INDIAN DEFENCE INDUSTRY
A GLOBAL REACH
FOREWORD

Over the years, the Indian defence sector has witnessed substantial growth. Since 2002, the defence sector is fully open to the Indian private sector. Today, public and private sector, both with the extensive support given by the Government are able to design, develop and deliver state-of-the-art defence systems based on the latest indigenously developed technologies. These systems draw on the strength of proven software and hardware architectures and provide safety, security and threat management capabilities to armed forces.

Today, India’s defence sector can deliver a wide variety of world class weapon systems that can play a critical role in a nation’s security framework. Indian products aim to deliver defence solutions that are designed to meet the highest standards of quality, durability and affordability. This hand-book aims to showcase the various tried and tested weapon systems that are currently operational and provides an insight into a wide range of products developed by Indian defence industries for Indian defence forces and which are available for exports with Government approval.
**AKASH**

**DESCRIPTION:**
Akash Weapon system is an all-weather, Area Defense System for defending Vulnerable Areas/points against penetrating targets at low, medium and high altitudes. The system can engage multiple targets simultaneously.
- Target types: Helicopters, fighter aircraft, UAV etc.
- High immunity against active and passive jamming.
- Fully automatic with quick response time from target detection to kill.
- Adaptable to existing and futuristic Air Defense environment.
- Secured mode of communication among combat elements.
- Self-sufficient in electrical power with in-built power sources.
- Road and rail transportable with quick mobilization and deployment capabilities.
- In-built safety features with secured IFF.

**SPECIFICATIONS:**
- Effective range: 3-15 km
- Speed range: 1.8 - 2.5 Mach
- Altitude of operation: 30 m - 18 km
- Propulsion system: Two stage solid integral Rocket - target system
- Length: 7.97 m
- Diameter: 350 mm
- Weight: 720 kg
- Wartch type: High explosive, proximity warhead with proximity fuse
- Deflection mechanism: IRF proximity fuse
- Guidance system: Digitally coded command guidance system.

**COMPANY:** Bharat Dynamics Limited
**CONTACT:** bdel@bdl-india.in
**NSN:** 5420730471556

---

**BRAHMOS WEAPON SYSTEM**

**DESCRIPTION:**
Brahmos is a Supersonic Cruise Missile which can be fired from various platforms and under stringent launch conditions, it has established accuracy, reliability, ease of operation, faster reaction time and practically no possible countermeasures. BRAHMOS missile has identical configuration for land, sea, sub-sonic and air platforms. It is launched from a container, which also acts as a storage compartment container. It has a shorter flight time leading to lower target dispersion and quicker engagement. BRAHMOS missile has a wider range of flight trajectories and operates on “Fire and Forget” principle.

**SPECIFICATIONS:**
- Range: 250 km
- Speed: up to 2.8 Mach all through the flight
- Flight Altitude: 5 m to 15 km
- Wartch: Up to 700 kg conventional

**COMPANY:** BrahMos Aerospace Private Limited
**CONTACT:** praveenpathak@brahmcos.com
**MILAN-2T**

**DESCRIPTION:**
MILAN-2T is a rear portable (infantry) second generation ATGM, with tandem war head to destroy tanks fitted with Explosive Reactive Armor for both moving & stationary targets. It is wire guided, highly reliable and requires no maintenance/prefire checks.

**SPECIFICATIONS:**
- Caliber: 115 mm
- Length: 1187 mm
- Weight: 22 kg
- Range: 25-1850 m
- Penetration: > 720 mm
- Flight time: 32.5 sec
- Reliability: 95%

**COMPANY:** Bharat Dynamics Limited  
**CONTACT:** btdii@bdi-nda.in

---

**Dhanush**

**DESCRIPTION:**
Dhanush is the state-of-the-art gun system with an effective range of 36 km in plains and is equipped with high performance sight system like INS based sighting system, auto-laying system and on-board ballistic computation and advanced day and night direct firing system. Dhanush is a multi-terrain weapon platform and is capable to negotiate and deploy itself in difficult hilly and mountainous terrain as well as in deserts. The barrel is 155 x 45 caliber with 23 fire Chamber weapon and MPTO compliant, compatible to both modular and bag charge system.

**SPECIFICATIONS:**
- Caliber: 155 mm
- Weight < 13 Tons (approx.)
- Range: Max. 38 kms with (HE/BR) on plains
- Elevation: Max. up to 70° (245 mil), Min. up to -3° (-53 mil)
- Ammunition: HE M 101, CHTF-BT (HE), CHTF-BR (HE), Illuminating, Smoke and is Compatible with all NAADS 155mm Ammunition System

**COMPANY:** OFB  
**CONTACT:** export.ofb@ofb.in  
**MSN:** 105720471000
ADVANCED TOWED ARTILLERY GUN SYSTEM

DESCRIPTION:
The Advanced Towed Artillery Gun System is a 155 mm/52 caliber artillery system jointly designed and developed by DRDO. Its futuristic and technically superior breech, with higher service pressure and can withstand pressure up to 560 Mpa. It can fire any type of ammunition.

SPECIFICATIONS:
- 155 mm/52 Caliber Gun System
- Firing range of 48.074 km (HE-FRFB R) & 38.549 km (HE-ERFB R)
- Zero backlash Electrical drives: Hydro-electric gun system
- System has ability to fire Zone 7 charge
- Elevation Angle: -3° to +75° with the speed of 5°/s
- Ground clearance: 450 mm
- Self-propelled capability with a speed of 20 kmph

COMPANY: BHARAT FORGE LIMITED
CONTACT: muh.singh@bharatforge.com

VAJRA

DESCRIPTION:
The NR Vajra-T gun system has proven to withstand extreme weather conditions both in severest cold areas as well as in desert terrain. It is equipped with longer firing range with a higher rate of accuracy and effective state of the art firing capabilities.

SPECIFICATIONS:
- 155 mm/52 caliber tracked self-propelled gun system

COMPANY: LAURSEN & TOURNO LIMITED
CONTACT: info.defence@laursentourro.com
BHARAT-52

DESCRIPTION:
Bharat-52 is a long range 155 mm/52 caliber towed gun, providing a highly manoeuvrable field artillery solution. It has been designed for accuracy, stability and reliability during firing manoeuvres. It has a self-suspension arrangement which is achieved by using walking beams system which provides ease of maintenance. It has self-propelled capability with a speed of 35 kmph and is able to tow the vehicle's speed during towing mode. It can fire any type of ammunition.

SPECIFICATIONS:
- 155 mm 52 Caliber Gun System
- Gun Dimensions: Length 10354 mm x Width 2880 mm x Height 2656 mm
- Arc of fire (360°) ±35° in right and left, with the speed at 5°/s
- Elevation Angle: -8° to +70° with the speed at 5°/s
- Steering: Shown by Wire method for manoeuvring the artillery
- Deployment time: 1 minute in day, and 3.5 minute in night
- Weight: 35 ton
- Equipped with fully automatic Load Assist System (LAS) with manual backup arrangement with rate of fire as follows:
  - Burst rate of fire: 8 rounds in 10 sec
  - Interpo rate of fire: 12 rounds in 3 min
  - Sustained rate of fire: 40 rounds in 8 hr

COMPANY: BHARAT FORGE LIMITED
CONTACT: mahit.singh@bharatforge.com

UPGRADED L-70 GUN

DESCRIPTION:
L-70 Gun Upgrade is a fusion of the latest technologies in the areas of Electrical Servo Drives, Electro-Optical Fire Control System and Video Tracking. It has an Integrated Fire Control System with Optic Fire Control System (EOP) and 35° FL. It is a light compact gun that can be deployed in many type of combat situations and has high mobility and self-sustained capability. It can fire any type of ammunition.

SPECIFICATIONS:
- Mode of Operation: Remote Power Control, Local Power Control & Back-up Mode
- Power Source: M3 Batteries with Charger and DG Set
- Drive Specifications:
  - Assault Travel: 360°
  - Elevation Travel: -5° to 65°
  - Laying Angular: 0.5 MWD (0.0285°)
  - Dual-Purpose: 35 mm / 105 mm
  - Thermal Imagery: Magnification: 3 x (100 x 100)
  - Thermal Image: Monochromatic: 3-5 μm, Field of View: 3.4° to 25° continuous zoom

COMPANY: BHARAT ELECTRONICS LIMITED
CONTACT: narin@bartel.com
MSR: 171272444879

GARUDA-105

DESCRIPTION:
Garuda-105 is a light weight field gun based on the 105 Indian Field Gun and incorporates state-of-the-art soft recoil technology resulting in a lightweight, modular, high performance howitzer that can be designed to be integrated with many types of combat transportation. It has sleek and compact capability.

Garuda-105 is a ultra-light gun system which utilizes the high end Soft Recoil Technology. This allows the weapon (gun) to be placed on light vehicles and nonstandard platforms, including aircraft and coastal and river patrol watercraft. This high tech system is a force multiplier for the forward forces and will prove to be a complete game changer in the realm of weapon system.

SPECIFICATIONS:
- 105 mm 52 Caliber Gun System
- Extremely light weight: less than 3 ton
- Ordnance used: Existing 105 L7F
- Digital fire control, electrically controlled elevation and traverse
- Elevation and Traverse: Elevation: -8° to 70°, Traverse: 360°
- Rate of Fire: Normal Rate: 4 rounds/min; Intensive Rate: 6 rounds/min

COMPANY: BHARAT FORGE LIMITED
CONTACT: mahit.singh@bharatforge.com
ZU 23 UPGRADE

The ZU-23 Upgrade converts the manually-held gun into an all-electric system with autonomous functionality. It enables effective engagement of aerial and ground targets, incorporates the automatic target tracker and complies with the operating and storage temperatures, humidity, dust and rain protection requirements for reliable and fault-free operation.

SPECIFICATIONS:

- Modular construction for easy maintenance

COMPANY - LARSEN & TOUBRO LIMITED
CONTACT - info@ltdco.in

UPGRADED SCHILKA WEAPON SYSTEM

The Ugraded Schilka system is a ZSU 23 mm, 4 barrel, advanced all-weather self-propelled Air Defence Weapon System primarily designed to protect mobile formations against aircraft and helicopters. It consists of state of the art 3D phased Active Phased Array solid state Radar and Electro Optical Fire Control system that ensures day and night capability for detection, acquisition and tracking of targets. The various phases of operation such as rapid acquisition of fast moving target, determination of the firing point for the guns and ballistics of the projectiles, rapid laying of the guns so to the target and firing can be carried out while the vehicle is on the move or at halt. It has been built-in simulator for operator training and has Nuclear Biological Chemical (NBC) protection system.

