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ROLE AND EQUIPMENT USED BY THE ARMED FORCES

India boasts of having the second largest Army in the world - an Army battle hardened on all possible types of terrain from the icy heights of the Siachen Glacier to the deserts of Rajasthan and from the plains of Punjab to the forests of the North East. India, due to unresolved border disputes and hostile neighbours, is required to maintain a well-equipped armed force at all times.

The army is required to be prepared for external threats as well as internal disturbances. India faces challenges from the threat of militancy in the North Eastern parts and state sponsored terrorism in Jammu and Kashmir. Indian army is constantly modernising by inducting new weapons & technology to face all threats. India today is the world's largest importer of military hardware.

In this module, we shall learn about the major weapons and equipment that are presently in service in the Armed Forces of our country. For ease of understanding the details of weapons and equipment are outlined as per the role and tasks of the various combat arms of the Army, Navy and Air Force.



Objectives

After studying this lesson, you will be able to:

- explain the role and function of Infantry, Armoured Corps, Mechanised Infantry, Artillery, Engineers, Army Air Defence, Army Aviation Corps, Signals;
- describe the different kind of Naval ships and
- explain the Indian Air Force, its role and equipment.

10.1 Infantry

Over the centuries it has always been the foot soldiers who have led and captured

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land in enemy territory. They also man our borders and have defended the territorial boundaries from invaders. History is replete with the valiant saga of scores of men who have defied odds to win battles for their armies.

Infantry is the major arm of the Indian Army. It is an arm of close combat with the task of closing in with the enemy to physically assault and capture ground. It is also required to prevent aggression within. The infantry is heavily committed in undertaking Counter Insurgency and Counter Terrorist Operations. To perform the assigned tasks, the infantry should be equipped with the under mentioned weapons and equipment.

Infantry's Weapons and Equipment

Assault Rifle, Sten Machine Carbine, 9mm Pistol and Hand Grenades are the personal weapons for individual soldiers. All soldiers and officers carry one of these weapons along with hand grenades when they go to war. You can identify them from the illustrations given.

5.56mm INSAS Rifle Fixed Butt AK- 47 Rifle



Fig 10.1- Assault Rifles



Fig 10.2 - 9mm Sten Machine Carbine



Fig 10.3 - 9mm Pistol

Source : common.wikimedia.org



Note



Fig 10.4 - Hand Grenades Source : pixbay.com

5.56mm Light Machine Gun: It can fire effectively up to 700m. It is an automatic gun and has a higher rate of fire than an assault rifle. It is useful in breaking the enemy forming up for final charge on own defences.



Fig 10.5 - INSAS Light Machine Guns

Rifle AK 203: It is a new assault rifle which is in the process of being introduced into the army. It will replace the INSAS weapon system and is manufactured as a joint venture between Russia and The Ordnance Factory Board, in Korwa, Amethi, Uttar Pradesh.

84 mm Rocket Launcher: This is used to destroy tanks, bunkers, vehicles etc. It can be used to illuminate the battle area as also for making smoke screens to hide movement of own troops.



Fig 10.6 Kalashnikov AK 203 Assault Rifle



Fig 10.7 - 84mm Rocket Launcher

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51mm Mortar: This is used to fire high explosive bombs on enemy. It is an area weapon use which can destroy the enemy. It can also fire illumination and smoke bombs.



Fig 10.8- 51mm Mortar

7.62mm Medium Machine Gun: It can fire 600 to 1000 rounds per minute at an effective distance of 1800m. The 30mm Automatic Grenade Launcher is best suited to engage enemies in the open. It has an ammunition box that can hold 30 grenades. It can fire up to 2300m.



Fig.. 10.9 - 7.62mm Medium Machine



Fig 10.10- Gun 30mm Automatic Grenade Launcher

7.62mm Dragunov Sniper Rifle: It has an effective range of 800m and is widely used by sharp shooters and marksmen to eliminate individual enemy targets. It is very effectively used on the Line of Control at our borders in Jammu and Kashmir.



