were successfully completed during the year.

Short Span Bridging System-10m:

The vehicle-mounted, multi-span, mechanically launched mobile bridging system is designed for speedy deployment and retrieval under tactical conditions. The 10 m bridging system consists of two foldable bridge segments, a launching system, pier system mounted onto re-engineered 8x8 chassis. The system is capable of negotiation by all in-service vehicles including MBT Arjun. It is also compatible with the Sarvatra bridging system to negotiate intermittent span ranging from 10m to 75m in the step of 5 m as a multi-span bridge. The launching operation is carried out manually or with an electrical system. Out of 102 nos. of production order, 3 nos. of 10 m SSBS have been delivered to the Indian army in January 2021.



Joint Venture Protective Carbine (JVPC):DRDO has designed 5.56x30 mm Protective Carbine which has features like high reliability, low recoil, retractable butt, ergonomic design, single hand firing capability, and multiple Picatinny rails. These features make it a very potent weapon for Counter Insurgency/ Counter-Terrorism operations by security agencies. Final phase user trials were successfully concluded in December 2020 meeting all GSQR parameters, which has paved way for its induction into the Services. JVPC has successfully met the performance criteria of reliability and accuracy in addition to quality trials conducted by DGQA.



Border Surveillance System (BOSS): BOSS is an all-weather electronic surveillance system. The system has been deployed at the northern border area for day and night surveillance. The system facilitates monitoring and surveillance by automatically detecting the intrusions in harsh high-altitude sub-zero temperature areas with remote operation capability.



The system was handed over by Raksha Mantri to the Indian Army in December 2020.

Active Electronically Scanned Array Radar (AESAR) 'Uttam': AESAR 'Uttam' is an airborne fire control radar for our indigenous fighter aircraft LCA 'Tejas'. It is a multi-mode radar that can be configured for fitment on different airborne platforms. Shake-down sorties were completed on modified Jet. During the year, the radar has completed 120 hrs of testing including 25 hours on Tejas in air-to-air mode.



Digital Radar Warning Receiver (Dhruti): DR118 is an analog-digital RWR for Su-30 MKI. It has been developed as a form-fit replacement for the analog version RWR for SU 30 MKI platforms. The receiver provides situational awareness to the pilot about ground-based, air-borne, or ship-borne emitters present in the scenario. Phase-3A trials were successfully completed in August 2020 with satisfactory detection of all ground and air-borne emitters.

EW Systems 'Samudrika' for Capital Ships, Aircraft and Helicopters for Indian Navy: DRDO has taken up the development of a family of seven EW systems which includes three ship-borne systems (Shakti, Nayan & Tushar) and four air-borne systems (Sarvadhari, Sarang, Sarakshi & Nikash). During the year, the 'Shakti' EW system completed system installation and harbor trials in October 2020, and User Flight Trials for the full configuration 'SARANG' ESM system are in progress. All seven systems are at various stages of development.

Internal Radar Warning Jammer (RWJ) System for Jaguar DARIN III Upgrade Aircraft (D-JAG System): D-JAG is an integrated EW system for radar warning and jamming that encompasses Radar Warning Receiver (RWR) and Electronic Communication Measures (ECM) functions. The system intercepts and identifies airborne, ship-borne, and ground-based radars used for target acquisition, tracking, and missile guidance. D&D Aircraft modification for DJAG system installation and the shakedown sortie was completed with LRUs in the installed condition in March 2020. Ground Acceptance Test was completed in June 2020.

Software Defined Radio (SDR): DRDO has developed Software Defined Radios in 5 form-factors Software Define Radio - Naval Combat (SDR-NC), Tactical (SDR-TAC), Airborne (SDR-AR), Manpack (SDR-MP), and Handheld (SDR-HH) to provide wireless secure communication capability to both mobile and fixed forces as required by the Indian Navy. CEMILAC SOFT certified SDR-AR system installation and integration was successfully carried out on 2 Naval Dornier with SDR-AR ground station in March 2020.

Anti Drone System: Tripod mounted compact 2 kW Anti-Drone systems integrated with jammer, Electro-Optical Tracking System (EOTS), and NSG radar was successfully demonstrated to representatives of MHA organization, IAF, Indian Army, and Indian Navy during August 2020. Detection, jamming, and destruction of Drones were successfully demonstrated. The system was deployed for security during Republic Day celebrations 2021.



Laser Dazzlers: The Laser Dazzler developed by DRDO is used as a non-lethal method for warning and stopping suspicious vehicles/ boats/aircraft/ UAVs etc. from approaching secured areas during both day and night. It is capable of dazzle and thereby suppresses the person's/ optical sensor's actions with disability glare in case of non-compliance to orders. It also dazzles and distracts aircraft/ UAVs. A contract was signed between M/s BEL and the Indian Navy in December 2020 for an initial supply of 20 laser dazzlers.

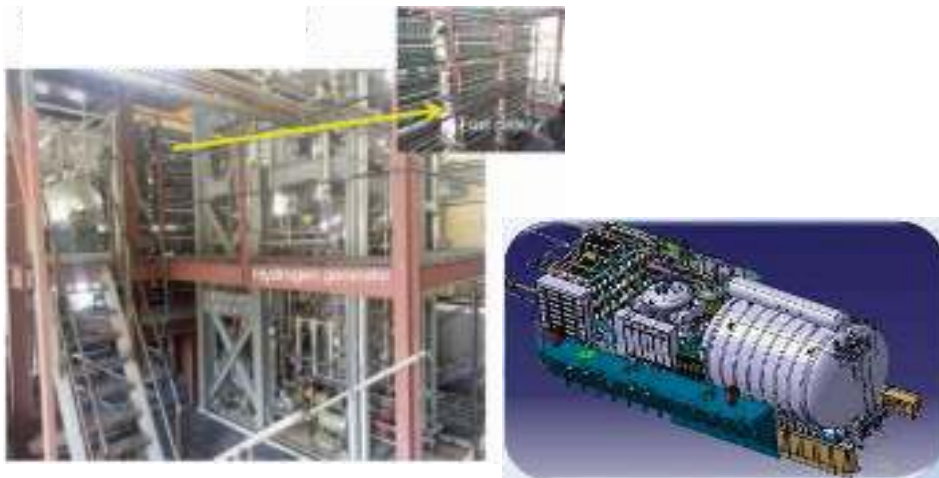
Advanced Light Weight Torpedo (ALWT): Advanced Lightweight Torpedo (ALWT) is an anti-submarine torpedo capable of being launched from helicopter and ship. ALWT has dual speed capability and endurance. Dynamic trials were successfully conducted in November 2020. Consistent performance of vehicle dynamics was established.





Mine Influence Ground Mine (MIGM): DRDO is involved in the design and development of MIGM capable of being triggered by multiple influences viz. acoustic, magnetic, hydrodynamic pressure, electric fields, and seismic vibration. Technical sea trials of the system were conducted in February 2020. During the trials, the advance mode of mine fire logic for target validation and triggering the mine was evaluated by target runs of 3 different ships.

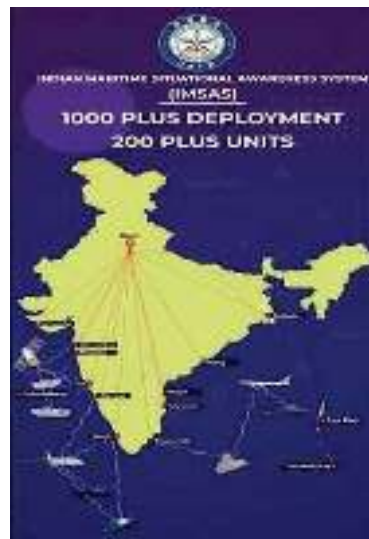
Air Independent Propulsion (AIP) System: DRDO has developed a full-scale Land-Based Prototype (LBP) for demonstration of Hydrogen Fuel cell-based AIP System, which when proved and inducted by the Indian Navy would enhance the underwater endurance of a diesel-electric conventional submarine from 2 days to 14 days. The indigenous AIP system is being developed in collaboration with the submarine designer. The system has successfully completed 14 days of Endurance Trials.



Sahayak Air Droppable Containers: Sahayak is a lightweight air-droppable container fitted with a parachute system designed to carry critical engineering stores for Indian Naval ships at mid-sea. It is dropped from a fixed-wing aircraft near the vicinity of the ship in the sea. These containers can carry spares for ships up to 2000 km away from the coast. The containers would reduce the requirement of ships to be close to the coast for collecting spares and stores, thereby increasing the duration of their deployment. The Sahayak containers would enhance the Navy's operational logistics capability. DRDO along with the Indian Navy conducted the successful maiden test trial of 'Sahayak-NG' in December 2020, meeting all mission objectives.