SPECIFICATIONS:

- Caliber : 23 mm
- No. of Barrels : 4 x Automatic
- Water-cooled barrels
- Rate of Fire : 1400 rounds/minute
- for 4 guns
- Max Range : 2000 m

COMPANY - BHARAT ELECTRONICS LIMITED
CONTACT - info@balec.in
NSM 2950/796446146

WHEELED AMPHIBIOUS PLATFORM (WhAP) 8X8

WhAP (a.k.a. Fasttrack) is a Wheeled Amphibious Infantry Combat Vehicle jointly designed and developed by DRDO and VGE. Its hull under classic drive system with double wish bone type independent hydro-ematic suspension provides mobility across all kinds of terrain-land and water.

SPECIFICATIONS:

- 600 HP High Power Engine with Automatic Transmission in power pack concept
- Modular Architecture for multiple variants on same platform
- Scope for Enhanced Ballistic Protection, up to Threat Level 4
- Strong uprated drive line with hydro pneumatic suspension
- Open Electronic Architecture for any “Mission Kits”
- Advanced Environment Control for Ambient temperatures up to 55 degree Celsius

COMPANY - TATA MOTORS LIMITED
CONTACT - prasun.singh@tatanet.com
WEAPON LOCATING RADAR

DESCRIPTION:
Weapon Locating Radar (WLR) has been primarily designed to locate hostile guns, mortars and rockets. WLR, in its secondary role, can track and observe the fall of shot from own weapons to provide corrections to own fire. Detection, location and tracking of the required targets is handled by the advanced algorithms and State-of-the-art hardware. It has an Electronically scanned Phased Array Antenna.

The ability to locate enemy weapons from its first round and transmit the data of the required target to counter fire elements for retaliatory strike before the target is repositioned is the key feature of the radar with built-in system BIT and a remote display.

COMPANY: BHIKAR ELECTRONICS LIMITED
CONTACT: info@bel.co.in
ISBN: 9957200455847

SPECIFICATIONS:
- Weapon Locating Range
- 85 mm or Larger Mortars: 4 to 20 kms
- 106 mm or Larger Guns: 6 to 35 kms
- Free Flight Rockets: 5 to 40 kms
- Simultaneous targets tracked: 7 (maximum)
- Time to bring Radar into action: 30 minutes
- Time to bring Radar out of action: 15 minutes
- Range: 50 km
- Frequency band: C band
- Elevation coverage: 0° to 60°
- Shear, Variations: As per JSS 55555
- EMCON: MIL STD - 412

BATTLE FIELD SURVEILLANCE RADAR - EXTENDED RANGE (BFSR-XR)

DESCRIPTION:
Battlefield Surveillance Radar - Extended Range (BFSR-XR) is a man portable, battery powered, state-of-the-art Pulse Doppeler Surveillance Radar capable of automatically detecting and displaying a diversity of moving targets such as pedestrians, group of men, vehicles, tanks, low flying helicopters, etc. It is light weight and operates 24 hours a day under all weather conditions.

It has a 3-Band Pulse Doppeler Radar with built-in test equipment (BITE) and built-in digital magnetic compass for North alignment. It is used for distant surveillance, battlefield surveillance, intelligence gathering, protection of sensitive sites and Prevention of infiltration and illegal immigration.

COMPANY: BHIKAR ELECTRONICS LIMITED
CONTACT: info@bel.co.in
ISBN: 9957200455847

SPECIFICATIONS:
- Range Accuracy: ±20 m/mms
- Range Resolution: ≤ 50 m
- No of tracked targets: up to 99
- Target identification: using Doppler tones
- Power supply: 24 Volts DC nominal
- Power consumption: 150 watts
- Weight of system including accessories: ≤ 30 kg
- Operating temperature: -20°C to +55°C
- Relative humidity: ≤ 95% at 40°C
- Altitude: ≤ 4500 meters
- Wind load (operational): ≤ 80 kmph

3D LOW LEVEL LIGHT WEIGHT RADAR (ASLESHA)

DESCRIPTION:
ASLESHA is a multi-functional ground based S-band 3D Low Level Light Weight Surveillance Radar for deployment in diverse terrains like plains, deserts, mountain tops and high altitude regions. Aslesha detects and tracks heterogeneous air targets, including helicopters, fighters and ships at low and medium altitudes. It can be easily transported by men, light vehicles and under slung by helicopter and is fast and easy to install and deinstall. It can track while scanning up to 100 targets and has full 3D capability using multi-beam technology and is enabled for networking with integrated other radars.

COMPANY: BHIKAR ELECTRONICS LIMITED
CONTACT: info@bel.co.in
ISBN: 9957200455847

SPECIFICATIONS:
- Environmental: JSS 55555 compliant
- Elevation coverage: 0 to 360°
- Power source: General with UPS and Battery
- Power consumption: ≤ 1.1 kw
- Accuracy
  - Range: ≤ 50 m
  - Azimuth: ≤ 0.50
  - Height: ≤ 500 m
- Resolution Range: ≤ 200 m, Azimuth: ≤ 70°
MILITARY VEHICLES

DESCRIPTION:
Ashok Leyland has vehicles for Defence in Light, Medium & Heavy Duty segments. Ashok Leyland provides different power packs for Armored Fighting vehicles and self-propelled guns. The vehicles are used for a variety of applications ranging from ambulances to recovery and transporters.

SPECIFICATIONS:
- Product range: 1T GVW (Gross Vehicle Weight) to 10T GVW (Gross Trailer Weight)
- Vehicles for Defence in Light, Medium & Heavy Duty segments
- Configuration of 4x4, 6x6, 8x8, 10x10 for high variability
- Medium Bullet Proof Vehicles (MPV 4x4)
- Mine Protected Vehicle (MPV 6x6)
- Personnel Protected Vehicle (PPV 4x4).

COMPANY: ASHOKLEYLAND
CONTACT: Info@ashokleyland.com

MINE PROTECTED VEHICLE (MPV)

DESCRIPTION:
The MPVs can carry upto a dozen fully armed personnel and have a provision for gun lights in bullet proof glass from where troops can take on targets outside. There is also a provision to install a rotating heavy gun on top of the vehicle. MPVs can move cross-country across most terrain even while taking fire and hitting back at terrorists. The vehicle consists of monocoque hull/body. The cabin assembly is built of high-quality steel alloy. Maximum safety of the crew from ballistic and other forms of attack is provided by virtue of the "V" shaped envelop of the body.

SPECIFICATIONS:
- Dimensions: 5.20 m (length), 2.10 m (width), 3.07 m (Height)
- Ground Clearance: 305 mm
- Speed: 85 kmph max
- Payload Speed: 50 kmph
- GVW/Fog Load: 3.3 tons/1400 kgs
- Range - 1000 km
- Protection Level: Mine Blast
- Protection Level: 14 kgs TNT under wheels
- Small Arms: 7.62 Sub Rifle firing from a distance of 10 meters on all sides of vehicle

COMPANY: OED
CONTACT: expert.od@inc.in
PINAKA MULTI-BARREL ROCKET LAUNCHER

DESCRIPTION:
The Pinaka Multi-Barrel Rocket Launcher (MRL) System is a high-tech, all-weather, long-range, area fire artillery system built on an H.9-8 chassis with high cross-country mobility. It is fitted with electro-mechanical outriggers with an auto leveling feature to stabilise the launcher during launch.

SPECIFICATIONS:
- Range: Over 40 km
- Ready-to-fire rockets: 12 (12 pods)
- Control of Firing: Auto/Manual
- Firing Modes: Single/Salvo
- Time to fire value of 12 rockets: 44 seconds
- Area coverage: 1000 m x 800 m
- Shoot and scoot capability: Fast coming in and out of action (<9 min)
- Crew: 4

COMPANY: LARSEN & TOUBRO LIMITED
CONTACT: info.defence@larsonsandtobro.com

SARVATRA BRIDGE SYSTEM

DESCRIPTION:
Sarvatra bridge system is an optimally designed scissor launch system with state of art hydraulic system which provides multi-span capability. It is a high mobility launching platform suitable for heaviest military traffic with advanced hydraulics which ensures continuous and smooth operation. Its double “A” shaped truss provides excellent stability and can be constructed with minimum crew.

SPECIFICATIONS:
- The vehicle is BS-3 (Euro III) 8-cylinder, ‘V’ type, air cooled engine, 625 HP (300 kw) @ 1800 rpm
- Swinging half axles for better cross country mobility
- Rear Cabin with dual drive facilities
- All wheel drive for maximum traction
- Left hand drive with 2x10 forward speeds
- High Mobility Launching platform
- Suitable for heaviest Military traffic
- Multi-Span capability upto 75 meters

COMPANY: BEML LIMITED
CONTACT: office@expert.benico.in
PONTOON BRIDGE SYSTEM

DESCRIPTION:
The bridge has a maximum load-carrying capacity of 60 tonnes and can transport military vehicles over water obstacles and man-made grounds. The midstream members are joined together to form the floating part and the bank. The shore members are connected to the midstream members and serve as the transition section between the floating part and the bank.

SPECIFICATIONS:
- The vehicle is 8 Cylinder, “V” type, Air-cooled engine, 402 HP/1800 rpm; Max Torque 1840 Nm @1200 rpm.
- Transmission: 10 forward and 2 reverse gears.
- Suspension: Front: Leaf trailing type and Telescopic shock absorbers. Rear: Leaf spring.
- Brakes: Two circuit drum & disc brakes with each type actuator.
- Steering: Mechanical, Power assisted by hydraulic steering.
- Bridge length: 227 meters

COMMUNICATION INTEGRATED ELECTRONIC WARFARE SYSTEM

DESCRIPTION:
The Communication Integrated Electronic Warfare System is an Integrated Electronic Warfare System and operates in HF and VHF band. It consists of three independent functional blocks also called as Central Centre (CC) blocks and comprises of total of 350 Endos and Carried Vehicular. Each entity is realised in a single ISD shelters installed on 5.5 ton vehicle. The system is designed to function in an integrated mode where CC entity is connected with other functional entities with secure infra-system communications with state-of-the-art ECCM features with suitable backup radios.

SPECIFICATIONS:
- Each CC block covers the functionality of Search, Detect, Monitor, Recording & Analysis of hostile threats of ETPR and Burst signals and also covers the functionality of Direction Finding, Location Finding and Jamming of the hostile threats.
- Each CC block is configured with seven types of functional entities namely CC, CCN, RFM, SDTH, ISHR, ISWU and RMRK.
- CCGR has capability to intercept and jam GSM and CDMA based cellular radio transmissions.

