Introduction to the Equipment of the Japan Self-Defense Forces

A Reference Guide to the Defense Industrial Base of Japan

Ministry of Defense, Japan

This pamphlet is a reference guide for introducing the defense industrial base of Japan, depicting and utilizing the specifications of the JSDF's equipment as illustrative examples.

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Equipment of the Ground Self-Defense Force

Vehicles

1/2Ton Truck

Performance/Specifications	
Carrying capacity	6
Total length	4.1m
Total width	1.8m
Total height	2.0m
Weight	1.9t
Maximum speed	135km/h
Manufacturer	Mitsubishi Motors Corporation

Vehicles

1 1/2Ton Truck

Performance/Specifications	
Carrying capacity	3
Total length	5.5m
Total width	2.2m
Total height	2.6m
Weight	3.1t
Maximum speed	125km/h

Vehicles

3 1/2Ton Truck

Performance/Specifications	
Carrying capacity	Crew: 2 | troops: 22
Total length	7.2m
Total width	2.5m
Total height	3.2m
Weight	8.5t
Payload	6t
Maximum speed	105km/h
Manufacturer	Isuzu Motors, Ltd.

Vehicles

Extra-large Type Dump Truck

Performance/Specifications	
Carrying capacity	3
Total length	9.1m
Total width	2.5m
Total height	3.2m
Weight	12.7t
Payload	9t
Maximum speed	95km/h
Manufacturer	Mitsubishi Fuso Truck and Bus Corporation

Equipment of the Ground Self-Defense Force

Vehicles

7Ton Truck

Performance/Specifications	
Carrying capacity	35
Total length	9.4m
Total width	2.5m
Total height	3.2m
Weight	11.7t
Maximum load weight	9.8kg
Maximum speed	90km/h
Manufacturer	Mitsubishi Fuso Truck and Bus Corporation

Vehicles

Heavy Wheeled Recovery Vehicle

Performance/Specifications	
Carrying capacity	3
Total length	11.1m
Total width	2.5m
Total height	3.4m
Weight	24t
Towing capacity	15t
Crane capacity	12t
Maximum speed	100km/h
Manufacturer	Mitsubishi Heavy Industries, Ltd. (FY 2002 -)

Vehicles

Type-11 Crawler Vehicle Recovery Vehicle

Performance/Specifications	
Carrying capacity	4
Total length	Approx. 9.1m
Total width	Approx. 3.4m
Total height	Approx. 2.7m
Weight	Approx. 45t
Pulling force	Approx. 45t
Lifting force	Approx. 23t
Maximum speed	70km/h
Manufacturer	Mitsubishi Heavy Industries, Ltd. (FY 2011 -)

Designed by replacing the gun turret of the Type-10 tank for recovery equipment, the Type-11 Crawler Vehicle Recovery Vehicle is used for recovery and maintenance of tracked vehicles.

Vehicles

Type-10 Snow Vehicle

Performance/Specifications	
Carrying capacity	10
Total length	Approx. 4.7m
Total width	Approx. 2.3m
Total height	Approx. 2.4m
Weight	Approx. 5.0t
Maximum load weight	Approx. 1.0t
Maximum speed	Approx. 45km/h
Manufacturer	Ohara Corporation (FY 2010 -)

The Type-10 Snow Vehicle is utilized for towing equipment over snow and transporting personnels etc.

Equipment of the Ground Self-Defense Force

Vehicles

Type-10 Main Battle Tank (Engine, Transmission and Automatic Loader for a Type-10 Tank)

Type-10 Tank

Engine

Transmission

Automatic Loader

Performance/Specifications		
Body	Carrying capacity	3
	Total length	Approx. 9.4m
	Total width	Approx. 3.2m
	Total height	Approx. 2.3m
	Weight	Approx. 44t
	Maximum speed	Approx. 70km/h
Cannon assy	Armament	120mm smooth-bore cannon
Engine	Type	4-stroke 8-cylinder water-cooled engine
	Maximum output	1200 hp
Transmission	Type	Step-less continuously variable transmission
Automatic Loader	High-speed and high-reliable automatic loader	
Manufacturer	Mitsubishi Heavy Industries, Ltd. The Japan Steel Works, Ltd. (cannon assy) (FY 2010 -)	

The Type-10 tank is the fourth tank for the GSDF deployed in 2010, with improved capabilities for anti-armor combat, mobile strike and countering an attack against special operation units. Its major characteristic is C4I capability that enables it to share information between tanks.