Indian Maritime Situational Awareness System (IMSAS): IMSAS is a state of art, fully indigenous, high-performance, intelligent, command-control software system that provides Global Maritime Situational Picture, Maritime Analytical capabilities, and planning tools to the Indian Navy. The system incorporates a comprehensive situational picture based on the Indian Navy's requirements. IMSAS Build 1.0 has been deployed across Indian Navy centers. IMSAS interface testing was successfully carried out during November 2020. DRDO delivered IMSAS Build 1.0 to the Indian Navy.



VeriFY Organize Maintain Analyze (VYOMA): DRDO has taken a project to build an easy-to-use information repository with semantic querying facilities, social network analysis, spatial and temporal visualization over digital maps. Delivery of hardware to User was completed in December 2020.

Development of CBRN Water Purification System (WPS) Mk-II: The CBRN Water Purification System Mk-II developed by DRDO for Indian Army involves major process stages like Ultra-filtration, Reverse-Osmosis, Sedimentation, Chemical Dosing, CBRN filter, Process Control, and Instrumentation. Materials for selective absorption/ removal of radioactive contaminants were developed under the project. Acceptance trials on a low temperature and extreme high altitude were conducted at the field area in October and November 2020. User Trials were conducted in December 2020. The army found the system extremely useful and wanted its deployment at field areas to meet the requirements of the large number of soldiers deployed there. The system has been successfully delivered to the Indian Army.



Motor Bike Ambulance ‘Rakshita’: Rakshita is a bike-based casualty transport emergency vehicle, which is designed to alleviate problems faced by Indian Security Forces and emergency healthcare providers. It can provide life-saving aid for the evacuation of injured patients from low-intensity conflict areas. The bike can respond to medical emergencies, faster than a four-wheeler due to its functionality and integrated emergency medical support system.



Rakshita is fitted with a customized reclining Casualty Evacuation Seat (CES). Other major features are the head immobilizer, safety harness jacket, hand and foot straps for safety, adjustable footrest, physiological parameter measuring equipment with wireless monitoring capability, and auto warning system for the driver. Vital parameters of the patient can be monitored

on the dashboard-mounted LCD. Rakshita was handed over by DRDO to CRPF in January 2021, followed by flagging off a contingent of 21 bikes on the occasion.

Quantum Communication: Secure communications are vital for defence and strategic agencies the world over. The distribution of encryption keys from time to time is an important requirement in this context. Sharing of keys over the air or wired links requires encryption, which in turn requires encryption keys to be pre-shared. Quantum-based communication offers a robust solution in sharing the keys securely. DRDO undertook the project for the development of this technology. A milestone of this project was achieved in December 2020 when DRDO developed Quantum Key Distribution (QKD) technology that underwent trials in Hyderabad between 2 DRDO labs, to show secure communication.

Quantum Random Number Generator (QRNG): DRDO Young Scientist Lab (DYSL) for Quantum Technologies has developed a QRNG during the year. It detects random quantum events and converts those into a stream of binary digits. Fiber-optic branch path-based QRNG developed by the lab has passed global randomness testing standards. With this development, India enters the club of countries that have the technology to achieve the generation of random numbers based on the Quantum Phenomenon.

Fire Detection and Suppression System (FDSS) for Passenger Buses: DRDO has developed the FDSS technology as a defence spin-off for providing a solution to the fire incidents in passenger buses. The system can detect the fire in the passenger compartment in less than 30 seconds and then suppress it in 60 seconds thereby reducing the risk to life and property to a significant effect.



Raksha Mantri and Minister for Road, Transport & Highways witnessed the demonstration of FDSS for Passenger Buses at DRDO Bhawan in November 2020.

Demonstrations were given on Water Mist-based FDSS for Passenger Compartment and Aerosol-based FDSS for an engine fire.

Hypersonic Wind Tunnel (HWT) Facility at Shamirpet, Hyderabad: DRDO has established a 1 m diameter HWT facility at Shamirpet, Hyderabad which will be used to generate extensive test data in the hypersonic flight regime which is essential for the design and development of futuristic hypersonic missiles. The facility can simulate Mach numbers from 5 to 12. This state-of-the-art national facility is one of the largest in the world in terms of size and operational envelope which will substantially reduce the development time and cost of futuristic hypersonic missiles of DRDO. After the USA and Russia, India is the only country to have such a large facility in terms of size and operating capability.



The facility was inaugurated and dedicated to the nation in December 2020 by Raksha Mantri.

DRDO Skill Development Centre (SDC) for Fire Safety Training: The SDC was created by DRDO at Pilkhuwa in Uttar Pradesh for imparting prevention and fire fighting training to Fire Services Personnel of Indian Armed Forces, Ordnance Factories, Coast Guard and Defence Undertakings; for developing safety technologies and products to save precious human lives and valuable assets. It is a first of the kind facility in India, adopting state of the art technology and setting up of simulation systems for validation of fire at realistic scale in order to meet the challenges and enhance the skills of Defence Fire Service Personnel and Combatants from the Armed Forces. The SDC was inaugurated on February 22, 2021 by Raksha Mantri.



DRDO MoU with Ministry of Road Transport & Highways (MoRTH): An MoU was signed by DRDO with MoRTH on January 20, 2021 to strengthen collaboration in the field of sustainable geo-hazard management. It has been agreed by both the organizations to utilize expertise of DRDO in providing sustainable mitigation measures to damages caused by landslides, avalanches and other natural factors on various National Highways in the country.

Corporate Initiatives

Fight against Covid-19: DRDO established a 1000 Beds hospital (with 500 ICU beds) in New Delhi [constructed in 11 days] and 500 Bed hospital (with 125 ICU beds) each in Bihita and Muzaffarpur, Bihar. 40 DRDO Labs were involved to develop 50 Technologies. 75 products (including ventilators) were developed and more than 100 ToTs were granted.



Enabling Industry: The present industry base for DRDO consists of 1800 MSMSEs along with DPSUs, Ordnance Factories, and large-scale industries. DRDO has already taken major initiatives through various policies to involve the Indian industry as Development cum Production Partners (DcPP), offering its technology to the industry at nominal cost and providing free access to its patents. Policy for free access of DRDO patents by the Indian industry has been promulgated.

During the year, a total of 260 ToT licenses were signed including 97 for defence and 163 related to Covid-19.

To encourage more participation of the Indian industry, including start-ups and Micro, Small, and Medium Enterprise (MSMEs) in Defence Research & Development, DRDO has rolled out various initiatives. Several industry-friendly policies to support the Govt's aim of 'Vocal for Local' have been initiated.

In response to the call given by Prime Minister for 'Aatmanirbhar Bharat', DRDO identified 108 exclusive systems and sub-systems to be undertaken for development and manufacture only by Indian industry. 1037 Systems/Sub-Systems which can be included in industry friendly/Negative list (for import) was forwarded by DRDO to the Department of Defence Production (DDP). DRDO will provide the necessary support to the industries.

***A new version of DRDO Procurement Manual - 2020 (PM-2020)
was released by Raksha Mantri in October 2020.***

To support the indigenous industry, a requirement of 'Performance Security' for the 'Development Contracts' has been waived off by DRDO. Provision for advance payment of 30% of the contract value is introduced to support the industry. Stage-wise/milestone-based payment mechanisms have been incorporated.

Procedures for 'Access to DRDO Test Facilities' by industries on a payment basis have been formulated and hosted on the website.

DRDO signed an MoU with UP Defence Industrial Corridor in February 2020 to impart skill training, hand-holding, and guiding all aspects related to technology.

R&D in MSMEs/startups is being supported through Technology Development Fund (TDF). 25 projects have been awarded and 50 projects are under sanction.

These initiatives will support the fast-growing Indian defence industrial ecosystem and will help the industry to contribute towards 'Aatmanirbhar Bharat' in a big way.

Enhanced Integration with Academia: DRDO has signed an MoU with two universities in Gujarat i.e Gujarat University, Ahmedabad, and Institute of Technology Research and Management (IITRAM), Gandhinagar for the introduction of Defence Technology courses in their Post Graduate and B.Tech courses respectively and courses have started from February 2021. Discussions were initiated with AICTE for introducing M.Tech courses in Defence Technologies and elective subjects at B.Tech. Certificate course on Artificial Intelligence (AI) and Cyber Technologies for 1000 students to enable them to be future readers. The first batch of both courses with 500 students in each course was successfully completed through Defence Institute of Advanced Technologies (DIAT), Pune. 500 Ph.D. students are expected to work on current problem areas related to defence technologies under the DRDO-MoE Collaborative Program. As of date, 35 research fellows have started working in reputed institutes.

Participation in National & International Exhibitions: During the DefExpo-2020 held in Lucknow, Uttar Pradesh in February 2020, more than 500 indigenously developed products were displayed by DRDO. The products attracted the wider attention of foreign and national visitors.