COMPANY: BHEL LIMITED
CONTACT: office@bhel.com.in

COMPANY: DHANANJAY ELECTRONICS LIMITED
CONTACT: info@dhel.com.in
GROUND-BASED MOBILE ELINT SYSTEM (GBMES)

155-MM HE-ERFB BT

- **DESCRIPTION:** Rapid and accurate firing at long ranges to attack the ground targets.
- **SPECIFICATIONS:**
  - **Maximum Range:** 30 km
  - **Combat rates:** VS - 3/2 CI & WMS 5/2.5 A
  - **Combat Charge:** Charge 6 & Charge 9
  - **Shell Life:** 10 years

INSTAVEST G6 ADVANCED TACTICAL VEST WITH QUICK RELEASE FASTENERS

- **DESCRIPTION:** The 6th generation Instavest offers protection from handgun ammunition, RGCC’s and FSP’s at vastly improved energy absorption and dissipation levels. The unique patented quick release (QR) system in Instavest G6 enables swift donning and doffing of the vest in emergency situations. It offers ballistic protection from handgun ammunition, RGCC’s and FSP’s at vastly improved energy absorption and dissipation levels.
- **SPECIFICATIONS:**
  - **Weight:** 5.5 kg
  - **Made from 6th generation ultra-lightweight Armacell armour

ADVANCED COMBAT HELMETS

- **DESCRIPTION:** Ballistic advanced combat helmets are manufactured using special trauma reduction technology that results in just 10 mm shell thickness which is nearly 45% lower in comparison to a standard helmet. The New Helios®-NG-T+ technology used in MINUIT helmets ensures zero compromised areas in the helmet shell providing uniform protection across the ballistic shell perimeter, thus eliminating the risk of fatal injuries due to secondary fragments as compared to traditional ballistic helmets in situations where the high velocity threat hits the bullet.
- **SPECIFICATIONS:**
  - **Frame & UV resistant.
  - **Manufactured using two layers of high impact material as per 2005/EC/EC.
  - **Jetliner rubber edge guard.
  - **Compliant with ANSI, G Specs, and British standard etc.
  - **Level IIIA protection with V50 up to 700 m/s

BALLISTIC SHIELDS

- **DESCRIPTION:** Handheld and trolley mounted ballistic shields with large view ports and transparent armours offer enhanced coverage during counterterrorism, insurgency and riot control operations.
- **SPECIFICATIONS:**
  - **Made from non-bulbous materials.
  - **Fire & UV resistant.
  - **Ballistic glass or view port for clear vision and enhanced field view (FV).
  - **Abrasion resistant neoprene rubber edges.
  - **Available in flat or curved (75° & 540°) geometry.
  - **Ambidextrous handle with nylon neck and shoulder strap.
**BALLISTIC PROTECTION**

- **Naval Protection**
- **Tank & Artillery Ammunition**
- **Aircraft Protection**
- **Land Protection**

**DESCRIPTION:**
- Advanced Ceramic RAG (CeraSTP) Plates
- Tiles for Light Weight Armour
- Personal Ballistic Protection
- Ballistic Vest & Jackets
- Armour Plates
- Ballistic Helmets
- Ballistic Shirts
- Light weight armour solutions for Aircraft/ Helicopter/ Vehicle/ Boat
- Tank, Artillery and Marine Munitions

**SPECIFICATIONS:**
- Body Armour & Ballistic Shells: Protection of NIJ Level IIIA up to IV
- Armour Plates: Stand alone or IOW with protection of NIJ Level III, III SF or IV, all shapes and sizes
- Ballistic Helmets: For protection of NIJ Level IIIA, III, III+ & IV, armoured helmets, all designs (PASGT, ACH, MICH, TROK)
- Armour solutions: For protection of STANAG Level – I to 5 and Blast Protection
- Tank armour: 105 mm and 135 mm (ISAPDO and HESH)
- Artillery ammunition: 105 mm and 155 mm, 0.2 & 0.5, 100 mm (FVG and RVG)
- Mortar Bomb ammunition: Augmented Cartridges and Transparent Cylindrical Shells

**COMPANY:** USM CARAPACE ARMOR
**CONTACT:** contact@usmarmour.com

---

**HIGH ENERGY MATERIALS & MULTIPLE MODE HAND GRENADE**

**DESCRIPTION:**
- HM2, RDX, TNT and their Compositions have multiple uses in variety of Military applications and are used in manufacture of warhead composition for ammunition. TNT is used in filling of Artillery Shells, Mines, and Boosters etc.
- Multi Mode Hand Grenade offers numerous advantages over conventional Grenade in terms of Safety, Dual Mode Capability and lethality.

**SPECIFICATIONS:**
- HM2: MIL-DTL-55446C, Grade B, Class 1 to 6
- RDX: MIL-DTL-8390, Class 1 to 5
- TNT: MIL-DTL-5540C
- Hand Grenade:
  - Operating Temperatures: -20 °C to +55 °C
  - Additional Safety to the soldier through Arming Delay
  - Easy to prime and on-prime

**COMPANY:** Solar Industries India Limited
**CONTACT:** solar@solargroup.com

---

**CMDS (COUNTER MEASURE DISPENSING SYSTEM)**

**DESCRIPTION:**
- A state of the art Shunt and Flame Dispensing System, CMDS is a micro-controller based onboard defensive system. It can be activated either by pilot or RWR. This protects the aircraft against Radar guided and IR seeking missiles (air and ground launched) by dispensing shunt and/or flame payloads.

**SPECIFICATIONS:**
- Provides self-protection to the aircraft against Radar Guided and heat seeking missile launched from Air or Ground.
- Dispenses Decoy for all Heat/ IR seeking missile directed against Aircrafts/ Helicopters

**COMPANY:** BARRAT DYNAMICS LIMITED
**CONTACT:** bbd@bdil-india.in

---

**HAND HELD / HELMET MOUNTED NIGHT VISION DEVICES (MODEL: NETHRA)**

**DESCRIPTION:**
- NETHRA is an uncooled thermal sight which can view through dust, smoke, fog, haze and other turbulence obstructions. NETHRA senses only heat and not light, it will not shut down or "blaze" when hit by direct light.

**SPECIFICATIONS:**
- Spectral Range: 8-14 um
- IFA Resolution: 640 x 480 or better
- Lightweight: under 3.9 kg
- Can be used as a Weapon Mounted Sight / Handheld Thermal Sight / Helmet Mounted Sight

**COMPANY:** ALPHA DESIGN TECHNOLOGIES PVT. LTD.
**CONTACT:** alphacorp@utl.co.in
ANTI-SUBMARINE WARFARE CORVETTE

DESCRIPTION:
Anti-Submarine Warfare Corvette (ASWCV) is a初めての Weapon with Stealth features. The Composite Material Superstructure reduces Weight, Magnetic signature and RCS (Radar Cross Section). Hull, equipment & equipment foundation is designed for low Acoustic signature. Advanced heat signature management techniques such as IRSS device has been installed for reduced signature suppression thus enhancing stealth capability of the platform. Ship is also capable to operate in NBC Environment (Nuclear, Biological & Chemical).

SPECIFICATIONS:
- Length Overall (LOA): 109.10 m
- Breadth (max): 14.17 m
- Depth: 6.9 m
- Displacement: 3,900 tonnes
- Max Speed (knots): 25.00

COMPANY: Garden Reach Shipbuilders & Engineers Limited (GRSE)
CONTACT: mmarketing@grse.co.in

OFFSHORE PATROL VESSEL (OPV)

DESCRIPTION:
The Offshore Patrol Vessel is equipped with sophisticated state of the art of weapons and sensors viz Rollers anti-aircraft gun, Radar Dreeser 3405 search radar and IHSS 2450 navigation radar. The 1540 tonnes vessel is the biggest OPV developed at IHSL. It has state of the art communication and navigation system.

SPECIFICATIONS:
- Length: 105.00 m
- Breadth: 11.50 m
- Speed: 22 knots Speed achieved @ 85% MCR
- Range: 3000 Mts
- Power: 1845 kw at 900 rpm

COMPANY: HINDUSTAN SHIPYARD LIMITED
CONTACT: mprojectinfo@hsvinag.in

ADVANCE OFFSHORE PATROL VESSELS

DESCRIPTION:
Advanced Offshore Patrol Vessel (AOPV) is designed for patrolling and policing maritime zones, search and rescue, pollution control, external fire fighting and disembarkation & operation of Advance Light Helicopter for long range all time search and surveillance. The Vessel has a rail-less Non-Translation system for Helicopter landing. This provides a clear deck for line-operations without the attendant roll-fittings. A-State-of-the-art navigation & communication equipment with Integrated Bridge System is provided on board. Modular Mast options are available for higher weapon fits. It is a multiple role capable, cost effective product, comparable to any other similar internationally available product. The basic platform is fuel efficient and cost effective and can be easily adapted to any special sea mission requirements of the Customer.

SPECIFICATIONS:
- Main Engine: 2 x Diesel Engines (12 x 9000 kw)
- Speed: Not less than 25 Knots
- Endurance: Not less than 6000 miles
- Armament: 1 x 30mm Gun with 3 x 25mm Guns with FCS
- Aviation: Operation & disembarkation of 2 x 12.7mm Gun with FCS

COMPANY: GSI SHIPYARD LIMITED
CONTACT: degp.office@gshipyard.com
MSH 184/2004/2901
FAST PATROL VESSELS

DESCRIPTION:
Primarily designed for patrolling, anti-smuggling and anti-terrorist operations, it can also support the Navy during wartime as a coastal convoy escort and as a communication link. The hull of the vessel is all steel and strong enough to withstand continual heavy sea conditions. Fully air-conditioned accommodation is provided for 35 men on-board. These vessels have been proven during challenging situations and national disasters like tsunamis. Two Fast Patrol Vessel have been exported to Mauritius.

SPECIFICATIONS:
• Length Overall : 50.44 m (Base Waterline)
• Breadth (mid.) : 13.50 m
• Displacement : 270 tons
• Main Engine : 3 x MTU-16V2000 M 90
• Total Power : 4 x 2220 kw
• Speed : 35 knots
• Endurance : 8500 Nm at 12-14 knots
• Range : 1500 Nm at 12-14 knots
• 7 days

COMPANY : GOA SHIPYARD LIMITED
CONTACT : fpg_office@goashipyard.com
MSR 1940729472527

HIGH SPEED PATROL BOAT

DESCRIPTION:
The boat is a daylight surveillance and investigation vessel operating in shallow coastal waters in and around harbours and anchorage. The boat is highly seaworthy and fast and is able to sustain operations up to sea state 4 in open seas and also in breaking seas above the coast while in shallow water. The boat has propulsion & power generation, lifesaving & ballistic protection and other engineering and electrical systems to carry out safe and reliable operations.

SPECIFICATIONS:
• Length Overall : 35.00 m (excluding aft platform)
• Speed : 30 knots
• Range : 8 hours in the area of operation
• Main Engine : 2 x Caterpillar C32 A/CERT 500 BHP @ 2500 rpm inboard diesel engines

COMPANY : GOA SHIPYARD LIMITED
CONTACT : fpg_office@goashipyard.com
MSR 1940729472529

FAST INTERCEPTOR BOATS

DESCRIPTION:
The Fast Interceptor Boat (FIB) is capable of performing high speed pursuits and interception in various border protection roles including anti-smuggling, anti-illicitation, fisheries, patrol and immigration and anti-terrorist activities. The vessel can also be used for search and rescue operations.