Vehicles

Type-99 155mm Self-propelled Howitzer

Performance/Specifications	
Carrying capacity	4
Total length	11.3m
Total width	3.2m
Weight	40t
Speed	Approx. 50km/h
Ammunition	High explosive shells, smoke shells, illumination shells, long range shells
Manufacturer	The Japan Steel Works, Ltd. (gun turret) Mitsubishi Heavy Industries, Ltd. (body) (FY 1999 -)

Vehicles

155mm Self-propelled Howitzer (Wheeled)

Performance/Specifications	
Carrying capacity	5
Total length	Approx. 11.4m
Total width	Approx. 2.5m
Weight	Approx. 3.4m
Manufacturer	The Japan Steel Works, Ltd. (under development)

The Wheeled 155mm Self-propelled Howitzer is now under development as a successor to current towed howitzer (FH-70). This new howitzer will be featured with faster targeting and deployment, improved strategic mobility, and a networked system.

Equipment of the Ground Self-Defense Force

Vehicles

Type-16 Mobile Combat Vehicle (MCV)

Performance/Specifications	
Carrying capacity	4
Total length	8.4m
Total width	3.0m
Total height	2.9m
Weight	Approx. 26t
Maximum speed	Approx. 100km/h
Main armament	105mm smooth-bore gun
Manufacturer	Mitsubishi Heavy Industries, Ltd. The Japan Steel Works, Ltd. (main gun) (FY 2016 -)

The Type-16 MCV features air-transportability and mobility on road, which enables rapid deployment into remote islands and other remote locations. Its main armament is capable for use the same ammunition as the Type-74 tank.

Vehicles

Light Armored Vehicle (LAV)

Performance/Specifications	
Carrying capacity	4
Total length	4.4m
Total width	2.0m
Total height	1.9m
Weight	Approx. 4.5t
Maximum speed	100km/h
Manufacturer	Komatsu Ltd. (FY 2001 -)

The LAV is used for strategic and tactical mobility by infantry units.

Engineering Equipment

Type-07 Mobility Support Bridge

Performance/Specifications			
Carrying capacity	3	Maximum speed	85km/h
Total length	11.0m	Length of bridge	60m
Total width	3.0m	Manufacturer	Hitachi, Ltd. (FY 2007 -)
Total height	3.7m		
Weight	25t		

The Type-07 Mobility Support Bridge enables the rapid construction of a temporary bridge, up to 60m in length, without the need for bridge piers.

Equipment of the Ground Self-Defense Force

Engineering Equipment

Type-92 Minefield Breaching Rocket System (MBRS)

Performance/Specifications	
Carrying capacity	2
Total length	7.6m
Total width	3.0m
Total height	2.8m
Maximum speed	50km/h
Manufacturer	IHI AEROSPACE Co., Ltd. (FY 1992 -)

The Type-92 MBRS is used for quick clearing of mine fields and clearing roads for traffic.

Engineering Equipment

Visualized Portable Mine Detector

Performance/Specifications	
Manufacturer	Kawasaki Heavy Industries, Ltd. (FY 2006 -)

The Visualized Portable Mine Detector uses radio waves and magnetism to detect mines and inform the user of mines' location using images and sounds. Detected mines are shown on its head-mounted display.

Engineering Equipment

Multipurpose Material Handling Vehicle

Performance/Specifications	
Carrying capacity	2
Total length	Approx. 4.3m
Total width	Approx. 2.2m
Total height	Approx. 2.2m
Weight	Approx. 5t
Maximum load weight	Approx. 3t
Maximum speed	Approx. 20km/h
Transportability	Transportable by large truck
Manufacturer	Morooka Co., Ltd. Onodera Co., Ltd.

The Multipurpose Material Handling Vehicle is used for transporting construction materials, ammunition and other provisions to remote areas. In the case of disaster relief operations, this vehicle is deployed to affected areas to assist debris removal, among a range of other tasks.

Engineering Equipment

Type-94 Amphibious Minelayer

On land At sea

Performance/Specifications	
Carrying capacity	3
Total length	11.8m
Total width	2.8m (on land) 4.0m (at sea)
Total height	3.5m
Weight	16t
Maximum speed	50km (on land) 11km/h (6kt) (at sea)
Manufacturer	JMU Defense Systems Co., Ltd. (FY 1994 -)

The Type-94 Amphibious Minelayer is used for laying mines along the seashore.