Fig - 10.11 - 7.62mm Dragunov Sniper Rifle

40mm Multi Grenade Launcher: It is capable of firing grenades up to 375m. It is very effective in urban areas and jungle terrain.



Fig - 10.12 - 40mm Multi Grenade Launcher

81 mm Mortars: It is an area weapon which can fire high explosives, smoke and illuminating bombs. Its effective range is 5000m (or 5 KM). It can fire in all types of terrain and in all weather conditions.



Fig - 10.13- 81 mm Mortars

Anti Tank Guided Missiles (ATGM): With a range of upto four kms, the ATGMs are very accurate and effective in destroying tanks in war.



Fig - 10.14 - [ATGM] Anti Tank Guided Missiles



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Hand Held Thermal Imager (HHTI) and Battle Field Surveillance Radars (BFSR) The HHTI is used to detect enemy troops at 1.5 kms and vehicles up to 3 kms. It is very effective being used on the Line of Control where it is used for detecting terrorists and enemy troop intrusions. The BFSR can be used for detecting enemy movement for a distance upto 18 kms.



Activity 10.1

- i) Watch the gutsy queen of battle 'the infantry' in action.
[https:// www.youtube.com/watch?v=Lnc0_ZOUrvo](https://www.youtube.com/watch?v=Lnc0_ZOUrvo)
- ii) Watch the video to understand the personal weapons carried by the infantry soldier.

https://www.youtube.com/watch?v=Cf_G4Yot2tg

10.1.1 Armoured Corps

In ancient times as well as till the later part of the medieval period, a sizeable number of troops of major armies used to fight on horses as part of the Cavalry force. The Cavalry, while it gave speed and manoeuvrability to the troops, also exposed them to the dangers of enemy cannons and other weapons against whom they had little personal protection.

The tanks, which they now use, were introduced to cater to an arm of soldiers who could fire on well entrenched enemies and give them the shock effect before the infantryman charged with his bayonet. In modern times these armoured tanks have replaced the horses. The armoured tanks are capable of heavy fire power, quicker mobility and manoeuvrability. They are employed to destroy enemy tanks, blow up bunkers and churn the target area by over running the objective.

They give close support to the infantry which normally follows behind the tanks in the last few hundred meters before the final assault on the objective. Armoured tanks, though being quick and offensive, cannot hold ground like the infantry. Night vision capabilities have made the tanks more versatile and lethal. The Armoured tanks in battle are a great source of fear for the opponents.

It is documented in our history how the introduction of tanks at the Zoji la Pass in the 1948 war changed the course of the battle and gave victory to the Indian Army.

Let us look at the various types of Armoured vehicles in service with the Indian Army.

- **T-72 and T-90 Tanks** : Both these tanks are of Russian origin. The T-72 was the most popular tank after World War II. It was being used by over 40 countries worldwide. The T- 90 tanks are the upgraded versions of T-72 with greater mobility, fire power and lethality.
- **Main Battle Tank (MBT) Arjun** : It is an indigenously built tank with advanced features like automatic target locating, tracking and destruction. It has superior armour protection than the Russian T-90s.
- **Bridge Laying Tank** : As the name suggests, it is used to lay bridges over obstacle ridden terrain to enable tanks, troops and logistical transport to cross over. The indigenously made 20-meter long 'Kartik' bridge laying tank is one of the widest tank bridges in the world. The bridge can carry all types of tanks and other vehicles in service with the Indian Army, including the Arjun MBT.



ACTIVITY 10.2

- i) Collect pictures of all the different types of tanks discussed in this section and paste in your notebook.
- ii) Look up the internet link given below and read about the Role of tanks in Battle.

<https://www.youtube.com/watch?v=kwwFlzNjYjU>

- iii) Use the link given below to watch the movie on the Battle at Zoji la Pass during 1948 Indo - Pak War. You will get an idea of what it takes to move the tanks at high altitude and fight.