The boat hull is constructed making use of most advanced FRP construction technology. The FIB is capable of surviving at sea state 6 and capable of withstanding 4G acceleration and can withstand rough waters and choppy seas. Even at its top speed, it can be brought to a grinding halt within seconds. The boats are fully air-conditioned for crew comfort during prolonged patrolling duties.

SPECIFICATIONS:
• Speed : 35 knots
• Range : 350 Nm with 25% reserve
• Main Engine : 2 x Cummins DSCBR.3 500101 BHP @2500 rpm Diesel Engine
• Propulsion : 2 x Waterjet Kawasaki FS110

COMPANY : GOA SHIPYARD LIMITED
CONTACT : fpg_office@goashipyard.com
MSR 1940729472605
INSHORE PATROL VESSEL (IPV)

DESCRIPTION:
IPV is designed and developed for coastal patrolling, anti-smuggling, search and rescue operations, fisheries protection, monitoring, and providing communications links. It has provision for dynamic reorientation of the ship in the planning mode with the use of interceptors.

SPECIFICATIONS:
- LBP: 44 m
- Displacement: 390 tonnes
- Speed: 13.5 knots
- Endurance: 3500 Nm

COMPANY: HINDUSTAN SHIPYARD LIMITED
CONTACT: mprojexec@hseng.in

LANDING CRAFT UTILITY

DESCRIPTION:
Landing Craft Utility (LCU) are deployed to transport troops and equipment from ship to shore and vice versa. Following are the salient features of the LCU platforms:
- Equipped with Bow Ramp for handling combat equipment and vehicles.
- Arrangements for transporting and stowing equipment/vehicles on main deck.
- Ballast tanks to achieve desired trim and for smooth maneuvering/non-maneuvering operations.
- Arrangement to pull in/pull out stranded vehicles on beach using Tank housing capstan installed on main deck.
- Integrated Platform Management System (IPMS).

SPECIFICATIONS:
- Length Overall: (m): 67.8
- Breadth, moulded: (m): 11
- Depth up to Ball: (m): 3
- Draught (Length): (m): 1.70
- Speed: (knots): 15
- Displacement: (t): 810 (approx.)
- Main Engines: (hp): 2 x 1450
- Diesel Generators: (hp): 2 x 250, 1 x 90
- Armament:
  - 1 x 40 mm Gun
  - 1 x 12.7 mm MG
  - 1 x 7.62 mm MG
  - 2 x 0.50 cal MG
  - 4 x 81 mm Mortar

COMPANY: Garden Reach Shipbuilders & Engineers Limited (GRSE)
CONTACT: marketing@grse.in

COMPANY: HINDUSTAN SHIPYARD LIMITED
CONTACT: mprojexec@hseng.in
VOITH TUG

DESCRIPTION:
Tug is designed and developed for towing and assisting naval ships, submarines and craft in harbours and restricted waters; conducting fire fighting operations, carrying out search and rescue operations and tow ships up to 50000 displacement in harbour; towing of two or more small ships (450 tonnes displacement).

SPECIFICATIONS:
- LOA : 44.55 m
- Bollard Pull : 50 ton bollard pull achieved @ 85% MCR
- Speed : 12 knots
- Endurance : 72 hrs with reserve capacity

COMPANY : HINDUSTAN SHIPYARD LIMITED
CONTACT : rprojectco@hsilag.in

TORPEDO ADVANCED LIGHT (TAL)

DESCRIPTION:
It is a state-of-the-art underwater weapon. The homing and guidance technique includes proportional navigation, pure pursuit and interception. Its power source is a seawater activated battery and thrust is provided by means of corks rotating propulsor motor.

SPECIFICATIONS:
- Operating Depth : 10 m-300 m
- Maximum speed : 32 knots
- Endurance : 6 min
- Range : 6 km
- Weight : 270 ± 5 kg (warhead version/ 197 kg Exercise version)
- Explosive : 40 kg
- Dia : 124 mm ± 1 mm
- Length : 2750 mm ± 5 mm

COMPANY : BHARAT DYNAMICS LIMITED
CONTACT : bdel@bdli-india.in
HEAVY WEIGHT TORPEDO (VARUNASTRA)

DESCRIPTION:
It is a state-of-the-art ship launched weapon. It weighs around 3.50 tonnes and carries about 250 kg of explosives at a speed of 38 nautical miles per hour. Its circular trajectory makes it difficult for the enemy to target it, and it smashes the target (underwater) from both top and bottom. Equipped with the most advanced automatic and remote-controlled guidance system, the weapon uses its own intelligence in tracing the target. It is Electro-power.

SPECIFICATIONS:
- Speed: 27 & 40 knots with variable facility
- Homing: Acoustic, Active, Passive, Mixed & Imaging
- ACOM: SOBI (Sensor Objective Identification)
- Guidance: Pursuit & Predictive
- Proximity Fuse: Acoustic
- Warhead: Conventional/Omnisensitive Munitions

COMPANY: BHARAT DYNAMICS LIMITED
CONTACT: bbd@bdl-india.in

SUBMARINE FIRED DECOY (SFD)

DESCRIPTION:
Submarine Fired Decoy acts as a preferred target in presence of own submarine to a passive or active homing torpedo.

SPECIFICATIONS:
- Can function as a preferred target
- Offers zero response time for launching
- Deployed from signal cartridge launcher tube of a submarine
- Calibre: 190 mm
- Weight: 8.60 kg
- Power Source: 9.6V Primary Battery
- Endurance: 20 mins

COMPANY: BHARAT DYNAMICS LIMITED
CONTACT: bbd@bdl-india.in
CRN 91 NAVAL GUN

**DESCRIPTION:**
CRN 91 Gun is a modular based, flexible and effective weapon intended for use against armoured targets and air targets flying at low altitudes. The range is 2 km for AP and 4 km for HE projectiles. The canister can hit slow moving objects in air at a height of 2000 m and has a total range of 3500 m.

**SPECIFICATIONS:**
- **Diameter:** 2700 mm
- **Height:** 2100 mm
- **Designation:** 3A42
- **Caliber:** 30 mm
- **Rate of Fire:** Single - 200 to 300 rounds per min, Slow - 550 rounds per min
- **Breech Type:** BPM 2-42

**CONTACT**
expat.atb@nic.in

---

KAVACH MOD-II CHAFF ROCKET LAUNCHER

**DESCRIPTION:**
The KAVACH MOD-II system is designed to counter the threat of various anti-ship missiles by using chaff dispensers. The system provides soft kill defence in a three-layered defence scheme. Multi-barrel chaff rocket launcher is available both in Long Range and Short Range.

**SPECIFICATIONS OFLauncher:**
- **Overall Weight:** 1695 kg
- **Overall Height:** 2790 mm
- **Overall Width:** 1100 mm
- **Overall Length:** 1300 mm
- **Mode of operation:** Power and Manual
- **Bore of barrel:** 105.6 X 0.4 mm

**CONTACT**
expat.atb@nic.in

---

ASW ROCKET LAUNCHER

**DESCRIPTION:**
The ship-based anti-submarine weapon system is capable of firing 222 mm depth charge rockets at submerged targets, in single and salvo mode, from remote as well as local control stations. The launcher has a stabilised naval launch platform with two 3-axis all-electric servo drives. It has been developed for INS and PFR class ships.

**SPECIFICATIONS:**
- **Capable of firing 12 radially arranged depth charge rockets**
- **Supported by Rocket Fired Carpines**

**CONTACT**
info.defence@larsentoubro.com
TORPEDO LAUNCHERS

DESCRIPTION:
L&T has designed both lightweight and heavyweight torpedo launchers for Anti-Submarine warfare operations. The lightweight torpedo launchers (TTL) have triple tube configuration and are installed on P44A class ships of the Indian Navy. The heavyweight torpedo launchers (HTTL) have twin tube configuration and are installed on P45A and P49 class ships. The system is designed with a Power PC-based controller.

SPECIFICATIONS:
• TTL system: Firing is achieved by injecting high pressure air at high mass flow rate into the tube.
• HTTL: The system is designed for single shot and salvo firing of torpedoes from a remote station through the IAC Mid-C Fire Control System.

WM-18 ROCKET LAUNCHER (BEACH CLEARING SYSTEM)

DESCRIPTION:
This weapon system designed for beach-clearing by LST class of ships before executing amphibious operations. The weapon system comprises of two launcher modules, one for each port and starboard. The Rocket Launcher WM-18 can be slaved to a Director Sight and is equipped with a weapon mounting system.

SPECIFICATIONS:
• Comprises two mounts of launchers
• Each launcher mount is controlled by a closed-loop electro-hydraulic control system and is designed for automatic compensation of roll and pitch motions of the ship, which holds the weapon axis fixed with respect to the target.

COMPANY: LARSEN & TOUBRO LIMITED
CONTACT: info.ltl@larstobin.com
53,000 DWT BULKER

DESCRIPTION:
Designed and developed for carriage of 53,000 Dwt bulk cargo materials, vessel is accommodated with 5 cargo holds and equipped with heavy cranes for loading and unloading cargo. Constructed and equipped to carry dry bulk, break bulk, grain, metal concentrates, ore ore, scrap metal, coal, bauxite, salt and sugar, general cargo such as steel products, homel products, package freight and bulk liquid cargo, besides long cargo like pipes and bagged cement and bagged cargo etc.

SPECIFICATIONS:
- LOA : 350.00 m
- Displacement : 65080 tonnes
- Speed : 18 knots speed achieved @ 85% mcr
- Power : 9480 kw

COMPANY - HINDUSTAN SHIPYARD LIMITED
CONTACT : nprojectinfo@shipyard.in

FLOATING DOCK

DESCRIPTION:
The L&T Floating Dock is ideal for docking of Naval Assets. Designed for operation alongside a jetty with a mooring system, it meets the stringent Military Specifications and Classification Society rates. The Floating Dock is capable of meeting end-to-end requirements for repairs of high-end warships and submarines. It also provides accommodation to its crew and the crew of the docked ship, thereby becoming a critical enabler for the Naval Forces. Other features of Floating Dock are as follows:
- Fully-automated Ballast Control System
- Constructed of military grade steel
- Multiple docking capability – warships and submarines
- Retractable cover for all-weather operations
- Fully-astaerated hoisting-in system
- Services the needs of docked ships and ships berthed alongside
- Redundancy of critical systems

SPECIFICATIONS:
- Length overall : 145 m
- Breadth between inner walls : 28 m
- Lifting capacity : Up to 1000 T
- Draught of docked ship : 7 m
- Accommodation capacity : 113 persons

COMPANY - LARSEN & TOUBRO LIMITED
CONTACT : info.defence@larsentoubro.com
ADVANCED COMPOSITE COMMUNICATION SYSTEM (CCS MK IV)

**DESCRIPTION:**
The Advanced Composite Communication System (CCCS) is an IP based, highly flexible Integrated Communication System designed to provide quick and reliable communication over VLF/MF/HF and VHF bands on board Naval Ships and Submarines for facilitating ship-to-ship, ship-to-shore and ship-to-air communication.