Equipment of the Ground Self-Defense Force

Engineering Equipment

Life Saving System

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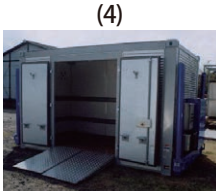

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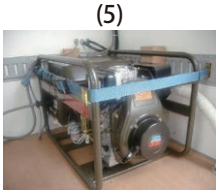

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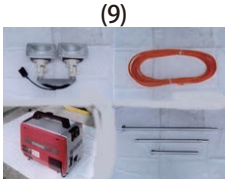

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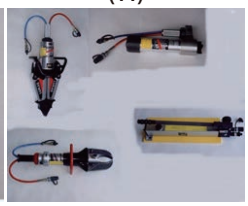

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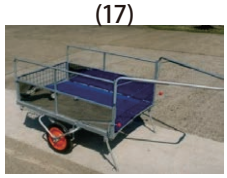

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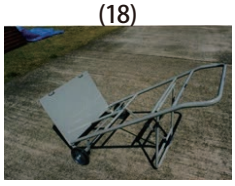

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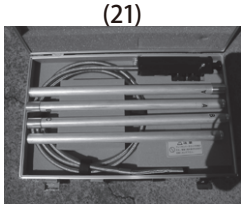

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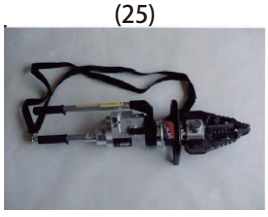

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Performance/Specifications		
Composition	(1) Air jack	(15) Lighting tool for wide-area work
	(2) Engine cutter	(16) Manually operated winch
	(3) Engine-driven rock drill	(17) Foldable handcart
	(4) Storage Container	(18) Carriage dolly
	(5) Generator for containers	(19) Iron wire cutter cutting scissors
	(6) Megaphone with a siren	(20) Battery-powered headlight
	(7) Chainsaw	(21) Tool for searching destroyed buildings
	(8) Filter regenerator	(22) Backpack fire extinguisher
	(9) Lighting tool for rescue work	(23) Disaster-preventive working mask and dust-proof glasses set
	(10) Rescue rope	(24) All purpose carrier
	(11) Hydraulic equipment for rescue	(25) Hydraulic cutter
	(12) Rescue guiding rod 45	(26) Hydraulic jack
	(13) Portable toilet	
	(14) Electroscope	

The Life Saving System are designed for use in searching for or rescuing people from collapsed buildings in disasters, etc.

Aircraft

New Utility Helicopter

Performance/Specifications	
Carrying capacity	Crew: 2 | troops: 11
Total length	Approx. 13m
Total width	Approx. 3m
Total height	Approx. 4m
Weight	Approx. 5.5t
Manufacturer	SUBARU Corporation (under development)

New Utility Helicopter is under prototype demonstration as the successor to the current utility helicopter (UH-1J).

Equipment of the Ground Self-Defense Force

Communication/Electric Equipment

Multipurpose Wide-band Software Defined Radio

Man-pack radio

Hand-held radio

Vehicle-type

Airborne-type

Performance/Specifications					
Man-pack radio	Total width	Approx. 250mm	Vehicle-type	Total width	Approx. 210mm
	Total height	Approx. 470mm		Total height	Approx. 280mm
	Depth	Approx. 275mm		Depth	Approx. 280mm
	Weight	Approx. 5.5kg		Weight	Approx. 17kg
	Power supply	14.8V DC		Power supply	24V DC
Hand-held radio	Total width	Approx. 80mm	Airborne-type	Total width	Approx. 600mm
	Total height	Approx. 200mm		Total height	Approx. 195mm
	Depth	Approx. 30mm		Depth	Approx. 390mm
	Weight	Approx. 0.6kg		Weight	Approx. 42kg
	Power supply	7.2V DC		Power supply	28V DC
Manufacturer	NEC Corporation, (FY 2012-)				

The Multipurpose Wide-band Software Defined Radios are used for command and communications. Software wireless technology, replacing hardware for software, simplifies potential future upgrades and makes devices more compact and lightweight.