<https://www.youtube.com/watch?v=ns5ac5iwuZQ>

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10.1.2 Mechanised Infantry

Over the decades a need was felt to carry the infantry along with tanks which could give the offensive forces speed and fire power while keeping the soldiers safe and fresh to fight. The Mechanised Infantry is a combat arm that has the capability to carry soldiers on armoured vehicles called Infantry Fighting Vehicles (IFV) or Armoured Personnel Carriers (APC) to transport infantry directly into battle. They follow tanks and dismount the troops who then fight as infantry as and when required.

Their role is to close in with the enemy by manoeuvre, to destroy / capture the enemy, repel the enemy attack by fire, engage in close combat or counter attack. The troops move in vehicles called BMPs which provide quick mobility to assaulting troops rapidly through small arms and indirect fire to deliver the infantry up to the objective and there after continue to provide fire support from a flank. Currently, Russian made BMP-2 are in service in Mechanised Infantry. IFV can also float in water and cross water obstacles. It can carry ten personnel including the crew.



ACTIVITY 10.3

Watch Mechanised Infantry in Action and note down important points about it.
https://www.youtube.com/watch?v=c1Uqbfh7n_E-



Intext Questions

10.1

1. What is the number of soldiers a BMP can carry?
2. Write a short note on 'Main Battle Tank (MBT)'.
3. Write the full forms of ATGM, HHTI, BFSR.

10.1.3 Artillery

To unsettle the well- entrenched enemy and cause destruction to soften the target before the actual assault by instantly, there is a requirement of carrying out heavy bombardment. It is called preparatory bombardment. Some portion of this preparatory bombardment is done by the Air Force. The majority of it is left to the Artillery.

The role of Artillery is to severely deplete the enemy's will to fight through heavy bombardment. Artillery also fires at the enemy's concentration areas, logistic hubs and forward localities. They provide fire cover to infantry and armoured troops by softening enemy's resistance. They keep the enemy's head down and assist our troops in launching assaults with minimum casualty. In 'Operation Vijay' artillery played a stellar role in pulverising enemy's defences and causing heavy casualties. The Indian artillery fire was so intense that the snow and ice on the mountain top turned yellow.

- Main artillery guns 120 mm Mortars, 105mm Indian Field Gun, 155mm Bofors Gun, 130mm Field Arty Gun, 155mm Made in India 'Dhanush' are used by the Indian Army.



ACTIVITY 10.4

Collect pictures of the guns mentioned above and paste in your notebook.

- **Weapon Locating Radars (WLR):** These radars are used to locate enemy artillery guns and mortars, when they fire at us. By getting their exact location our own artillery then fires at enemy artillery and destroys it. This tactic is called "counter bombardment".
- **Unmanned Aerial Vehicle (UAV):** These are employed to look into enemy territory and collect intelligence. Israeli made Heron Mark II are extensively used to carry out reconnaissance of enemy area as also in locating terrorist movements in Jammu and Kashmir.
- **Long Range Recon and Observation System (LORROS):** It is used to locate and identify enemy troop and vehicle movement in war and for counter terrorist surveillance in Jammu and Kashmir. It is an optical device like a telescope.



ACTIVITY 10.5

Watch a Short movie on Artillery and answer these questions:

<https://www.youtube.com/watch?v=kbxVnEDKSZw>

- (i) What is the range of the 155 mm BOFORS FH77 Gun?
- (ii) What is the approximate cost of Precision Guided Munitions?

10.1.4 Engineers

Indian army is a modern army which is self-sufficient in fighting wars on all its terrains of mountains, plains, jungles, deserts and glaciers. The combat arms like the Infantry and Armoured critically need the support of the combat support arms to win wars. While the combat arms lead the assault into battle, the combat support arms ensure victory through fire power, logistics and technical assistance.

The foremost among the combat support arms are the Engineers. Engineers' role is to ensure mobility, counter mobility and ensure survivability during war. They are tasked for laying tracks, helipads, airstrips, bridges, water sources, laying and breaching mines and construction of field defences. They also create obstacles in the path of the enemy by demolishing bridges to delay and cut off the logistic chain to the assaulting troops.