It provides the end user, central control for allocation & control of Radios, monitoring of status and power, other supervisory features. It facilitates remote operations of radio, intercom and radio group working.

**SPECIFICATIONS:**
- Broadcast reception in VLF band
- Transmission and reception in HF band for long range communication
- Transmission and reception in VHF band for short and medium range (LOS) communication
- Data transmission/reception through High Speed Data Modem on HF link
- SATCOM Equipment
- Remote radio communication/control and intercom over IP technology

**QUESTION:**
What is the purpose of the Advanced Composite Communication System (CCCS)?

**ANSWER:**
The Advanced Composite Communication System (CCCS) is designed to provide quick and reliable communication over VLF/MF/HF and VHF bands on board Naval Ships and Submarines for facilitating ship-to-ship, ship-to-shore and ship-to-air communication. It includes broadcast reception in VLF band, transmission and reception in HF band for long range communication, transmission and reception in VHF band for short and medium range (LOS) communication, data transmission/reception through High Speed Data Modem on HF link, SATCOM equipment, and remote radio communication/control and intercom over IP technology.

**COASTAL SURVEILLANCE SYSTEM**

**DESCRIPTION:**
The protection of Exclusive Economic Zone (EEZ) particularly of coastal line has become important in view of spreading of illegal fishing, poaching, smuggling and also to protect the sea environment. This necessitates a need for surveillance system for detection, classification and identification of vessels using the territorial waters and also actively help in search and rescue operation.

The Surveillance System comprises of a Network of Radars with a centrally located Central Centre and Communication System for Data / Voice connectivity between Radar Stations and Central Centre. The important task of Surveillance System is to detect and identify surface targets / low-flying Helicopters / Aircraft. The classification of targets is made based on the speed data. In order to facilitate identification of targets, Automatic Identification System (AIS) is integrated into Radar network. The communication system enables transfer of Radar track data and AIS track of all the surface targets to the Central Centre. An integrated Radar picture of surface and air targets will be available on the display at the Central Centre. The surveillance system also provides communication facility of Data / Voice connectivity between individual Radar stations and Central Centre. For observation and monitoring of close range targets, Low Light TV Cameras (LLTV) with zoom facility with suitable pan & tilt mechanisms can be deployed at each radar station as option. This provides a visual image of surface targets up to a range of 12 kms.

**SPECIFICATIONS:**
- Surveillance Radar is a 3 ft slotted waveguide array
- Automatic identification system works by integrating standard VHF Transceiver with GPS receiver
COMBAT MANAGEMENT SYSTEM (CMS)

DESCRIPTION:
CMS automates tactical data handling from the ship’s sensors and provides a Decision support system to the command. It gathers data from ships / helicopters / aircrafts in the fleet through data link to collate, process, integrate and present a comprehensive tactical picture of the area of operation and allied equipment, aircrafts, vessels, inter-vehicles, command & control centers. It displays tactical data (both real & processed) from various sensors in real time. It does continuous identification and classification of air surface & sub-surface targets, carries out threat assessment and automatically advises the command on course of action when authorized by events occurring in the equipments that are integrated.

SPECSIFICATIONS:
- Designates sub-surface, surface and air targets to the fire control system
- Monitors the execution of weapon firing and displays the status of weapon's communication etc. after firing
- Efficient recording of events, operator commands & data to enable reconstruction of scenario at later time
- Facility for off-line rap preparation and loading of charts
- Adequate redundancy provided by fault tolerant software
- Capable of simulating environment comprising of all sensors to present real situational scenario for training of the operator
- Easy to use diagnostics for off-line health monitoring, maintenance of system and verification of hardware health
- Flexible architecture to facilitate additional detection of system components on different types of platforms

COMPANY: BHARAT ELECTRONICS LIMITED
CONTACT: info@bel.co.in

ELECTRO OPTICAL FIRE CONTROL SYSTEM - UPGRADE 2 (EOFCS-U2)

DESCRIPTION:
The EOFCS is a compact, 2 axes stabilized, high performance system for control of short and medium range naval gun mounts. It has capability of panoramic definition, identification and gun engagement of all types of surface and air targets, such as anti-ship sea-skimming missiles, high speed missile and fast moving attack craft (IFAC) and provides efficient and comprehensive control of short and medium range guns in anti-air, surface and Naval Gunfire Support (NGS) engagements.

SPECIFICATIONS:
- Azimuth Limits: Panoramic
- Elevation Limits: -80° to +85°
- TV Camera - Continuous Zoom from 1600 x 1200 to 0.70(Y x 1.18V)
- Thermal Imager - Continuous 8x Optical Zoom
- Laser Range Finder - Eye safe type with beam wavelength of 1.54 µm. Beam width = 0.3", SRBIUM glass
- Operating Temperature: -10°C to +50°C
- EMIL/SC - As per MIL STD 461E
- 2 axes Gyre Stabilized

COMPANY: BHARAT ELECTRONICS LIMITED
CONTACT: info@bel.co.in
**LCA TEJAS**

**DESCRIPTION:**
Tejas Indian Light Combat Aircraft (LCA) together with its variants, is the smallest and lightest Multi-Role Supersonic Fighter Aircraft in its class. This single engine, Compound-Delta-Wing, Tailless Aircraft is designed and developed by ADA with HAL as the principal partner along with DRDO, CSIR, BEL, BHADA, OFB & IN to meet diverse needs of the Indian Air Force (IAF) and Indian Navy (IN). Tejas is an amalgamation of contemporary concepts and technologies such as aeroelastic stability, fly-by-wire Flight control, advanced glass cockpit, integrated digital avionics systems and advanced composite materials for the airframe.

**SPECIFICATIONS:**
- Max Speed : Supersonic at all altitudes
- Service Ceiling : 50,000 ft
- ‘g’ Limits : -2/3.5

**COMPANY :** HINDUSTAN AERONAUTICS LIMITED
**CONTACT :** marketing@hal-india.com
**MSI :** 1510720472325

**LIGHT COMBAT HELICOPTER (LCH)**

**DESCRIPTION:**
Light Combat Helicopter (LCH) is a twin-engine, dedicated combat helicopter of 5.8 tonne class. This helicopter has a narrow frontage and a tandem configuration for Pilot and Co-pilot/ Weapon System Operator (WSO). It incorporates a number of stealth features such as reduced visual, aural, radar and infra-red signatures and crashworthy features for better survivability.

The major features of LCH are:
- Glass Cockpit
- Crashworthy bottom structure
- Crashworthy podded weapon pylons with tail wheel landing gear
- Cowled full power for low Radar Cross Section
- Integrated Dynamic System
- Hinge less Main Rotor / Bearing less Tail Rotor
- Anti-Resonance Isolation System
- Integrated Architecture and Display System (IADS)
- IR Suppressor
- Counter Measuring Dispensing System (CMDS)
- EOD pod, Helmet Mounted Display System & EW suite
- 22 mm Gun, 70 mm Rocket & Missiles - Air to Air Missiles (ATAM) & Air to Ground Missiles (ATGM)

**SPECIFICATIONS:**
- MTOW : 5.800 kg
- Max Speed : 268 kts
- Range : 550 km
- Service Ceiling : 6.5 km
- Oblique climb rate : 12 m/s
- Power Plant : SH7000 engine (2 x 800 KVA)
- Power is 1212 kw
ADVANCED LIGHT HELICOPTOR (ALH) - DHRUVA

DESCRIPTION:
ALH Dhruv is a S.5 tone class category helicopter with side by side cockpit configuration, built to FAR 29 specifications. This helicopter is fully designed, developed and manufactured to meet the requirements at both, military and civil operations. Dhruv has gone through various upgrades to the present Dhruv MK IIIY configuration, powered by a Shakti Engine. The various roles of ALH are: Passenger / Commuter Role, VIP Travel, Casualty Evacuation, Under Slung Load, Rapid Deployment of Forces, Logistic Air Support, Search and Rescue, Training.

SPECIFICATIONS:
- Length: 15.8 m
- Width: 13.2 m
- Height: 4.98 m
- Helicopter Main Rotor and Rotorless Tail Rotor
- Integrated Dynamic System (IDS)
- Anti-vibration and Vibration Isolation System (AVIIS)
- 4-Axis Digital Automatic Flight Control System (AFC7)
- Integrated Architectural Display System (IADS)

COMPANY: HINDUSTAN AERONAUTICS LIMITED
CONTACT: marketing@hal-india.com
WSN 152672035441 / 152672035442

CHEETAL

DESCRIPTION:
Cheetal Helicopter is a single-engine, multi- mission helicopter in 2-tone class with a modern fuel efficient high performance engine, controlled by Fully Authority Digital Electronic Control (FADEC) System. It has automatic engine control by Electronic Backup Control (EBAC) system in the event of FADEC failure.

Various roles of Cheetal are: Passenger transport, Casualty Evacuation (CASEVAC), Reconnaissance, Logistics Air Support, Search and Rescue (SAR), Underwater subsea Operations

SPECIFICATIONS:
- Length: 12.92 m
- Width: 2.88 m
- Height: 3.09 m
- MTOW: 1900 kg
- Cruise Speed: 352 km/h
- Range: 440 km
- Endurance: 3.50 hr
- No. of Passengers: 3 + 2

COMPANY: HINDUSTAN AERONAUTICS LIMITED
CONTACT: marketing@hal-india.com
WSN 152672047449
DORNIER (Do-228)

* Maritime Surveillance
* Maritime Prevenion
* Training
* Aerial Survey
* Search and Rescue
* Commader Transport
* Calibration of airport NAV-GOM Aids

COMPANY: HINDUSTAN AERONAUTICS LIMITED
CONTACT: marketing@hal-india.co.in
MSM 1510/20471793

DESCRIPTION:
The 19 seater Do - 228 aircraft is a highly versatile multi-purpose light transport aircraft. It has been developed specifically to meet the manifold requirements of utility and commuter transport, three tier services and air-traffic operations, coast guard duties and maritime surveillance. Do 228 can be deployed for various roles like

- Remote Sensing Applications
- Casualty Evacuation
- Executive Transport
- Cargo & Logistical Support

SPECIFICATIONS:
- Wing span: 16.97 m
- Overall length: 16.56 m
- Overall Height: 4.86 m
- Max. take off weight: 6400 kg
- Max. cruise speed: 420 km/hr
- Max. range speed: 393 km/hr
- Rate of climb: 9.7 m/s

COMPANY: OFB
CONTACT: expert.ofb@ofb.in

BRAKE PARACHUTE FOR SU-30 A/C

DESCRIPTION:
The brake parachute is intended to reduce the Aircraft landing run length or aborted takeoff.