India : The Emerging Defence Manufacturing Hub

DEFEXPO 20

INDIA 05-08 FEBRUARY 2020 LUCKNOW

Ministry of Defence

DRDO handed over 17 ToTs to industries during DefExpo-2020. Live demonstration of Light Combat Aircraft (LCA) Tejas Mk-1A, Advanced Towed Artillery Gun System (ATAGS), Main Battle Tank (MBT) Arjun Mk-1A, Wheeled

Armour Platform (WhAP), Counter Mine Flail (CMF), and Advanced Modular Bridging System (ACMBS) was carried out.

DRDO developed products were presented to the nation during the Republic Day Parade 2021. Showcasing the major achievements of the year 2020, tableaux of LCA Navy take-off, landing, and lift operations onboard the Aircraft Carrier and tableaux of competing Anti Tank Guided Missiles (ATGM) i.e NAG, HELINA, MPATGM, SANT, LASER guided ATGM for MBT Arjun were displayed during the parade.



During the Aero India Show – 2021, the flying display of the DRDO developed Airborne Early Warning & Control (AEW&C) System, LCA Tejas and LCA Navy were the highlights. Highlights of the indoor display systems included models of Advanced Medium Combat Aircraft (AMCA), Abhyas, Twin Engine Deck Based Fighter (TEDBF), FCS system for LCA and Aerostat Systems,

Nirbhay Missile, AWACS India Aircraft model, Kavery Dry Engine Prototype, Gas Turbine Blade and Pilotless Target Aircraft Engine (PTATE), etc., Full-scale models of various Surface-to-Air missiles like Astra, IRSAM, QRSAM, NGARM and SAAW were also displayed.

DRDO participated in International Defence Exhibition Army-2020 held at Kubinka, Moscow during August 2020. Eleven DRDO products were showcased in this exhibition: Submarine Sonar Suite (SMS-X), Low-Frequency Dunking Sonar (LFDS-X) for Helicopters, Torpedo Advanced Light (TAL), Air to Air missile 'Astra', Helicopter Launch Anti-Tank Guided Missile 'HeliNa', Anti-Tank Missile 'Nag', MBT Arjun Mk-1A, Advanced Towed Artillery Gun System (ATAGS), Ground-based High-Performance Electronic Intelligence (ELINT) system, Air Defence Fire Control Radar (ADFCR) 'Atulya' and Weapon Locating Radar (WLR).

HR Initiatives: DRDO has implemented the Centralised Public Grievances Redress and Monitoring System (CPGRAMS) to review and redress the grievances received on the portal. The disposal rate of grievances for the year 2020 is 98.9% and efforts have been made to improve it further. A monthly report on CPGRAMS is uploaded on **e-samiksha**. Apart from this, 59 grievances related to COVID-19 were received at CPGRAMS and the disposal rate is 100%.



International Co-Operation: DRDO's Endeavour in international cooperation has been to move beyond the buyer-seller relationship to the one which includes significant R&D, Technology/ knowledge acquisition, a technology consultancy, co-development, and co-production.

In the year 2020, DRDO has participated in Bilateral/ Multilateral meetings chaired by MEA, MOD, and DDP.



DRDO has conducted regular annual bilateral Defence R&D meetings in 2020

DRDO participated in International Pandemic Workshop (Online) coordinated by AFRL, US DOD. The primary goals of the workshop were to increase and strengthen international partnership as well as build a network of international technology partners in addressing non-clinical, R&D solutions to this and the future pandemics. The workshop had participation from UK, Australia, Israel, ROK, Hungary, Singapore, Canada, and various DRDO labs. DRDO has facilitated Indo Israel COVID 19 collaboration work for Rapid Detection of the Virus.

During the year, LOI/ MOUs/ IGA/ Projects related to Defence R&D and cooperation have been signed with the Government of Australia, the UK, and Russia

Parliamentary Affairs and Rajbhasha:



Nominations of Records Officer(s) from each Labs/Estt/Unit of DRDO and training them by National Archives of India (NIA) have been completed. Several Video Conferences with Labs/Estts/Units/visits have been organised with departmental Records Officers for the preparation and issuance of the DRDO Records Retention Schedule (RRS) policy.

Total 78 numbers Questions/Inputs have been answered to both the houses of Parliament and other Min/Depts. Two numbers of meetings/visits of Parliamentary Committees (Committee on Govt. Assurance and visit of Chairman 'Standing Committee on Defence') at DRDO HQs to witness the exhibitions concerning critical equipment and Technologies to fight the COVID – 19 pandemics have been concluded.

Implementation of Government Initiatives: Annual action plan for 'Swachh Bharat' has been prepared and various special cleanliness drives, tree plantation, shram-daan & other activities are being carried out with a mission of making DRDO one of the model organisation in this initiative of the Government. As a tool for promoting Digital India, E-procurement across labs has been actively taken-up, E-ticketing through Defence Travel System is being utilized and online review meetings for critical projects are being undertaken through video conferencing between labs and HQ wherein approx 100 meetings are being held on VC every month. DRDO is committed to the

Government's initiative of 'Single-Use Plastic Free' organisation. International Yoga Day was celebrated across all labs.

Conclusion: DRDO has made remarkable strides in establishing self-reliance in complex defence technologies, weapon systems, and platforms. The organization has undertaken various initiatives in alignment with the Government's call for 'Aatmanirbhar Bharat'. In this endeavor, the initiatives and policies rolled by the organization will alongside harness R&D in academia, MSMEs and Start-ups; generate employment in the Indian Industry, and also create an eco-system that can sustain the call for self-reliance in Defence Systems arena.



Department of Ex-Servicemen Welfare



सत्यमेव जयते

रक्षा मंत्रालय
MINISTRY OF
DEFENCE

Resettlement and Welfare of Ex-Servicemen

The Department of Ex-Servicemen Welfare (DESW) formulates various policies and programmes for the welfare and resettlement of Ex-Servicemen (ESM) in the country.



Pension Reforms

Invalid Pension: It has been decided by Government vide order issued on July 16, 2020 that Invalid Pension would henceforth also be admissible to Armed Forces personnel with less than 10 years of qualifying service in cases where personnel are invalided out of service on account of any bodily or mental infirmity which is neither attributable to nor aggravated by Military Service.

Revision of pension of Pre 2006 retiree Honorary Naib Subedars (HNS): A long pending demand of pre-2006 retired Honorary Naib Subedar (HNS) was met by the Government in February 2020 by extending the benefit of revision of pension of post January 1, 2006 retired Havildars who were granted Honorary rank of Naib Subedars w.e.f. January 1, 2006 to pre-2006 retiree Havildars who were granted Honorary rank of Naib Subedars.

Approximately, 75,250 pre-2006 retired HNS have benefited from this decision.

Ordinary Family Pension: It has been decided vide DESW letter dated October 5, 2020 that the conditions of minimum requirement of 7 years of continuous service for grant of enhanced rate of Ordinary Family Pension has been done away with for Armed Forces personnel who died/invalided out even with less than 7 years of qualifying service. Further in case of defence forces personnel who died within ten years before the 1st day of October 2019 without completing continuous service of 7 years, their family shall also be eligible for family pension at enhanced rates w.e.f. October 1, 2019.

Revision of Pension/Family Pension in case of Medical Officers: It has been decided vide order issued on January 22, 2021 by DESW that calculation of pension/family pension of pre-1.1.2016 Medical Officers of Armed Forces who retired/died before January 1, 2016, the Non Practicing Allowance (NPA) at the rate as applicable as on January 1, 2016 shall be added to the already worked out notional pay to arrive at notional reckonable emoluments as on January 1, 2016. It has also been clarified vide DESW letter dated January 22, 2021 that for the purpose of revision of Casualty Pensionary Awards i.e. Disability Pension/War Injury Pension/Special Family Pension/Liberalized Family Pension of the pre-1.1.1996 retired Medical Officers of Armed Forces also, NPA @ 25% shall be added to minimum of scale of pay as on January 1, 1996 while determining casualty pensionary awards w.e.f. January 1, 1996.

Grievance Redressal System

DESW makes concerted efforts to reduce grievances, bring down the disposal time, and promote dialogue and interaction with our ex-servicemen as also to sensitize the RSBs/ZSBs for resolving the grievances of ESM. The Department has a dedicated Pension Grievance Cell to look after the grievances of the ESMs/ Pensioners, which has resulted in better grievance redressal. Overall percentage of disposal of grievances is 97% and the data in this regard are available in the pgportal.gov.in.



Regular follow up and use of technology has resulted in reduction of average disposal time from 87 days in 2014 to 25 days in 2018 and further reduced to 21 days in 2019.

Welfare

KSB Secretariat is the apex body of the Government of India responsible for welfare of war-widows/disabled soldiers, ex-servicemen and their dependents.

Financial Assistance to States: Financial assistance to States as Central share is given by the Department through KSB towards the establishment expenses of Rajya Sainik Boards/Zila Sainik Boards (RSBs/ZSBs). Funding pattern is 75:25 in respect of special category States/UTs, namely, Arunachal Pradesh, Assam, Jammu and Kashmir, Ladakh, Meghalaya, Mizoram, Manipur, Nagaland, Sikkim, Tripura, Himachal Pradesh and Uttarakhand, and 60:40 in the case of other States/UTs.