Major Engineer Equipments and Bridges are AM-50, PMS, Bridge Laying Tank,

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Girder Bridge, Bailey Bridge and Pontoon Bridge.



ACTIVITY 10.6

Watch Army Engineers in action.

<https://www.youtube.com/watch?v=oiHKMGo-7qs>

10.1.5 Army Air Defence (AAD)

During war the enemy's intention is to destroy all our vital installations by aerial bombing. The aircraft with speeds faster than what the human eye can detect require sophisticated equipment and counter measures to nullify the evil designs of the enemy. The AAD is tasked to protect vital static installations like nuclear plants, air bases, radar sites etc from enemy air threat. They are also responsible for protection of Indian air space from enemy aircraft and missiles.

Resources available with AAD are Shilka, L-70 Gun, Kwadrat, Strella, IGLA Missiles, ZU-23mm Guns, Tangushka and OSAAK -Surface to Air Missiles



ACTIVITY 10.7

Watch the military hardware of the Army Air Defence - <https://www.youtube.com/watch?v=wkGH5cYdH9k>

10.1.6 Army Aviation Corp

The combat arms at times of war and peace need assistance for recce of inhospitable or unknown terrain, casualty evacuation and ferrying of supplies to air maintained locations that need stocking of supplies especially during winters when all road communications gets closed owing to heavy snowfall. It is in such critical situations that the Army Aviation Corps charts its role to support the ground troops.

The versatile Army Aviation Corps operates in all kinds of terrain be it the deserts, plains, forest and high mountains to the bone chilling Siachin glacier. Its missions are mainly dedicated to casualty evacuation, ferrying of soldiers and supplies, recce and search and destroy operations.

The main helicopters with the aviation corps are Dhruv and Cheetah



ACTIVITY 10.8

Watch Army Aviation corps in action- <https://www.youtube.com/watch?v=G4x-b9wz9u4>

10.1.7 Signals

The troops during war require secure communication to pass and receive sensitive information. These are then used by commanders at all levels to plan and execute the various stages of war. The corps of signals is the backbone of the Army's communication setup. They handle military communications, operate and maintain Army Wide Area Network (AWAN) which is the Army owned internet. They protect against cyber threats from anti national elements.

They also carry out electronic warfare using technology and equipment developed by Defence Research and Development Organisation (DRDO). Basically their role is to ensure communication which enables commanders to gain information from the forward locations in war, issue instructions and orders lower to commanders and forward troops. Progress of the battle is also relayed to the higher commanders.



ACTIVITY 10.9

Watch the Corps of Signals in action.

<https://www.youtube.com/watch?v=vglbD71F3U>



Intext Questions

10.2

1. What is the role of Infantry ?
2. Highlight the mission of Army Aviation Corps.
3. Explain the role of Artillery.

10.2 Ships and Their Weapon System in the Indian Navy

The history of the naval might of India dates back to the Chola empire of South India who were at the height of their glory from the 10th to the 12th century AD. Today the major role of the Navy involves conduct of active operations during war and to undertake humanitarian assistance and disaster relief missions during peace. India has a coastline of 7516 Kilometres.

The Indian Navy safeguards and ensures security of the sea lanes of communication thus supports the trade [95% of total trade] that is transported by sea. They keep our seas and oceans safe from pirates.

Navy is effectively used to transport troops, fire power & logistics to deal with situations in neighbouring countries as was done in Maldives in 1988.

The different kinds of Naval Ships are highlighted as under :

Aircraft Carriers : India has one Fleet Carrier (INS Vikramaditya - and one Light



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Carrier (INS Viraat). An aircraft carrier is basically an airbase. In other words, it has warplanes on board that can take off and land while the ship is in water. INS Vikramaditya was bought from Russia and refitted. It can carry upto 34 Fixed Wing Aircrafts and Helicopters. The MIG 29K is the main fighter aircraft on board. With over 1,600 personnel on board, Vikramaditya is literally a 'Floating City'. Associated with this large population is a mammoth logistics requirement. The ship requires nearly a lakh of eggs, 20,000 litres of milk and 16 tonnes of rice per month to feed the crew. With her complete stock of provisions, she is capable of sustaining herself at sea for a period of about 45 days.