SPECIFICATIONS:
- Basic material: Fabrics nylon 93 gsm endued conforming to spcnc.
- Max. Emergency Landing Speed: 300 knots (88.3 m/s)
- Max. Operational Load: 30400 lb (25610 kg)
- Max. mass of parachute system: 32 kg
- Effective length of rigging lines: 6680 mm
- Length of connecting link: 4000 mm
- No. of rigging lines: 32
- Performance characteristics:
  - A/C Normal Landing Speed: 292 knots (82.2 m/s)
  - A/C Emergency Landing Speed: 300 knots (88.3 m/s)
  - Max. Operational Load: 25400 lb (25610 kg)

COMPANY: OFB
CONTACT: expert.ofb@ofb.in
SECURE VHF HANDHELD RADIO LVP 341

DESCRIPTION:

LVP 341 is a VHF handheld radio with in-built high grade digital security is compact, lightweight, user friendly with minimum number of controls and interface is provided for Headgear and Crypto key loading. The radio set is provided with three types of antennas for use in different types of terrains and ranges.

SPECIFICATIONS:

- Frequency Range: 136 to 174 MHz
- Channel spacing: 25 kHz
- Type of operation: FM, Simplex
- Battery: Secondary, 7.2 V Ni MH & Li-Ion (3.5 Ah)
- Primary LiSO2 battery pack
- Operating temperature range: -30°C to +55°C
- EMV / EMC: Complies with MIL-461 C

COMPANY: BHARAT ELECTRONICS LIMITED
CONTACT: info@bel.co.in

SECURE UHF HANDHELD RADIO LUP 291

DESCRIPTION:

LUP 291 is a UHF handheld radio with in-built high grade digital security is compact, lightweight, user friendly with minimum number of controls and interface is provided for Headgear and Crypto key loading. The radio set is provided with helical and magnetic mount antennas.

SPECIFICATIONS:

- Dimensions: 60 mm x 40 mm x 130 mm (H)
- Weight: 400gms (with standard 5 Ah Li-Ion)
- Frequency range: 403 to 470 MHz
- Channel spacing: 12.5 kHz / 25 kHz
- Type of operation: FM, Simplex
- Battery: 3.2 V Primary and Secondary batteries
- Operating temperature range: -30°C to +55°C
- EMV / EMC: Complies with MIL-461 C
- 32 Pre-set crypto keys: 11 manual key

COMPANY: BHARAT ELECTRONICS LIMITED
CONTACT: info@bel.co.in

SOFTWARE DEFINED HANDHELD RADIO

DESCRIPTION:

The Handheld Transceiver is developed to meet the required short-range ground to ground, ground to ship and ship to ship communication needs with protection against Electronic Counter Measures (ECM). The radio is provided with high-grade crypto frequency hopping. It has in-built GPS with External Antenna.

SPECIFICATIONS:

- Dimensions: 271 mm x 86 mm x 19 mm (with battery)
- Weight: 450 gm (with battery)
- Frequency Band: UHF (325 to 470MHz), 2W
- POWER SUPPLY: 7.4V DC (minimally) Rechargeable Battery: Li-Ion (2.8AH)
- ENVMC : MIL-STD-461 F compliant
- Operating Temperature: -20°C to +55°C

COMPANY: BHARAT ELECTRONICS LIMITED
CONTACT: info@bel.co.in

HF TRANSCEIVER LHP 265

DESCRIPTION:

The LHP 265 is an advanced DSP based lightweight 20W HF SSB manpack radio. It provides a complete solution in the short-range communication requirements in the crowded HF band. It provides Voice, Data, Telegraphy and Flash message communication. Communication reliability is improved by means of Automatic link establishment (BIST CALL), which enables real-time selection of optimum channel frequency. For reliable transmission of critical information under EW condition, the radio provides secure transmissions and anti-jamming protection by means of frequency hopping. The radio can be used with wide range of antennas, including a lightweight inflatable whip for portable operations, dipole, long wire and many other antennas for static operation.

SPECIFICATIONS:

- Dimensions: 85 (L) x 225 (W) x 250 (H) mm
- Weight: 3.9 kg (without battery)
- Frequency range: 1.60 to 1.9999 MHz at 5 kHz spacing
- Power Consumption: 1.05W in Standby, 21W in Transmit
- Operating Term Range: -30°C to +55°C
- EMV / EMC: MIL-STD-461 F compliant
- Receives: SSB / AM / NBFM
- 100 preset channels

COMPANY: BHARAT ELECTRONICS LIMITED
CONTACT: info@bel.co.in
VHF FF TRANSCEIVER LVP 346

DESCRIPTION:
VHF FF Transceiver is a new generation of Fixed Frequency radio in the frequency band of 190MHz to 87.575MHz. It is a lightweight, compact design, high performance VOSIC and DETA communication equipment for Manpack, Mobile and Static use. The design is based on the Digital Signal Processor (DSP), Direct Digital Frequency Synthesizer (DDFS) and high-end Micro controller (AVR). The radio works in fixed frequency mode with built in high-grade digital memory. The radio is built-in GPS and is available in 5 watt and 25W/10W output. The radio is interoperable with the Handheld Radio in Fixed Frequency Clear and Secure modes for VOSIC Communication.

SPECIFICATIONS:
• Dimension: 175 mm x 212 mm x 150 mm
• Weight: 8.95 kg (max)
• Frequency Range: 30 MHz to 87.575 MHz with 25 KHz channel spacing
• Operating Temperature: -30°C to +65°C
• VHF Voltage: 14.5 VDC typical (for 5W), 24 V DC typical
• 2500 channels with 100 preset channels

COMPANY: BHARAT ELECTRONICS LIMITED
CONTACT: info@bel.co.in

CB/LB FIELD TELEPHONE
PTR1000+

DESCRIPTION:
PTR1000+ is a lightweight, ruggedized and portable 2-wire analog radio field telephone for voice communication. It can be used on the table, hung on a tree or on a wall, carried in a bag or with the carrying strap.

SPECIFICATIONS:
• DTMF or pulse signaling
• Standard H-F-200, Push-To-Talk, Noise Cancelling Headset
• Adjustable levels for acoustic signal, including silent.

COMPANY: ALPHA DESIGN TECHNOLOGIES PVT. LTD.
CONTACT: alphacorp@adtl.co.in

VEHICLE BASED SATCOM FOR DISASTER MANAGEMENT (MODEL: HSPA MOBILE BTS)

DESCRIPTION:
The portable HSPA Mobile BTS is required to establish mobile communications, once deployed. It has an on-board battery, a built-in GPS, a 1000 mm antenna. The BTS can provide coverage to the mobile users within a radius of 15 km and can be deployed in remote locations or in areas where the existing 2G/3G network does not provide local coverage.

SPECIFICATIONS:
• All terrain four wheel drive vehicle
• Mobile 1G-WCDMA BTS, Providing local coverage
• 1Km coverage with 18 M Electra Mechanical Mast.
• Supports up to 75 simultaneous HSPA Users.

COMPANY: ALPHA DESIGN TECHNOLOGIES PVT. LTD.
CONTACT: alphacorp@adtl.co.in
WEAPON SIGHTS FOR TARGET OBSERVATION & AIMING

COMMANDER’S SIGHT THERMAL IMAGER FOR BMP-II TANK (CSTI-BMP)

DESCRIPTION:
CSTI-BMP is an innovative combined device for the Commander of an armored vehicle or tank for day or night surveillance of targets, terrain and vehicles during battle situations.

SPECIFICATIONS:
- The sight channel is based on Thermal imaging principle and has a 3rd Generation detector.
- It is interchangeable with the previous TKN-18 form, ET and function without the need for any modifications to the vehicle.

COMPANY: ALPHA DESIGN TECHNOLOGIES PVT. LTD.
CONTACT: alphasarp@adtl.co.in

MULTIBAND CELLULAR & BWA JAMMER

DESCRIPTION:
It is a Multiband Cellular & a portable multi-band RCED barrage sweep jammer, countering cell phone handsets and BWA and Band. The shielding frequency range covers almost all cell phone bands, including GSM, CDMA, DCS, IS and also the broadband wireless access (BWA) band, up to 2.5 GHz.

SPECIFICATIONS:
- Configurable bandwidth, configurable sweep rate and configurable power level
- Effective shielding distance is 50-150m, depending on the signal strength.

COMPANY: ALPHA DESIGN TECHNOLOGIES PVT. LTD.
CONTACT: alphasarp@adtl.co.in

VHF BASE STATION LVM 342

DESCRIPTION:
The Secure VHF Base station radio LVM 342 is lightweight and portable and is useful for ground communication at the platoon level. The radio provides for Clear and Secure voice communication. The radio is micro controller based and has a user friendly MMI (Machine Interface) panel. It enables selective call operation between two radios or a net of many radios.

SPECIFICATIONS:
- Dimension : 250 x 100 x 240 (mm) (without battery)
- Weight : 3.8 kg
- Frequency range : 136 MHz to 234 MHz
- Power supply : 24V DC (external)
- Operating temperature : -20°C to +55°C
- EMC : MIL-STD-461C

COMPANY: BHARAT ELECTRONICS LIMITED
CONTACT: info@bel.co.in

V/UHF AM/FM TRANSCEIVER LUP 329

DESCRIPTION:
V/UHF AM/FM Transceiver meets the required long range ground to ground, and ground to air communication needs with protection against Electronic Counter Measures (ECM). The radio is provided with high-grade crypto, frequency hopping, voice data. The communication in ECM mode is instantaneous as Time Division Duplex (TDD) is maintained using highly stable clock.

SPECIFICATIONS:
- Dimension : 250 x 100 x 240 (mm) (without battery)
- Weight : 3.5 kg
- Frequency Band : VHF : 10 to 512 KHz
- Data Rate : 4 Kbps/512 Kbps / 1Mbps
- Software : re-programmable and Upgradable
- Security : Built-in high grade security and ECM capability
- POWER SUPPLY : rechargeable battery : 12.8 V DC, Li-ion (8.80V)
- Environmental : MIL-STD-810G/214/514/520G compatibility
- Temperature : -30°C to +55°C

COMPANY: BHARAT ELECTRONICS LIMITED
CONTACT: info@bel.co.in

SOFTWARE DEFINED RADIO MANPACK (SDR)

DESCRIPTION:
SDR is a new generation compact V/UHF band radio designed to provide fast, reliable and secure LOS voice, data and video communication. It has high data rate of up to 1Mbps. It is power efficient, lightweight and suitable for manpack application.

SPECIFICATIONS:
- Dimension : 280 x 195 x 44 mm (with battery)
- Weight : <3.5 kg (with battery)
- Frequency Band : VHF/UHF : 10 to 512 KHz
- Data Rate : 4 Kbps/512 Kbps / 1Mbps
- Software : re-programmable and Upgradable
- Security : Built-in high grade security and ECM capability
- POWER SUPPLY : rechargeable battery : 12.8 V DC, Li-ion (8.80V)
- Environmental : MIL-STD-810G/214/514/520G compatibility
- Temperature : -30°C to +55°C

COMPANY: BHARAT ELECTRONICS LIMITED
CONTACT: info@bel.co.in
COMBAT TRAINING CENTRE (CTC)

DESCRIPTION:
Combat Training Centre (CTC) is a one-stop training infrastructure solution for Defence Security, Paramilitary and the Police Forces. The secure facility, equipped with modern training equipment and infrastructure, free from routine encumbrances and other disturbances, is designed to provide performance assures training in realistic, tactical and operational environment. The CTC consists of simulators and live-training solutions to enable coordinated team training under various realistic threat scenarios. This centre can train people who are in the business of protecting various infrastructure, crowd management etc especially where the threat can come from any direction without warning. Combat Readiness Training, essentially starts with planning the training.