Government of India also shares 50% cost of construction of Sainik Rest Houses (SRHs) out of the Defence Services Estimates (DSE) Budget. The SRHs are required to be maintained by State Governments/UT Administrations from their own resources/funds.

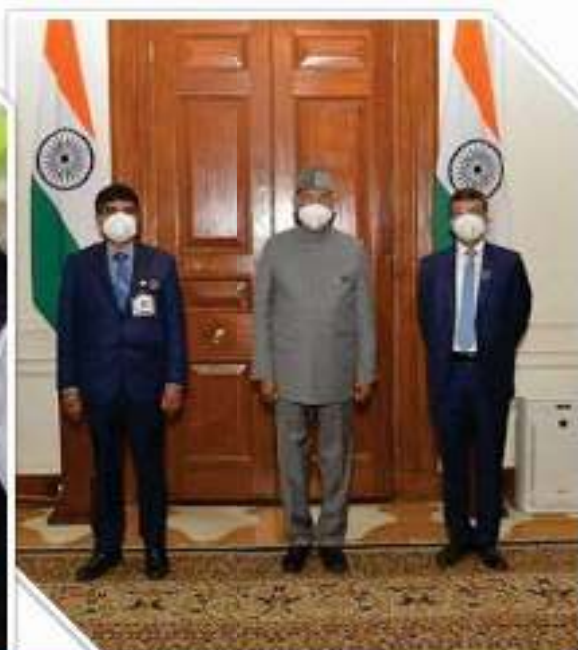
A sum of Rs. 2.20 crore has been disbursed to the States through KSB as Central share up to December 31, 2020.

Armed Force Flag Day Fund: Armed Forces Flag Day Fund (AFFDF) is meant for running schemes for welfare of Ex-Servicemen and their dependents. The fund is administered by KSB and donations to the fund are eligible for exemptions under section 80G of the Income Tax Act, 1961. The fund receives contributions from the Services, Corporate, PSUs and individual donors. The Fund has a corpus of Rs. 305 crore and a portion of the usable income accruing on the Corpus of the AFFDF is earmarked for the Raksha Mantri Ex-Servicemen Welfare Fund (RMEWF) Schemes.

Armed Forces Flag Day is celebrated on 7th December every year across the country to commemorate the sacrifices made by the armed forces. During the month long campaign celebrated this year as “Gaurav Maah” from December 1 to 31, 2020, various activities like telecast of T.V. spots, messages from celebrities/ icons, use of print / social media for creating awareness about the significance of the Flag Day etc. were undertaken.



Secretary KSB pinning AFFD flag to Prime Minister on December 7, 2020



Secretary DE&W with officials of KSB during the pinning AFFD flag to His Excellency the President of India on December 7, 2020

A CSR webinar on December 4, 2020 was organized in association with Confederation of Indian Industries (CII) and Federation of Indian Chambers of Commerce and Industries (FICCI).



Raksha Mantri Ex-Servicemen Welfare Fund (RMEWF) Schemes: Financial assistance under RMEWF is provided from AFFDF for identified personal needs of ESM/their dependents, e.g. Penury Grant, Children Education and Marriage Grants, Medical Grant etc. During the financial year 2020-21 (till December 31, 2020), financial assistance of Rs. 75.25 crore to 24,674 beneficiaries has been disbursed in favour of Ex-Servicemen / their dependents under RMEWF. Besides these, an amount of Rs. 1.24 crore as financial assistance for serious diseases, purchase of modified scooter for disabled and grants to War Memorial Hostels and Paraplegic Rehabilitation Centre at Kirkee and Mohali have also been given from AFFDF.

Prime Minister's Scholarship Scheme (PMSS): A total of 5500 scholarships are awarded annually under this Scheme to the wards and widows of Ex-Servicemen out of National Defence Fund which is administered by Prime Minister's Office. The amount of scholarship w.e.f. Academic Year (AY 2019-20) has been increased from Rs. 2,000/- per month to Rs. 2,500 per month for boys and Rs. 2,250 per month to Rs. 3,000 per month for girls.

An amount of Rs. 28.22 crore has been disbursed to 8485 beneficiaries during the FY 2020-21 (till December 31, 2020)

Reservation of Seats in Medical/Dental Colleges: Ministry of Health and Family welfare increased the quota of Government of India Nominee (MBBS and BDS) seats for the wards of Armed Forces Personnel (Serving/ESM). A total of 35 MBBS and 3 BDS seats were allotted and distributed by KSB for the academic year 2019-20 to the eligible students.

Armed Forces Battle Casualties Welfare Fund (AFBCWF): Vide gazette notification dated May 6, 2020, the nomenclature of the Army Battle Casualties Welfare Fund (ABCWF) has been changed to Armed Forces Battle Casualties Welfare Fund (AFBCWF) and the Scheme has also been extended for the Battle casualties of Air Force and Navy also to include all the three Services. The additional ex-gratia amount has also been enhanced from the existing Rs. 2 lakh to Rs. 8 lakh per Battle Casualties (Fatal), Battle Casualties (Disability 60% and above) and Battle Casualties invalided out due to Disability. For Battle Casualties (Disability less than 60%), the additional ex-gratia amount has been enhanced from Rs. 1 lakh to Rs. 4 lakh per casualty.

MoU with Shree cement: An MoU was signed and executed on October 15, 2020 between Kendriya Sainik Board and Shree Cement Ltd. to provide free cement manufactured at their owned cement plants for building of one house in a plot size area upto 4000 sq.ft. by the next of kin (NOK) of Armed Forces Martyrs (Battle Casualty - Fatal only) during last twenty years i.e. between January 1, 1999 to January 1, 2019.

Participation of ESMs in Government Flagship Programmes

Swachhata Pakhwada 2020: As per the Action Plan, the Department and its attached offices undertook Swachhata Pakhwada Campaign from December 1 to 15, 2020 on the theme of Covid 19 Appropriate Behaviour. Posters and other informational material on the theme were prepared and shared widely with all field Offices/Establishments i.e. DRZs (Directorate Resettlement Zones)/RSBs (Rajya Sainik Boards)/ ZSBs (Zila Sainik Boards)/ Polyclinics etc. Swachhata Pakhwada Awards were also presented by the Secretary ESW to all the participating attached offices for their exemplary work.

Constitution Day: Action Plan to undertake the activities of Constitution day was prepared in respect of the Department and its attached offices. Pledge taking and display of preamble in offices and the department website were done to propagate the message.



Swachhta Awards
Presentation
Ceremony 2020 on
December 18,
2020

Secretary ESW, Joint Secretary ESW,
Secretary KSB and officials of DESW
joined the Prime Minister in reading the
Preamble on November 26, 2020 from
their respective locations



Covid Response: Kendriya Sainik Board (KSB) is coordinating with all the Rajya Sainik Boards (RSBs) and Zila Sainik Boards (ZSBs) and has identified 1,80,000 Ex-Servicemen across the country as useful human resource for capacity building at State / District level, if required. At present, 7,982 Ex-Servicemen volunteers have been requisitioned by various State/UT administrations.

Resettlement

Directorate General Resettlement (DGR) is mandated for re-settlement and rehabilitation of the Ex-servicemen (ESM), Disabled Soldiers, Widows and their Dependents. Due to operational and administrative reason, nearly 50,000 to 55,000 armed forces personnel retire/ are released from active service every year, most of them being in the comparatively younger age bracket of 35 to 45 years and need a 'second career' to support their families. Towards this, Government of India/ Department of ESW/ DGR is operating re-settlement schemes for these ESM/ Dependents.

Pre-Release/ Skill Development Course

Pre-Release/ Skill Development Course: DGR is mandated to organize and conduct Re-settlement Training/ Skill Development Courses for retiring/ retired Armed Forces personnel of all the three Services. These courses are aimed at enhancing their employability in civil/ corporate sector. For Officers, courses are conducted in the field of management while for JCOs/OR and their equivalents in Indian Navy & Indian Air Force, skill based courses are conducted.

Pre-release course for officers: For officers, courses are conducted at IIMs/similar premier management institutes. The duration of these courses varies from 2 weeks to 24 weeks. The fee for officers' courses is shared by the Government and the individual officers in the ratio of 60:40.

Skill Development Courses for JCOs/OR and their Equivalents in IN & IAF: Skill Development Courses for JCOs/ OR and their equivalents in Indian Navy (IN) and Indian Air Force (IAF) are conducted at various Government Institutes or National Skill Qualification Framework (NSQF) aligned Private Institutes pan India for a maximum duration of one year. Entire expenditure of the course fee for the ibid courses is borne by Government of India/ Ministry of Defence. Towards this, the following initiatives have been undertaken:

Project 'PUNAH-STHAPAN'

- Project 'PUNAH-STHAPAN' was conceptualized and initiated to be completed in three phases. Phase I has already been completed and included Competency Mapping of Human Resources in Indian Armed Forces. Phase II is under process and involves Comprehensive Study on Civil Sector Employability and Skill Gap Analysis. Phase III will be completed after completion of Phase II and will Re-design Skill Development Courses to Bridge the Identified Skill Gap.