ACTIVITY 10.10

See INS Vikramaditya in action.

<https://www.youtube.com/watch?v=EGhhwgQtuUg>

- **Attack Submarines :** An attack submarine is a submarine that can sail under water and attack and sink other submarines, surface ships and merchant vessels. They could be deployed in groups/alone or assigned to protect other ships (like aircraft carriers). India has 15 attack submarines out of which 14 are conventional and one is a Nuclear submarine. A nuclear submarine has a nuclear power plant. All naval vessels use diesel engines for propulsion. A nuclear submarine uses nuclear energy for propulsion.
- **Destroyer :** A destroyer, as the name suggests, is a fast and versatile long-endurance warship. They are employed to escort bigger ships (like Aircraft Carriers) and engage in anti-submarine, anti-aircraft and anti-surface warfare. India has 10 destroyers. The Israeli Barak missiles and the indigenous naval version of Brahmos missiles are deployed on destroyers. INS Kochi is a destroyer class ship.
- **Frigate :** A Frigate is a warship that are smaller than destroyers and are employed to protect other warships and merchant marine ships. It can also be used in anti-submarine, anti-aircraft and anti-surface roles. India has 15 Frigates.
- **Corvette :** Corvettes are swift, manoeuvrable, lightly armed warship. They are smaller than a Frigate. They are usually considered the smallest vessel to be called a proper warship. India has 22 Corvettes.

- **Patrol Vessel** : Patrol Vessels are employed for border protection roles, including anti-smuggling and anti-piracy. They also undertake rescue operations.
- **Amphibious Warfare Ship** : Amphibious Warfare Ships are used to deploy ground troops during an amphibious assault. India has 10 Amphibious Warfare Ships.
- **Minesweeper** : A minesweeper is a small naval vessel designed to clear mines in water and make the waterways safe for shipping and movement of own warships.



ACTIVITY 10.11

Find out the names of each type of ship used in the Indian Navy. Collect pictures of each type of ship and paste in your notebook.



Intext Questions

10.3

1. What are attack Submarines ?
2. What is the role of Frigates ?
3. What is a Minesweeper ?
4. Highlight the task of a Destroyer.

10.3 The Indian Air Force, its Role and Equipment

The Indian Air Force was raised on 08 Oct 1932 as a supplementary support for the British Air force. It was called Royal Indian Air Force. Post-independence, after the country became Republic in 1950 the Royal Indian Air Force was rechristened Indian Air Force (IAF). Since 1950 the IAF has participated in four wars with Pakistan and one with China. The IAF has excelled in operations like Operation Vijay, Operation Meghdoot, Operation Cactus and Pawan.

The IAF's has also been shouldering the responsibility of actively contributing with its manpower and aircrafts for the United Nations Peace Keeping Missions. The IAF today is ranked fourth in the world owing to its might and professionalism. It is modernising at an accelerated pace and stands as a credible air power amongst the foremost Air Force powers in the world. The IAF has in its inventory, Fighters, Transport aircrafts, Helicopters, Air Defence Missiles and Radars. The aircrafts held by the IAF are highlighted below :

10.3.1 Fighters

MiG-21 BISON- Single engine, single seater multirole fighter/ground attack aircraft of Russian origin which forms the backbone of the IAF. It has a maximum speed of

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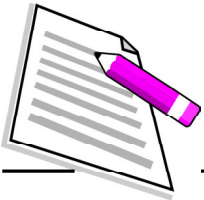
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2230 km/hr (Mach 2.1) and carries one 23mm twin barrel cannon with four R-60 close combat missiles.

Jaguar-A twin-engine, single seater deep penetration strike aircraft of Anglo-French origin which has a maximum speed of 1350 km/hr (Mach 1.3). It has two 30mm guns and can carry two R-350 Magic CCMs (overwing) alongwith 4750 kg of external stores (bombs/fuel).