SPECIFICATIONS:
- Planning & Monitoring Suite
- The planning feature helps tailor the annual training plans, monthly/weekly schedule and the early training programme for units and teams down to each single individual.
- Scoring & Measurement System
- Helps quantify all training at individual, team and unit level.
- Scenario Builder Tool
- Helps create most realistic and realistically operated scenarios.
- Wargaming facility
- This not only helps train the decision makers and the leadership, but it also fully integrates with Live Ranges, Tactical Air Ground Training and also the Simulators.

TITANIUM ALLOYS

DESCRIPTION:
Titanium is the virtue of its excellent corrosion resistance and high strength to weight ratio find application in the aerospace, chemical, medical, marine, paper pulp, textiles, food and dairy industries. Titanium also is also used for biomedical implants.

SPECIFICATIONS:
GRADE | UNS NO. | CONFORMITY TO |
------- |--------- |--------------|
Ti 12  | B 52150  | ASTM B 355/B 344 GRADE 1 |
Ti 15  | B 52000  | ASTM B 355/B 344 GRADE 2 |
Ti 16  | B 54550  | ASTM B 355/B 344 GRADE 5 |
Ti 26  | B 64700  | ASTM B 355/B 344 GRADE 9 |

COMPANY: MSIRIA BHATU NIGAM LIMITED (INDIA)
CONTACT: mng@msiria-nigam.com

SPECIAL PURPOSE STEELS

DESCRIPTION:
These special steels have superior mechanical properties and better work ability which are essential for special applications in aerospace, power generation, railroad, defence, strategic and other heavy engineering industries. These include speciality hydraulic steels, magnetic austenitic and martensitic stainless steels and high performance bearing steels.

SPECIFICATIONS:
GRADE | UNS NO. | CONFORMITY TO |
------- |--------- |--------------|
MCB 17X | S 17403 | ASTM A 564 TYPE 63 |
MCB 25S | K 26900 | ASTM A 564 A 564-579 |
MCB 90XL | N 69094 | ASTM B 438 B 649 |
MCB 15 (HP) | S 15000 | ASTM A 574 |
MCB 11 (HP) | S 11500 |

COMPANY: MSIRIA BHATU NIGAM LIMITED (INDIA)
CONTACT: mng@msiria-nigam.com

NON-PRESSURE BEARING PARTS OF SMALL ARMS

DESCRIPTION:
Complex shaped metal parts manufactured by Metal Injection Moulding, as per customer drawings. The examples include Non-Pressure Bearing Parts such as Safety, Sear, Trigger, Extractors, Hammer, Ejectors, Housing, etc.

SPECIFICATIONS:
- Parts made by Metal Injection Moulding (MIM) are assembled in the following small arms:
  - rifles of caliber 5.56 mm, 0.23", 7.62 mm, 0.315", Pistols of caliber 3 mm., 0.115", 0.357" Revolvers of caliber 22 mag., 0.32". These are made using hardened steels such as MIM Fe-7% Ni, W1 57, W1 910, MIM 840, MIM 860, etc.

COMPANY: Indo-MIM Pvt Ltd
CONTACT: info@indomim.com
AIRFRAME STRUCTURES & ENGINEERED PRODUCTS

DESCRIPTION:
The company designs and builds high-yielding products, airframe structures for aircraft.

COMPANY • DYNAMICS TECHNOLOGIES LIMITED
CONTACT • ajeet@dynamictechnologies.net

SPECIFICATIONS:
- Cabinets to house Critical Power and Mission Equipment for Boeing P-8 – Navy Reconnaissance Aircraft.
- Complex aerofoils and flight critical assemblies AFT Pylon & Cargoship for Boeing Chinook CH-47.
- Flap-Track-Beam assemblies for Airbus A320 Family & A330 aircraft as Global Single Source.
- Major Airframe Assemblies for the Bell 407 Cabin as the Bell Helicopter.

SUB SYSTEMS

<table>
<thead>
<tr>
<th>PRODUCT</th>
<th>MANUFACTURING COMPANY</th>
<th>EMAIL</th>
<th>URL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oil-void separator</td>
<td>Vasum Vacuum Solutions</td>
<td><a href="mailto:vasum.sales@vasum.co.in">vasum.sales@vasum.co.in</a></td>
<td></td>
</tr>
<tr>
<td>Magnetic engine for dig sets</td>
<td>Kretschmayer Diesel Engine</td>
<td><a href="mailto:gruber.horber@kretschmayer.com">gruber.horber@kretschmayer.com</a></td>
<td></td>
</tr>
<tr>
<td>Landing gear/outboard</td>
<td>L&amp;T Mavalia</td>
<td><a href="mailto:info@ltemavalia.in">info@ltemavalia.in</a></td>
<td></td>
</tr>
<tr>
<td>Remote control valves (twin)</td>
<td>Danfoss</td>
<td><a href="mailto:info@ltemavalia.in">info@ltemavalia.in</a></td>
<td></td>
</tr>
<tr>
<td>Sizing/Remote (twin)</td>
<td>Samner</td>
<td><a href="mailto:info@ltemavalia.in">info@ltemavalia.in</a></td>
<td></td>
</tr>
<tr>
<td>Gearboxes</td>
<td>Kavan</td>
<td><a href="mailto:info@ltemavalia.in">info@ltemavalia.in</a></td>
<td></td>
</tr>
<tr>
<td>Propulsion control system</td>
<td>Flash Forge</td>
<td><a href="mailto:info@ltemavalia.in">info@ltemavalia.in</a></td>
<td></td>
</tr>
<tr>
<td>Steering gear</td>
<td>L&amp;T</td>
<td><a href="mailto:info@ltemavalia.in">info@ltemavalia.in</a></td>
<td></td>
</tr>
<tr>
<td>3D steering control</td>
<td>IDEAL STEERING</td>
<td><a href="mailto:info@ltemavalia.in">info@ltemavalia.in</a></td>
<td></td>
</tr>
<tr>
<td>Integrated system management system</td>
<td>L&amp;T</td>
<td><a href="mailto:info@ltemavalia.in">info@ltemavalia.in</a></td>
<td></td>
</tr>
<tr>
<td>MALS</td>
<td>IDEAL STEERING</td>
<td><a href="mailto:info@ltemavalia.in">info@ltemavalia.in</a></td>
<td></td>
</tr>
<tr>
<td>Rails</td>
<td>Zechor</td>
<td><a href="mailto:info@ltemavalia.in">info@ltemavalia.in</a></td>
<td></td>
</tr>
<tr>
<td>MALS</td>
<td>IDEAL STEERING</td>
<td><a href="mailto:info@ltemavalia.in">info@ltemavalia.in</a></td>
<td></td>
</tr>
<tr>
<td>Pressure reducing panel</td>
<td>Flash Forge</td>
<td><a href="mailto:info@ltemavalia.in">info@ltemavalia.in</a></td>
<td></td>
</tr>
<tr>
<td>Steel大连 dismantles</td>
<td>Star Industries, Stainless Steel, SAIL</td>
<td><a href="mailto:info@ltemavalia.in">info@ltemavalia.in</a></td>
<td></td>
</tr>
<tr>
<td>Digital variable band receiver</td>
<td>IDEAL STEERING</td>
<td><a href="mailto:info@ltemavalia.in">info@ltemavalia.in</a></td>
<td></td>
</tr>
<tr>
<td>Container lifter forged body</td>
<td>Interlink Forge</td>
<td><a href="mailto:info@ltemavalia.in">info@ltemavalia.in</a></td>
<td></td>
</tr>
<tr>
<td>MALS general assembly</td>
<td>IDEAL STEERING</td>
<td><a href="mailto:info@ltemavalia.in">info@ltemavalia.in</a></td>
<td></td>
</tr>
<tr>
<td>Lighting kit</td>
<td>IDEAL STEERING</td>
<td><a href="mailto:info@ltemavalia.in">info@ltemavalia.in</a></td>
<td></td>
</tr>
<tr>
<td>Armoured shelter</td>
<td>Externs Engineering</td>
<td><a href="mailto:info@ltemavalia.in">info@ltemavalia.in</a></td>
<td></td>
</tr>
<tr>
<td>6.3 dual led display (led display, led display)</td>
<td>Futura Automation</td>
<td><a href="mailto:info@ltemavalia.in">info@ltemavalia.in</a></td>
<td></td>
</tr>
<tr>
<td>Fire Extinguisher</td>
<td>IDEAL STEERING</td>
<td><a href="mailto:info@ltemavalia.in">info@ltemavalia.in</a></td>
<td></td>
</tr>
<tr>
<td>Lithium Batteries, monoblock, monoblock, monoblock battery</td>
<td>IDEAL STEERING</td>
<td><a href="mailto:info@ltemavalia.in">info@ltemavalia.in</a></td>
<td></td>
</tr>
<tr>
<td>Aircraft cases, metal cases</td>
<td>IDEAL STEERING</td>
<td><a href="mailto:info@ltemavalia.in">info@ltemavalia.in</a></td>
<td></td>
</tr>
<tr>
<td>Light mechanical cases</td>
<td>IDEAL STEERING</td>
<td><a href="mailto:info@ltemavalia.in">info@ltemavalia.in</a></td>
<td></td>
</tr>
<tr>
<td>MALS speaker, radiator housing, shaft, actuator interface, actuator mounting plate, main interface, gearbox housing</td>
<td>IDEAL STEERING</td>
<td><a href="mailto:info@ltemavalia.in">info@ltemavalia.in</a></td>
<td></td>
</tr>
<tr>
<td>Support heat exchanger, dual, 2kW module, vane, module, vane, module, vane</td>
<td>IDEAL STEERING</td>
<td><a href="mailto:info@ltemavalia.in">info@ltemavalia.in</a></td>
<td></td>
</tr>
<tr>
<td>Mounting block</td>
<td>IDEAL STEERING</td>
<td><a href="mailto:info@ltemavalia.in">info@ltemavalia.in</a></td>
<td></td>
</tr>
<tr>
<td>Assembly, forward service facing</td>
<td>IDEAL STEERING</td>
<td><a href="mailto:info@ltemavalia.in">info@ltemavalia.in</a></td>
<td></td>
</tr>
<tr>
<td>Claws, spray valve, spray valve, spray valve</td>
<td>IDEAL STEERING</td>
<td><a href="mailto:info@ltemavalia.in">info@ltemavalia.in</a></td>
<td></td>
</tr>
<tr>
<td>Thermal sensor, thermal sensor, thermal sensor, sensor</td>
<td>IDEAL STEERING</td>
<td><a href="mailto:info@ltemavalia.in">info@ltemavalia.in</a></td>
<td></td>
</tr>
<tr>
<td>Tubular spar, tubular spar, tubular spar</td>
<td>IDEAL STEERING</td>
<td><a href="mailto:info@ltemavalia.in">info@ltemavalia.in</a></td>
<td></td>
</tr>
<tr>
<td>Aircraft frame structure parts</td>
<td>IDEAL STEERING</td>
<td><a href="mailto:info@ltemavalia.in">info@ltemavalia.in</a></td>
<td></td>
</tr>
<tr>
<td>Landing gear control</td>
<td>IDEAL STEERING</td>
<td><a href="mailto:info@ltemavalia.in">info@ltemavalia.in</a></td>
<td></td>
</tr>
<tr>
<td>Transducers</td>
<td>IDEAL STEERING</td>
<td><a href="mailto:info@ltemavalia.in">info@ltemavalia.in</a></td>
<td></td>
</tr>
</tbody>
</table>