MoU between MoD and MSDE

- The National Skill Development Mission launched by Ministry of Skill Development and Entrepreneurship (MSDE) on July 15, 2015 aims to create convergence across states and sectors in terms of skill training activities. Considering that continued utilization of the acquired individual skills, of the Armed Forces personnel, even after retirement could contribute positively to the National Skill Development Mission, a MoU was signed between MoD and MSDE on July 13, 2015 for an initial term of 5 years concluding on July 12, 2020. The same has now been renewed for further period of five years.

Employment Opportunities in Central Government for ESM: Central Government has provided following reservations quota in Government jobs for ESM towards their Re-settlement:

10% of the vacancies in the posts up to the level of the Assistant Commandant in all Para-Military Forces (CAFF).
10% of the vacancies in Group 'C' Direct Recruitment posts and 20% of the vacancies in Group 'D' Direct Recruitment posts in Central Government Departments.
14.5% vacancies in Group 'C' posts and 24.5% vacancies in Group 'D' posts (including 4.5% for disabled ESM dependents of servicemen killed in action) in Central Public Sector Undertakings.
14.5% vacancies in Group 'C' posts and 24.5% vacancies in Group 'D' posts (including 4.5% for disabled ESM dependents of servicemen killed in action) in Public Sector Banks.
100% in Defence Security Corps (DSC)

Registration for Employment: A total 4068 (January-December 2020) personnel were sponsored for permanent/ contractual jobs (except self-employment schemes) through DGR and RSB/ZSBs.

Security Agency Scheme: This is a 'Flagship' project of DGR that offers maximum employment to ESM. ESM (officers) are the proprietors of the ibid scheme with JCOs/ OR and their equivalent in IN/ IAF as Security Supervisor/ Guard. A total of 625 Security Agencies have been empanelled during the year by which 32,469 ESMs were provided employment under the Scheme.



Schemes for Self-Employment

Employment opportunities through DGR: DGR operates re-settlement schemes for retired Officers, JCOs/OR and their equivalent in Indian Army (IA)/ IAF, Disabled Soldiers, Widows and their Dependents for their employment and welfare. The major schemes and the number of beneficiaries of these Schemes is tabulated below:

S.No.	Scheme	No of Beneficiaries (From 1.1.2020 to 31.12.2020)
(i)	Coal Transportation Scheme and Tipper Attachment	172

(ii)	Mother Dairy Milk Booth and Fruit & Vegetable (Safal) Shop	333
(iii)	Management of CNG Station by ESM(Officer) in Delhi/NCR and Pune	40
(iv)	Issue of DGR Eligibility Certificate for Allotment of LPG/Retail Outlet (Petrol/Diesel) against 8% Reservation Quota	7
(v)	Management of Company Owned Company Operated (COCO) Retail Outlets	139

Ex-Servicemen Job Fairs: Based on the Memorandum of Understanding (MOU) signed between DGR and the Confederation of Indian Industry (CII) in August 2014 and FICCI in January 2020, Ex-Servicemen Job Fairs are being organized Pan India by DGR with the support of all the three Services. Approximately, 971 Corporate Houses / PSU's and 35,118 ESM have participated in the said Job Fairs till date. The following Job Fairs were organized in the year 2020:

Sl. No.	Venue	Date	Participation		Job Vacancies Offered	ESM Shortlisted
			Corporate Employers	ESM		
(a)	Bengaluru	February 19, 2020	49	904	1945	569
(b)	Jaipur	February 28, 2020	35	2200	765	1093
Total			84	3104	2710	1662

Major Achievements during the year

Scheme for Technical Services: Guidelines have been issued on February 6, 2020 for the Scheme to provide ESM manpower for 'Technical Services' to Government Establishments/Complexes through DGR Empanelled State ESM Corporations.

Grant of ESM status to SSCOs: Notification regarding grant of ESM status to Short Service Commissioned Officers who took premature retirement after completing initial period of engagement has been issued by DOP&T on February 16, 2020. This notification gives them the status of ESM thereby making them eligible to avail DGR sponsored re-settlement schemes.

MoU with FICCI: DGR has signed an MoU with Federation of Indian Chambers of Commerce and Industry (FICCI) on January 27, 2020 with the aim to generate employment opportunity for Ex-servicemen (ESM) in the civil/ corporate sector. DGR already has an MoU with CII.

Health Care

Ex-Servicemen Contributory Health Scheme (ECHS) ECHS was launched with effect from April 1, 2003. ECHS aims to provide quality healthcare to ESM and their dependents through a network of ECHS Polyclinics, Service medical facilities and civil empanelled/ Government hospitals spread across the country. The scheme has been structured on the lines of Central Government Health Scheme (CGHS) and is financed by the Government of India.

“The total beneficiaries of the Scheme are approximately 55 lakh.”

ECHS Network

At the apex level is the Central Organisation, ECHS located in Delhi. It is an attached office under the DESW and is headed by a serving Major General. There are a total of 30 Regional Centres spread across the country. A total of 433 ECHS Polyclinics including six Polyclinics in Nepal are functional at present. Besides this, there are 1862 civil hospitals empanelled with ECHS, providing cashless treatment to ECHS beneficiaries. The reach extends to Kashmir Valley as well. In case of emergency, members are permitted to avail medical treatment at non-empanelled hospitals on payment and their medical treatment bills are reimbursed at approved (CGHS) rates.

Achievements during the last one year

Simplifying rules to overcome the Shortage of Medical personnel: The Rules regarding employment of contractual employees in ECHS polyclinics have been revised to allow recruitment of doctors and para medical staff on part time basis in order to overcome shortage in these grades, due to non availability of full time personnel (DESW letter dated February 5, 2020).



ECHS polyclinics publicizing the message of cleanliness and Covid appropriate behaviour



Disabled dependants facility under ECHS: In consonance with the provisions laid down by Ministry of Health and Family Welfare dated January 1, 2020, cases of disability in respect of sons of ECHS beneficiaries occurring after attaining the age of 25 years can also be considered as dependents for availing medicare under ECHS subject to fulfillment of certain conditions laid down in Ministry of Health and Family Welfare OM dated May 7, 2018 (DESW order dated July 8, 2020)

AYUSH facilities in ECHS: Ayush OPDs have been Operationalized w.e.f. January 13, 2020 in 4 polyclinics of Delhi & NCR region as a pilot project to provide treatment under Ayush to ECHS beneficiaries in ECHS Polyclinics.

Revision of referral procedure: By Government order dated February 3, 2020, the following provisions followed by CGHS in referral system have been adopted for Ex-servicemen Contributory Health Scheme (ECHS):

- (a) Referral has been simplified by making provision like consultation with Specialist/listed investigation at private empanelled hospitals to be valid for 30 days upto 3 consultations and for 3 different specialists during a single visit.
- (b) Beneficiaries aged 75 years and above may take direct OPD treatment from specialists in private empanelled hospitals.
- (c) Critically ill beneficiaries who have undergone Cardiac Surgery, Organ Transplant or are suffering from Cancer/End Stage Renal Disease/Auto Immune Disorders/Neurological Disorders may take follow up treatment at private empanelled hospitals after getting permission for follow up treatment, but without any need for further validation.



Empowerment & Welfare of Women

Empowerment and Welfare of Women

The role of women has been increasing steadily in the field of national defence. Women are employed in Defence Production Units, Defence Research & Development Laboratories and in the Armed Forces. With the induction of women in various branches of the Armed Forces like flying, logistics and law, a larger role is envisaged for them.

Indian Army



Women Officers (WOs)

- a) **Grant of Permanent Commission to WOs:** In addition to Army Education Corps & Judge Advocate General Branch, grant of Permanent Commission now stands extended to WO's commissioned into Engineers, Signals, Army Air Defence, Electronics and Mechanical Engineers, Army Service Corps, Army Ordnance Corps, Army Aviation Corps and Intelligence Corps.

A total of 507 WO's has been approved of Permanent Commission.

- b) Based on the Hon'ble Supreme Court order stated above, the WSES (Women Special Entry Scheme) officers of 1994 till 2008 batches were considered for the grant of Permanent Commission as a onetime measure. Consequently, sanction of the President was conveyed vide Gol MoD letter no 14(01)/2020-D(AG) dated July 16, 2020 for release of an additional 365 Permanent Commission vacancies for the year 2020 as a special case in order to grant Permanent Commission to Women Officers in Engineers, Signals, Army Service Corps, Army Ordnance Corps, Army Aviation Corps and Intelligence Corps from the affected WSES and Short Service Commission for Women batches.