MiG-27- Single engine, single seater tactical strike fighter aircraft of Russian origin having a maximum speed of 1700 km/hr (Mach 1.6). It carries one 23 mm six-barrel rotary integral cannon and can carry upto 4000 kg of other armament externally.

MiG-29- Twin engine, single seater air superiority fighter aircraft of Russian origin capable of attaining maximum speed of 2445 km per hour (Mach-2.3). It has a combat ceiling of 17 km. It carries a 30 mm cannon along with four R-60 close combat and two R-27 R medium range radar guided missiles.

Mirage-2000- A single seater air defence and multi-role fighter of French origin powered by a single engine can attain maximum speed of 2495 km/hr (Mach 2.3). It carries two 30 mm integral cannons and two matra super 530D medium-range and two R-550 magic II close combat missiles on external stations.

SU-30 MKI- Twin seater, twin engine multirole fighter of Russian origin which carries One X 30mm GSH gun along with 8000 kg external armament. It is capable of carrying a variety of medium-range guided air to air missiles with active or semi-active radar or Infrared homing close range missiles. It has a max speed of 2500 km/hr (Mach 2.35)

Tejas - It is India's light combat aircraft and is the highest multi-role supersonic fighter aircraft of its class. It will contribute towards achieving self sufficiency in production of defence equipment.

10.3.2 Transports Aircrafts

Avro- Twin engine turboprop, military transport and freighter of British origin having a capacity of 48 paratroopers or 6 tonnes freight and maximum cruise speed of 452 km/hr.

Embraer- The main role of employment of this executive Jet Aircraft is to convey VVIPs/VIPs to destinations within India and abroad. Air HQ Communication Squadron operates this aircrafts and it has maintained a flawless incident/accident free track record till date.

Boeing 737-200 Twin engine turbofan, VIP passenger aircraft of American origin with total seating capacity of upto 60 passengers. It has a maximum cruise speed of 943 km/hr



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AN-32-Twin engine turboprop, medium tactical transport aircraft of Russian origin with a crew of five and capacity to carry 39 paratroopers or maximum load of 6.7 tonnes. It has a max cruise speed of 530 km/hr.

IL-76 - A four engine heavy duty/long haul military transport aircraft of Russian origin with a maximum speed of 850 km/hr. It has a twin 23 mm cannon in tail turret and capacity to carry 225 paratroopers or 40 tonnes freight, wheeled or tracked armoured vehicles.

C-17- The aircraft is capable of carrying a payload of 40-70 tons up to a distance of 4200-9000 km in a single hop. It gives IAF strategic air lift capability and has been used effectively in evacuating people stranded in other countries like Yaman Libya.

C-130J- The aircraft is capable of performing para drop, heavy drop, casualty evacuation and can also operate from short and semi prepared surfaces.

Cheetah- Single engine turbo shaft, helicopter of French origin having capacity to carry 3 passengers or 100 kg external sling loads. It has maximum cruise speed of 121 km/hr and can climb to 1 km in 4 minutes.

Chetak- Single engine turbo shaft, light utility French helicopter with capacity of 6 passengers or 500 kg load. It has a maximum speed of 220 km/hr.

MI-17 V5- The Mi-17 V5 is a potent helicopter platform, equipped with modern avionics and glass cockpit instrumentation. They are equipped with state-of-art navigational equipment, avionics and weather radar.

MI-26- Twin engine turbo shaft, military heavy lift helicopter of Russian origin with carrying capacity of 70 combat equipped troops or 20,000 kg payload. It has a maximum speed of 295 km/hr.

MI-25/MI-35 Twin engine turbo shaft, assault and anti- armour helicopter capable of carrying 8 men assault squad with four barrel 12.7 mm rotary gun and upto 1500 Kg of ammunition including Scorpion anti-tank missiles. It has a maximum cruise speed of 310 km/hr.