65
<table>
<thead>
<tr>
<th>VERTICAL</th>
<th>PRODUCT</th>
<th>MANUFACTURING COMPANY</th>
<th>NSN</th>
<th>PAGE NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>LAND SYSTEMS</td>
<td>AARHUS</td>
<td>RKL</td>
<td>140270471555</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>BRACHINGTO ARMAMENT SYSTEM</td>
<td>BRACHINGTO AEROSPACE</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td></td>
<td>HELV-23</td>
<td>RKL</td>
<td>140270471555</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>DIKURISI</td>
<td>GFB</td>
<td>100570471090</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>ADVANCED TOWED ARTILLERY GUN SYSTEM</td>
<td>DIKURISI</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>WAPA</td>
<td>LRT</td>
<td>100570471090</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>BHNAT-32</td>
<td>LRT</td>
<td>100570471090</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>UPRANISHI L-255 GUN</td>
<td>RKL</td>
<td>100570471090</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>GURISMA 350</td>
<td>LRT</td>
<td>100570471090</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>ZS-23 UPGRADING</td>
<td>LRT</td>
<td>100570471090</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>UPRANISHI SCHALE WEAPON SYSTEM</td>
<td>RKL</td>
<td>2803070448245</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>WHITEHEAD AMMUNITIONS PLATFORM (1P)</td>
<td>RKL</td>
<td>2803070448245</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>WEAPON LOADING RAGAR</td>
<td>REL</td>
<td>339870466181</td>
<td>14</td>
</tr>
<tr>
<td></td>
<td>MILITARY FIELD SURVEILLANCE RAGAR - Extended Range (MBR-X)</td>
<td>REL</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td></td>
<td>MIKOM FIELD SURVEILLANCE RAGAR (MBR-X)</td>
<td>REL</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td></td>
<td>MILITARY VEHICLES</td>
<td>ASHOK LELAND</td>
<td>140270471087</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>MILITARY FIELD LIGHT MIRAGE RAGAR (MBR-X)</td>
<td>REL</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td></td>
<td>MIKOM FIELD SURVEILLANCE RAGAR (MBR-X)</td>
<td>REL</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td></td>
<td>COMMISSIONING INTEGRATED ELECTRONIC NKAR AND SYSTEM</td>
<td>REL</td>
<td>25</td>
<td></td>
</tr>
<tr>
<td></td>
<td>GROUND-BASED MOBILE ELECTRONIC SYSTEM</td>
<td>REL</td>
<td>140270471090</td>
<td>15</td>
</tr>
<tr>
<td>NAVAL SYSTEMS</td>
<td>ANTI-SURFACE WEAPONS CORPS</td>
<td>GRSE</td>
<td>28</td>
<td></td>
</tr>
<tr>
<td></td>
<td>OFFSHORE RICHL SS (1P)</td>
<td>HSL</td>
<td>28</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ADVANCE OFFSHORE PATROL VESSEL</td>
<td>GIA SHIPYARD</td>
<td>140270472521</td>
<td>28</td>
</tr>
<tr>
<td></td>
<td>FAST PATROL VESSEL</td>
<td>GIA SHIPYARD</td>
<td>140270472521</td>
<td>28</td>
</tr>
<tr>
<td></td>
<td>HIGH SPEED RBC</td>
<td>GIA SHIPYARD</td>
<td>140270472521</td>
<td>28</td>
</tr>
<tr>
<td></td>
<td>FAST INTERCEPTOR BOAT</td>
<td>GIA SHIPYARD</td>
<td>140270472521</td>
<td>28</td>
</tr>
<tr>
<td></td>
<td>INHEREN PATROLS VESSEL (3P)</td>
<td>HSL</td>
<td>28</td>
<td></td>
</tr>
<tr>
<td></td>
<td>LANDING CRAFT QUALITY</td>
<td>GRSE</td>
<td>33</td>
<td></td>
</tr>
<tr>
<td></td>
<td>YORK TUG</td>
<td>HSL</td>
<td>34</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>VERTICAL</th>
<th>PRODUCT</th>
<th>MANUFACTURING COMPANY</th>
<th>NSN</th>
<th>PAGE NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>NAVAL SYSTEMS</td>
<td>TURPONI ADVANCED LIGHT (TAL)</td>
<td>RKL</td>
<td>35</td>
<td></td>
</tr>
<tr>
<td></td>
<td>HEAVY WEIGHT TURPONI DOWMARRATOR</td>
<td>RKL</td>
<td>36</td>
<td></td>
</tr>
<tr>
<td></td>
<td>SUBMARRINE FIRE (1P)</td>
<td>RKL</td>
<td>37</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ARM TOWED SHIP</td>
<td>REL</td>
<td>38</td>
<td></td>
</tr>
<tr>
<td></td>
<td>INCHI RICH-EIGHT ROCKET LAUNCHER</td>
<td>GFB</td>
<td>39</td>
<td></td>
</tr>
<tr>
<td></td>
<td>DROP ROCKET LAUNCHER</td>
<td>REL</td>
<td>39</td>
<td></td>
</tr>
<tr>
<td></td>
<td>TURPONI FIRE CONTROL</td>
<td>REL</td>
<td>40</td>
<td></td>
</tr>
<tr>
<td></td>
<td>WW-18 ROCKET LAUNCHER (REACH CLEARING SYSTEM)</td>
<td>REL</td>
<td>41</td>
<td></td>
</tr>
<tr>
<td></td>
<td>SPEED ONE BULLET</td>
<td>HSL</td>
<td>42</td>
<td></td>
</tr>
<tr>
<td></td>
<td>FULLY DODGING</td>
<td>HSL</td>
<td>43</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ADVANCED COMPOSITE CONSTRUCTION SYSTEM (GC 0.5 W)</td>
<td>REL</td>
<td>44</td>
<td></td>
</tr>
<tr>
<td></td>
<td>COASTAL SURVEILLANCE SYSTEM</td>
<td>REL</td>
<td>45</td>
<td></td>
</tr>
<tr>
<td></td>
<td>COMBINATION MANAGEMENT SYSTEM</td>
<td>REL</td>
<td>46</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ELECTRO OPTICAL FIRE CONTROL SYSTEM</td>
<td>REL</td>
<td>47</td>
<td></td>
</tr>
<tr>
<td>AIR SYSTEMS</td>
<td>SCA XELS</td>
<td>REL</td>
<td>140270471090</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td>LIGHT COMBAT HELICOPTER (LCH)</td>
<td>REL</td>
<td>140270471090</td>
<td>51</td>
</tr>
<tr>
<td></td>
<td>ADVANCED LIGHT HELICOPTER (ALH) - DHRV</td>
<td>REL</td>
<td>140270471090</td>
<td>52</td>
</tr>
<tr>
<td></td>
<td>CHEETAI</td>
<td>REL</td>
<td>140270471090</td>
<td>53</td>
</tr>
<tr>
<td></td>
<td>DHTN (Dh-TFN)</td>
<td>REL</td>
<td>140270471090</td>
<td>54</td>
</tr>
<tr>
<td></td>
<td>WRIKE TRANSMISSION FOR SI-30 AC</td>
<td>REL</td>
<td>140270471090</td>
<td>55</td>
</tr>
<tr>
<td>COMMUNICATION SYSTEM</td>
<td>SECURITY FIRE HANDHELD RADIO LWP 341</td>
<td>REL</td>
<td>58</td>
<td></td>
</tr>
<tr>
<td></td>
<td>SECURITY FIRE HANDHELD RADIO LWP 251</td>
<td>REL</td>
<td>58</td>
<td></td>
</tr>
<tr>
<td></td>
<td>SOFTWARE DEFINED HANDHELD RADIO</td>
<td>REL</td>
<td>58</td>
<td></td>
</tr>
<tr>
<td></td>
<td>HF TRANSCEIVER LWP 265</td>
<td>REL</td>
<td>59</td>
<td></td>
</tr>
<tr>
<td></td>
<td>VHF TRANSCEIVER LWP 348</td>
<td>REL</td>
<td>60</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CFB: FIELD TELEPHONE (P12000+)</td>
<td>REL</td>
<td>61</td>
<td></td>
</tr>
<tr>
<td></td>
<td>SOFTWARE DEFINED RADIO (SO)</td>
<td>REL</td>
<td>61</td>
<td></td>
</tr>
<tr>
<td></td>
<td>WEAPON SIGHTS FOR TARGET IDENTIFICATION &amp; AIMING</td>
<td>REL</td>
<td>62</td>
<td></td>
</tr>
<tr>
<td></td>
<td>MJISMAU TO ICHAI FME (2P)</td>
<td>MJISMAU TO ICHAI FME (2P)</td>
<td>REL</td>
<td>62</td>
</tr>
<tr>
<td></td>
<td>MJISMAU TO ICHAI FME (2P)</td>
<td>MJISMAU TO ICHAI FME (2P)</td>
<td>REL</td>
<td>62</td>
</tr>
<tr>
<td>OTHER SYSTEMS</td>
<td>COMPARE TRAINING CENTER (CTC)</td>
<td>JOSN TECHNOLOGIES</td>
<td>66</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ALLOYAL (TAL)</td>
<td>MIYASHI</td>
<td>67</td>
<td></td>
</tr>
<tr>
<td></td>
<td>SPECIAL PURPOSE STEELS</td>
<td>MIYASHI</td>
<td>67</td>
<td></td>
</tr>
<tr>
<td></td>
<td>SOFTWARE OF PRESSURE SHAPED PARTS OF SMALL ARMS</td>
<td>MIYASHI</td>
<td>67</td>
<td></td>
</tr>
<tr>
<td></td>
<td>AIRFRAME STRUCTURES &amp; ENGINEERED PRODUCTS</td>
<td>SYMTECHNOLOGIES</td>
<td>68</td>
<td></td>
</tr>
</tbody>
</table>