- c) **Induction of Women Officers in Territorial Army (TA):** The induction of women officers in Department TA units has started with effect from 2019. Three women ex Defence Officers were commissioned in the TA in 2020 via Army HQ Selection Board (ASB)-2019. 13 female candidates had cleared the SSB in PIB-2019 and process of grant of commission is under process as per vacant positions and merit. Additionally, one female candidate had been shortlisted for commission in TA via ASB-2020.
- d) **Women as Sepoy in Corps of Military Police (CMP):** A proposal for introduction of women in CMP was moved by Indian Army in December 2017. A Government Sanction Letter was issued on February 14, 2019. 107 women military police are currently appointed to various field and peace stations across the nation.

Indian Navy

The Indian Navy is committed to the welfare, well-being and dignity of the women. It is a constant endeavour of Indian Navy to provide maximum support to women employees and women family members in order to maintain high morale and motivation at all times. IN has taken concerted efforts to ensure empowerment of women employees and their active participation in activities/work at respective units. The following measures have been implemented to ensure women empowerment and safe working environment for women employees:



Women Officers as Defence Attaché

Lt Cdr Karabi Gogoi, an officer from the Naval Constructor cadre, is the first woman Naval Officer to be appointed as an Assistant Naval Attaché at a mission abroad. She has been posted as the Assistant Naval Attaché at the Indian Embassy in Moscow.



First Naval Woman Officer as Defence
Attache Lt.Cdr. Karabi Gogoi

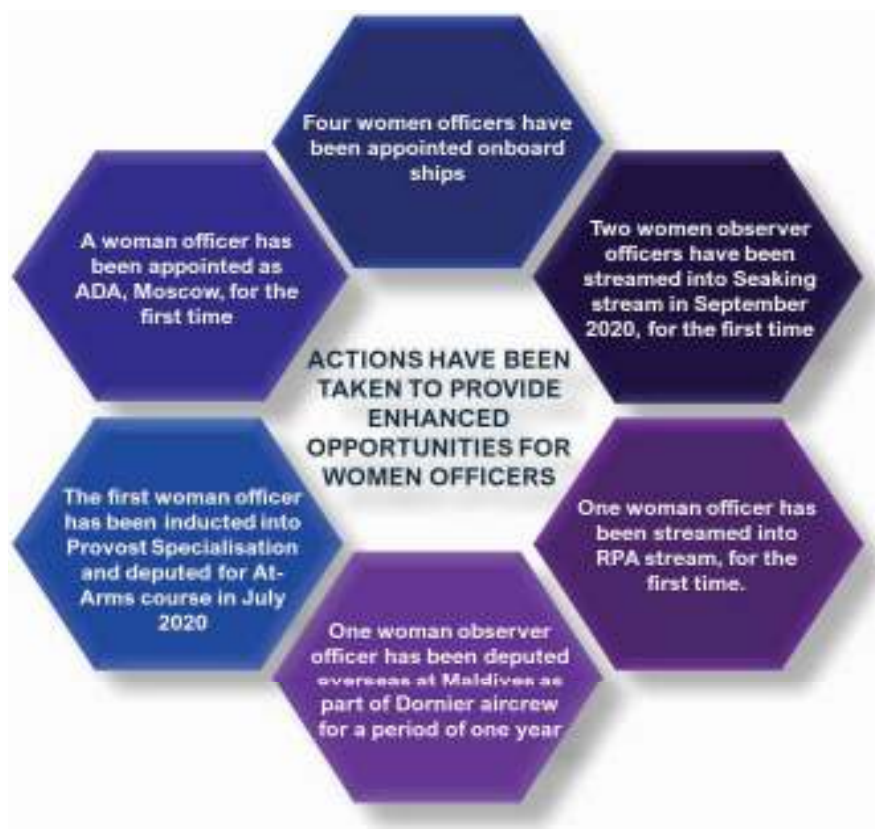
Women Officers in Combat Role



In yet another first in history of naval aviation, two women officers, SLT Kumuduni Tyagi and Lt Riti Singh were selected as observers (Navigators) in the helicopter stream and cleared for Seaking 42B helicopter. They would in effect, be the first set of women officers who will be operating from helicopters embarking onboard warships for undertaking MR and ASW missions. Earlier, entry of women was restricted to the fixed wing aircraft that took off and land ashore. The women officers

were awarded golden wings along with other officers of the Observer course, in a ceremony conducted at Southern Naval Command, Kochi on September 21, 2020.

Enhanced Opportunities for Women Officers



Gender sensitisation among personnel and employees is carried out on a regular basis during Divisional Officer's Periods, and interaction with the Commanding Officer. Regular meetings are conducted to resolve any issue pertaining to the women employees and their specific requirement, if any. All out efforts are taken to provide conducive and safe working environment to the women staff members.

In addition to existing avenues viz. Logistics, Law, Observers, ATC, Pilot (MR Stream), Naval Armament Inspectorate Cadre, Naval Architect and Education Branch, induction of women into additional specialisations viz. Sports and Musician has been opened wef March 2019. Presently, women are being inducted into the Navy, as Short Service Commission (SSC) officers in the Executive [Observer, Pilot in Maritime Reconnaissance stream, Naval Armament Inspectorate Cadre, Air Traffic Controllers (ATC), Law, Logistics, Sports, Musician and Provost (In-service)], Education Branch and the Naval Architecture of the Engineering Branch.

NWWA Activities

Navy Wives Welfare Association (NWWA) plays a crucial role for empowerment and welfare of women. Towards these various activities were undertaken



NWWA Milan are being organised in all stations on various occasions which includes Orientation Capsule for newly wedded ladies, New Year Celebrations, Environmental initiatives, Diwali Celebrations, Screening of motivational movies, Yoga workshop among many other activities.



Medical check-up camp are conducted on regular basis during which ladies undergo the preventive health check-up which includes Bone density, Eye Checkup and Vitamin deficiency tests etc.

Indian Air Force



Women in Indian Air Force

- a) **Women Short Service Commission (SSC) Officer as Fighter Pilots:** The experimental scheme for introduction of women as Short Service Commissioned Officers in the fighter stream of flying branch in IAF was introduced in December 2015. The first batch of women

SSC Officers in fighter scheme was commissioned in June 2016. As on date, 12 women SSCOs have been commissioned in fighter stream. Out of these twelve, eleven are posted to operational fighter squadron such as Rafale, Hawk, Su-30 and Mig-21 Sqn. Remaining one Officer is undergoing stage III fighter training.

Women officers are also posted as pilots in newly inducted transport aircraft such as C-17 & C-130

- b) **Women Flight Test Engineer:** In a landmark event in the history of Indian aviation, in May 2020, one women officer has been selected for training as Flight Test Engineer. Post training, the officer will plan and conduct flight tests in various fighter and transport aircraft as Flight Test Engineer.
- c) Women officer are posted as Chief Administrative Officers at AF bases, Flight Commander of combat Flying Units, Commanding Officers of Signal Units/ Transportable Radar Units and Senior Air Traffic Control Officers at important flying bases of IAF at par with their male counterparts.
- d) Women officers are posted as Principals of Sainik Schools. Women officers are also selected and sent for important courses such as Higher Command Course, Staff college at India and abroad. Also, they are being considered for diplomatic assignments and one officer has been posted as Dy Air Attache in Embassy of India.
- e) **Introduction of grant of Permanent Commission to Short Service Commission Officers on Grounds of Exceptional Performance in Sports (Men and Women):** Indian Air Force has implemented policy guidelines to ensure that officers who excel in the field of sports at international level are retained in the service to serve the cause of sports. The scheme is equally applicable to Short Service Commission Officers (Women). Wing Commander Uvena Fernandes is the first women officer who was granted permanent commission under the scheme.
- f) **Grant of Permanent Commission to Women Short Service Commission Officer:** As per the directions of GoI MoD, the President had granted the sanction to offer Permanent Commission to serving Short Service Commission Officers (Women) of flying branch. Also, serving SSC officers (Men and Women) in the IAF were made eligible for consideration for grant of Permanent commission depending upon availability of vacancy, willingness suitability, merit and subject to medical fitness. These decisions were implemented by IAF. The reforms on grant of Permanent Commission to women officers uphold the ground of gender neutrality and women empowerment practiced by the IAF.

21 women officers were granted Permanent Commission during the year 2020

Indian Coast Guard



Indian Coast Guard (ICG) has been inducting women officers as permanent appointee Assistant Commandant in General Duty (GD) branch since 1997 and Aviation branch (Pilots) since 1998. Presently 119 women officers are on the active rolls of the service consisting of permanent entry women officers in General Duty, Aviation and Law branches and as Short Service Appointee (SSA) in General Duty and Aviation branches.

The strength of women officers in ICG approximates to about 10 percent of the Government sanction of ashore billets and fixed wing aviation billets.