ALH Mark III - It has been made indigenously by HAL. It filled with electronic warfare equipment. It can carry out military operations by day and night.

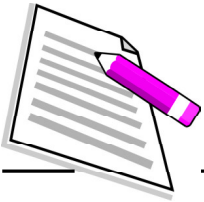


ACTIVITY 10.12

India has conducted some memorable military operations in the past. Find out about Operation Cactus Lily, Operation Vijay, Operation Meghdoot and Operation Pawan (Sri Lanka).

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Also watch these to know more about our Air Force:

<https://www.youtube.com/watch?v=o4REqFw9r10&t=4s>

<https://www.youtube.com/watch?v=JSbOiExdx0U>



Intext Questions

10.4

1. Name the agency that manufactures the Advanced Landing Helicopters (ALH).
2. Describe the role of Cheetahs.
3. Write a short note on Mirage 2000.



What You Have Learnt

India has the second largest army in the world. With a mammoth variety of military equipment presently in use in the Armed forces, it is important to know the role of each arm in the Armed Forces and the weapons and equipment that it uses to achieve its desired aim. We have briefly touched upon the characteristics of all weapons and equipments of the Indian Army, Navy and Air Force to give a first-hand knowledge on the subject. You have also studied Infantry, Artillery, Engineers, Army Air Defence, Army Aviation Corp, Signals. Relevant links to videos have been added for better assimilation and identification of the weapons, ships, helicopters and aircrafts.



Terminal Exercises

1. Explain the role of the infantry and the weapons and equipment that are authorised to it.
2. What are the tasks undertaken by the Navy?
3. Name the different types of ships and their assigned missions.
4. Why is Indian Air force considered to have unmatched capabilities against its rivals? Explain by giving brief details of the fighter aircrafts that it has for its operational requirements.



Answers to Intext Questions

10.1

1. It can carry ten personnel including the crew.
2. It is an indigenously built tank with advanced features like the automatic target

locating, tracking and destruction. It has superior armour protection than the Russian T-90s.

3. ATGM : Anti Tank Guided Missiles
HHTI : Hand Held Thermal Imager
BFSR : Battle Field Surveillance Radars

10.2

1. Infantry is an arm of close combat with the task of closing in with the enemy to physically assault and capture ground. It is also required to prevent aggression on own territory. Owing to the proxy war being waged in Jammu and Kashmir and the insurgency movement in the North East, the infantry is heavily committed in undertaking Counter Insurgency and Counter Terrorist operations.
2. Its missions are mainly dedicated to casualty evacuation, ferrying of soldiers and supplies, recce and search and destroy operations.
3. The role of Artillery is to severely deplete the enemy's will to fight through heavy bombardment on its concentration areas, logistic hubs and forward localities before and during assault by own troops. They provide fire cover to infantry and armoured troops by softening enemy's resistance. They keep the enemy's head down and assist our troops in launching assaults with minimum casualty.

10.3

1. An attack submarine is a submarine that can sail under water and attack and sink other submarines, surface ships and merchant vessels. It could be deployed in groups/alone or assigned to protect other ships (like aircraft carriers).
2. Frigates are warships that are smaller than destroyers and are employed to protect other warships and merchant marine ships. They can also be used in anti-submarine, anti-aircraft and anti-surface roles.
3. A minesweeper is a small naval warship designed to clear mines in water and make the waterways safe for shipping and movement of own warships.
4. A destroyer as the name suggests is a fast and versatile long-endurance warship. It is employed to escort bigger ships (like aircraft Carriers) and engage in anti-submarine, anti-aircraft and anti-surface warfare.

10.4

1. Hindustan Aeronautical Limited (HAL) at Bengaluru.

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2. They are used for Search and Rescue (SAR) Operations and Casualty Evacuation.
3. Mirage 2000s are single seater air defence and multi-role fighter of French origin powered by a single engine. It can attain max speed of 2495 km/hr (Mach 2.3). It carries two 30 mm integral cannons and two matra super 530D medium-range and two R-550 magic II close combat missiles on external stations.