Communication/Electric Equipment

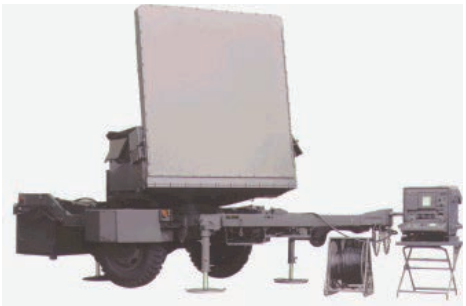
JPPS-P24 Ground Radar (Improved) JPPS-P24

Performance/Specifications	
Frequency	X-band
Power supply	19 - 31V
Composition	Main unit Tripod Instruction control panel Accessories
Manufacturer	Fujitsu Ltd. (FY 2005 -)

The JPPS-P24 is used for collecting information on ground units nearby.

Communication/Electric Equipment

Anti-motor Radar JMPQ-P13



Performance/Specifications	
Frequency	X-band
Indicator	B-scope
Total length	Approx. 5.3m
Depth	Approx. 2.5m
Total height	Approx. 3.5m
Weight	Approx. 2.9t
Power supply	115V AC
Manufacturer	TOSHIBA Infrastructure System & Solutions Corporation (FY 1986 -)

The JMPQ-P13 is an all-weather type, mobile radar system used for targeting short-range mortars with low initial speed. This radar system is also capable of rapid locating of distant mortar batteries with high accuracy and simultaneous locating of multiple targets.

Equipment of the Ground Self-Defense Force

Communication/Electric Equipment

Radar Set JTPS-P18

Performance/Specifications	
Frequency	X-band
Indicator	PPI-scope
Power supply	200V, 60Hz, 10kVA
Weight	Approx. 1.8t
Manufacturer	Mitsubishi Electric Corporation (FY 1999 -)

The JTPS-P18 provides continuous 360-degree monitoring of aircraft and helicopters flying at low altitude and reports target information rapidly and continuously.

Communication/Electric Equipment

Radar Set JTPS-P25

Performance/Specifications	
Antenna	Four-faced active phased array
Indicator	PPI
Total length	Approx. 11.6m
Depth	Approx. 2.5m
Total height	Approx. 3.7m
Weight	Approx. 25t
Power supply	115/200V, 400Hz, 135kVA
Composition	Antenna Control device
Manufacturer	Mitsubishi Electric Corporation (FY 2010 -)

The JTPS-P25 is an anti-aircraft surveillance radar for collecting target information at a middle and high altitude.

Communication/Electric Equipment

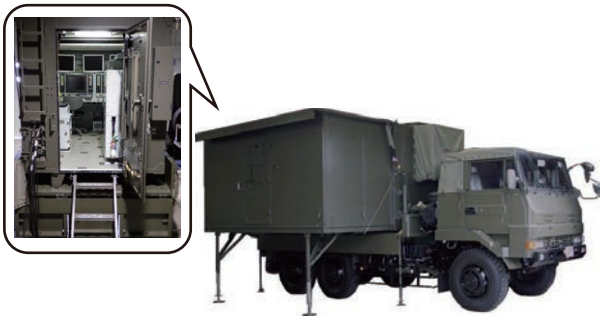
Firing Command and Control System (FCCS)

Performance/Specifications	
Composition	Command post device Automotive device Portable device Artillery unit device Connected device
Manufacturer	TOSHIBA Infrastructure System & Solutions Corporation (FY 2011 -)

The FCCS enables quick and precise command and control through systemization of automatic processing of target information, assistance in selecting firing commands and other operations.

Communication/Electric Equipment

Air Defense Command and Control System (ADCCS)



Performance/Specifications	
Composition	Air defense command control device Air defense adjustment device Communication device Anti-aircraft information receiver Connected terminal Commander staff terminal
Manufacturer	Mitsubishi Electric Corporation (FY 2009 -)

The ADCCS quickly and accurately processes and transmits anti-aircraft information necessary for anti-aircraft firing as well as command and control for anti-aircraft combat.

Equipment of the Ground Self-Defense Force

Quartermaster Equipment

Water Purification System Type II Reverse Osmosis

Performance/Specifications			
Composition	Water treatment equipment Water pump Water storage unit, etc.	Rate of flow	150L/min
		Storage capacity	10t
Purification capacity	30t or more/day	Manufacturer	NEC Facilities, Ltd. (FY 2012 -)
Lifting height	18m		

The Water Purification System Type II Reverse Osmosis filters, desalinates and makes drinkable water from a variety of sources including seawater. This system is designed for installation on a 3 1/2 ton truck, which can be airlifted by C-130H transport aircraft. The system is also capable of being suspended from a CH-47JA helicopter for transportation.