The service has taken proactive steps towards empowerment and welfare of women officers. A total of 8 women officers have undergone courses in various specializations pertaining to CG charter of duties. Their experience, talent and dedication have been effectively utilised in the domains of general administration, logistics, IT services and CG aviation (as pilots, observers and support services). They are also employed in the equally responsible tasks pertaining to the management of coastal security mechanism. Accordingly, the women officers are also posted in remotely located stations at par with the male officers. In addition, Command appointments in Coast Guard store depots are also held by women officers.

Defence Research Development Organization (DRDO)

DRDO is safe and healthy work environment for women employees. In accordance with the act 2013, DRDO ensures that women employees are accorded equal opportunities for enhancement of their skills and knowledge and fulfillment of their potential. As a result many women scientists have reached top positions in DRDO while achieving organizational objectives. As per Ministry of Women & Child Welfare instructions, an **online complaint management system (SHE Box)** was implemented during the year and all lab/estts have created their user-id for its operationalization.

The “**International Women’s Day**” is celebrated every year by DRDO with enthusiastic participation of women employees across the Labs. The celebrations are hosted by a DRDO Lab each year with an innovative theme. The International Women’s Day (IWD) – 2020 was to be organised by Naval Physical & Oceanographic Laboratory (NPOL), Kochi in March 2020 with the theme ‘Synergising Her Achievements towards Knowledge Technology & Innovation (SHAKTI)’. However, due to the pandemic situation, the IWD celebrations had to be called off.

Department of Defence Production

a) **Ordnance Factory Board (OFB):** OFB has 6475 women employees. All necessary facilities are provided in the work place for conducive atmosphere for women employees. Instructions have been issued to all Ordnance Factories to ensure existence/functioning of the Internal Complaints Committee to look into complaints of sexual harassment. All basic amenities like proper working area, separate toilets, rest rooms have been provided to women employees in all OFs/Units. Equal opportunities are provided to women in recruitment, career progression, training & development, welfare measures, etc.

b) **Hindustan Aeronautics Ltd. (HAL):** The strength of women employees in HAL is 2260 as on December 31, 2020. HAL is a Corporate Life Member of the Women in Public Sector (WIPS) Forum. Women employees are encouraged to participate in programmes/ activities of WIPS Forum. All statutory welfare amenities have been extended to women employees. Equal opportunities are provided to women employees at all levels for advancement in their career.

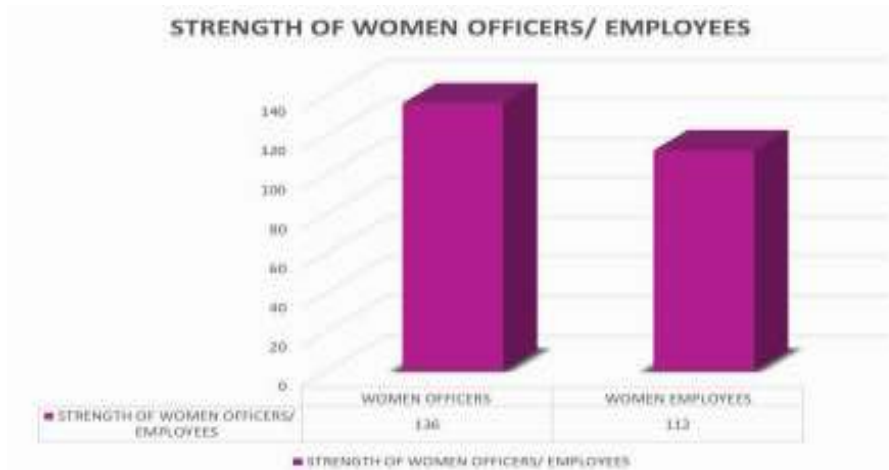
Internal Complaints Committees have been constituted in Divisions / Offices as per the Sexual Harassment of Women at Workplace (Prevention, Prohibition & Redressal) Act, 2013. Ladies Clubs / Families Welfare Associations are also functioning to take up various philanthropic / socio-cultural activities. Women’s Day is celebrated on 8th March every year.

Exclusive Training & Learning Programmes viz. Women Empowerment Program; Emerging Women Leadership; etc., are being conducted by HAL. Equal Opportunities are provided to Women Employees at all levels for advancement in their career. Around 50 Women Employees hold Senior Management posts i.e., above Grade VII.

c) **Bharat Electronics Ltd.(BEL):** With 1952 Women staff, BEL appreciates Gender diversity for Women Empowerment. Fair opportunities are provided in Recruitment, Career Progression, Learning & Development, Welfare measures etc. Women have assumed significant Leadership positions (2 Functional Directors, 1 Executive Director and 6 General Managers) and play a vital role in business growth. In the light of Hon’ble Supreme Court’s Directions on Prohibition of Sexual Harassment of Women at Work Place, an “Internal Complaints Committee” is in place. Awareness programmes are conducted for Women & Men Employees to make BEL a Safe place for Women employees.

- d) **BEML Ltd:** BEML is an equal opportunity employer, thereby creating a conducive environment of work for female employees / executives across the organization. In selection, recruitment, promotions, career development, equal opportunity is provided to all the women employees/executives in the Company. Also, the women executives are given equal opportunity in decision making and enjoy equal administrative and financial powers as per the Delegation of Powers of the Company. Further, all the applicable statutory provisions under the Factories Act, Maternity Benefit Act, etc., are being complied both in letter and spirit.

In addition to the above, in terms of Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act 2013 with a view to provide protection against sexual harassment of women at workplace and for prevention and redressal of complaints of Sexual Harassment and for matters connected therewith or incidental thereto, the Internal Complaints Committee (ICC) has been constituted.



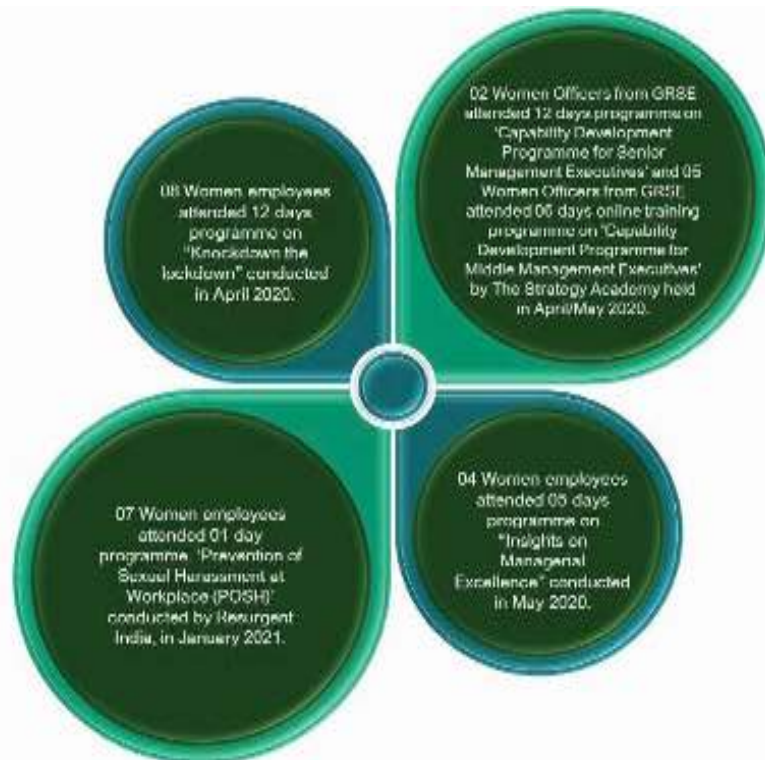
Total strength of women officers/ employees as on 31st December, 2020

- e) **Bharat Dynamics Ltd (BDL):** There are 310 women employees working in BDL as on 31.12.2020 which constitutes 10.56 % of the total workforce. The Company amended its Standing Orders, CDA rules and incorporated a chapter on “Prohibition of Sexual Harassment of Women Employees at Work Place”. A “Complaints Committee” headed by a senior woman officer has been constituted to enquire into complaints. Women employees (Executives & Non-Executives) are nominated in Trade Union and Officer’s Association. Company provides necessary facilities for participation in WIPS.

- f) **Garden Reach Shipbuilders & Engineers Ltd (GRSE):**

- **Recruitment:** In 2020-21, Out of 56 selected candidates in various posts, 05 women candidates have been selected.
- **Training & Development:** In GRSE, the strength of women employee is 96 which is around 5% of the total strength in the Company. For women employee and executives,

GRSE has created a conducive environment to work. Some of the training programmes conducted are as follows:



Training programmes conducted by GRSE for its women employees

- g) **Goa Shipyard Ltd.(GSL):** Women employees at GSL are given equal opportunities with their male counterparts. The Company has strict compliances towards various guidelines promulgated for Women workforce for achieving safer working environment. An 'Internal Complaints Committee' for Prevention of Sexual Harassment at Workplace is in place. A Women cell is also created which acts as a responsive platform for women employees of GSL to nurture growth and development amidst themselves. Regular awareness and training programs are also organized for women employees across all cadres for their holistic development. With a focus on leadership development, special programs have been organized for Women Executives to groom them for leadership roles. Further, as part of wellness initiative, regular Medical check-ups for women employees are being organized.
- h) **Hindustan Shipyard Ltd (HSL):** A "Gender Budgeting & Women in Public Sector Cell" has been constituted with five women officers for effective implementation of general development program for women employees such as training, advancement of skills and provision of welfare amenities at work place etc. and also to enhance the effectiveness of women employees in their career management and overall personality development. A complaints committee has been constituted with a senior lady officer as head of the committee to examine complaints of sexual harassment in the work place if any. No gender based complaints have been received by the Committee.

Women officers at appropriate levels are included as members of selection committees and DPCs. HSL is giving in-service training to women employees and equal opportunities are given to women employees to enhance their decision making skills and confidence levels.

HSL in association with Mahatma Gandhi Cancer Hospital & Research Institute has conducted a training session on Cancer awareness for women employees. Further, a free cancer screening camp for women employees and women residents of HSL Township has been organized at Family Clinic of HSL in Oct 2019. Lady Doctors are appointed in HSL dispensary for immediate health checkups of women employees and colony residents and for providing pre-natal care and also counselling both women employees and women residents of the colony and family members of employees.

HSL being a labour intensive industry, women are recruited mainly in executive cadre for carrying out administrative functions. There are presently 30 lady officers which constitute about 10% of total officers' strength of the shipyard

i) **Mazagon Dock Shipbuilders Ltd. (MDL):**

- There are around 213 Women employees (executives and staff) in MDL. Women employees were imparted training on various topics viz. Leadership, Soft Skills and Technical training.
- MDL also provided Apprenticeship for skill enhancement in various trades to 54 girl Apprentices during FY 2020-21.
- Women employees are members in the Forum of Women in Public Sector (WIPS). WIPS carries out various women empowering activities viz. National & Regional Meet - WIPS, Celebration of International Women's Day, Donation and Visit to Old Age Home near Mazagon.
- Following enactment of The Sexual Harassment of Women at Workplace Prevention, Prohibition and Redress) Act, 2013, an Internal Complaint Committee (ICC) has been in place to deal with and redress complaints on sexual harassment.
- The Company provides Creche facility for the children of Women / Lady employees under the supervision of a lady Doctor and one female attendant.
- Female employees who are on the permanent as well as Contract basis are entitled to Maternity Leave for 180 days. Similarly, 45 days maximum leave is allowed in case of Miscarriage.

j) **Mishra Dhatu Nigam Limited (MIDHANI):** MIDHANI has constructed toilets in Govt. schools in areas like Kothagudem, Jillelguda, Choutuappal, Ramannapet where more than 50% students are girls. The maintenance activities of the toilets at these Govt. schools are also taken up by MIDHANI. Dual desks are also distributed by MIDHANI at various schools at Kothagudem where more than 50% students are girls.

MIDHANI Sponsored vehicle for delivering food to Govt. schools in Hyderabad & Food kits to Kothagudem Govt. schools where more than 50% are Girl Students.

- k) **Directorate General of Quality Assurance (DGQA):** All opportunities and benefits as per the guidelines and policies issued by the Govt of India and other statutory authorities from time to time with regard to women empowerment and welfare are being implemented.
- l) **Directorate General of Aeronautical Quality Assurance (DGAQA):** DGAQA is committed to ensure a safe, healthy and conducive work environment of work for its women employees. Basic facilities such as proper working space, separate/renovated toilets have been provided for women employees. All statutory facilities such as maternity benefits, CCL leave are provided to women employees. Internal complaint committee as per Sexual Harassment of Women at Workplace (Prevention, Prohibition & Redressed) Act 2013 have been constituted in all DGAQA Field Establishments for prevention and redressal of complaints of sexual harassment cases against women employees.

Department of Ex – Servicemen Welfare (DESW)

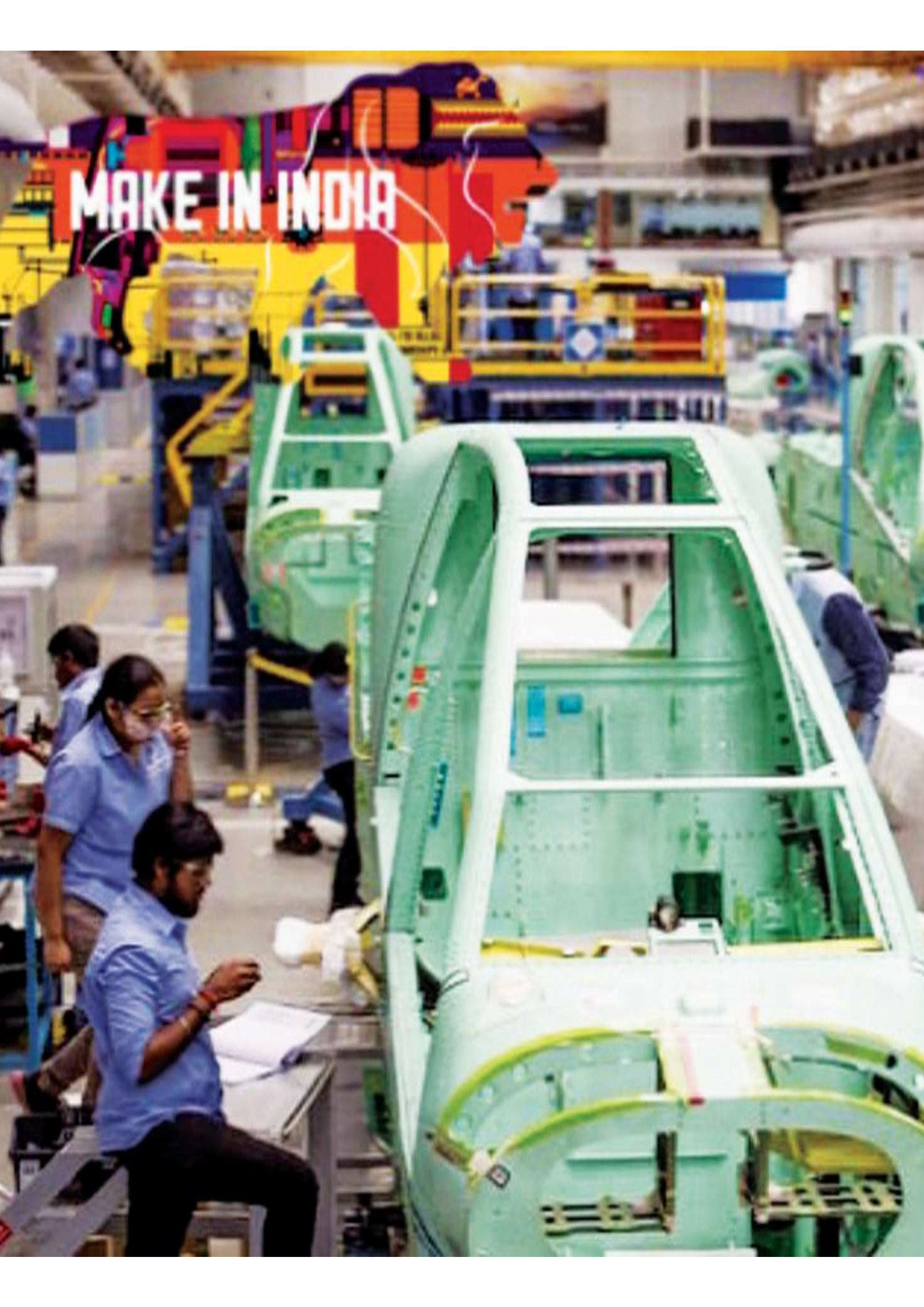
Department of Ex-Servicemen Welfare deals with the rehabilitation and welfare of about 32 lakh Ex-servicemen including widows of Armed Forces personnel and their dependent family members. Financial assistance is being provided to the girls and women under various schemes. Kendriya Sainik Board (KSB) Secretariat provides financial assistance for education of children, marriage of daughters and re-marriage of widows of ESM.

Widows of ESM are eligible for Resettlement Training under the Directorate General of Resettlement (DGR). A number of DGR Employment Schemes like Coal Tipper Scheme, Oil Product Agencies, Safal Booths etc. are given priority to certain categories of widows of ESM.

War widows are exempted from payment of contribution under the Ex-Servicemen Contributory Health Scheme.

War widows are exempted from payment of contribution under the Ex-Servicemen Contributory Health Scheme.

A number of Ex-service women in coming years consequent upon entry of women in armed forces, will add a new dimension to the scope and functioning of the Department of Ex-Servicemen Welfare. Formulation of women oriented resettlement/ welfare schemes for retiring/ boarded out women on medical grounds, keeping in view their profile and special requirements is being explored.



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