Quartermaster Equipment

Freezer and Refrigerator Vehicle

Performance/Specifications	
Total length	Approx. 7.2m
Total width	Approx. 2.5m
Total height	Approx. 3.5m
Weight	Approx. 10.9t
Maximum speed	80km/h
Inside temperature	0℃ to -18℃ (outdoor temperature 38℃)
Manufacturer	Hino Motors, Ltd. Isuzu Motors, Ltd. Topre/Toprec Corporation

The Freezer and Refrigerator Vehicle is used in transporting and storing perishable food.

Quartermaster Equipment

Kitchen Set Field Type 1 (22KAI)

Performance/Specifications	
Total length	Approx. 4.6m
Total width	Approx. 2.3m
Total height	Approx. 2.7m
Weight	25t or less
Cooking capacity	For 200 people
Manufacturer	Shinsei Corporation Maruhashi Co., Ltd. (FY 2010 -)

Equipment of the Ground Self-Defense Force

Quartermaster Equipment

Type-13 Airborne Parachute

Performance/Specifications	
Parachute diameter	Approx. 12m
Weight	Approx. 18kg
Manufacturer	FUJIKURA PARACHUTE Co., Ltd. (FY 2013 -)

In a diverse range of mission scenarios, the Type-13 Airborne Parachute enables safe and rapid large group drops, maintaining a balance between air safety with improved mutual resilience, and landing safety resulting from higher maneuverability.

Quartermaster Equipment

Parachute Cargo Air Drop System

Performance/Specifications	
Type	Platform delivery system (PDS) Container delivery system (CDS)
Drop speed	6 - 9m/s
Manufacturer	FUJIKURA PARACHUTE Co., Ltd. IHI AEROSPACE Co., Ltd. ShinMaywa Industries,Ltd. (FY 2004 -)

With its landing impact absorption capability, reliable release systems and fall prevention functions, the Parachute Cargo Air Drop System enables units to drop equipment with low impact resistance.

Chemical Equipment

Type-18 Personal Protective Equipment

Performance/Specifications	
Protective capacity	Protection against chemical, biological, radiological and nuclear agents
Protective mask	Monocular 2 canisters
Manufacturer	Toyobo Co., Ltd. Koken,Ltd. (protective masks) (FY 2018 -)

The Type-18 Personal Protective Equipment reduces strain on the body with its wide field of view, low respiratory resistance and lightweight design.

Chemical Equipment

NBC Early Warning System

Performance/Specifications	
Weight	Approx. 36kg
Alarm device	Approx. 24kg
Connected device	Approx. 2.5kg
Manufacturer	IHI Corporation (FY 2012 -)

The NBC Early Warning System detects the presence of radiation, biological agents and toxic chemicals, and generates an alarm.

Equipment of the Ground Self-Defense Force

Chemical Equipment

NBC Reconnaissance Vehicle

Performance/Specifications	
Carrying capacity	4
Total length	Approx. 8.0m
Total width	Approx. 2.5m
Total height	Approx. 3.2m
Weight	Approx. 19.6t
Maximum speed	95km/h
Manufacturer	Komatsu Ltd. (FY 2010 -)

The NBC Reconnaissance Vehicle measures radiation (gamma and neutron radiation), detects and identifies toxic chemicals (gas or liquid) and biological agents to gage the state of contamination.

Chemical Equipment

Decontamination Set (Decontamination Vehicle)

Performance/Specifications	
Carrying capacity	2
Total length	7,150mm
Total width	2,485mm
Total height	3,190mm
Weight	Approx. 12t
Maximum speed	105km/h
Manufacturer	Isuzu Motors, Ltd. (FY 2015 -)

The Decontamination Set (Decontamination Vehicle) is used for large-scale decontamination of areas or facilities.

Chemical Equipment

Dose Equivalent Rate Meter for Alpha/beta Rays, Neutron Beam and Gamma Rays

Alpha/beta rays　Neutron beam　Gamma rays

Performance/Specifications	
Alpha/beta rays dose equivalent rate meter	Capable of detecting radiation concentrations between 0kcpm to 99.9kcpm generated by alpha, and beta radiation in water and foodstuffs
Neutron beam dose equivalent rate meter	Capable of measuring neutron beam radiation between 0.01μSv/h to 10mSv/h
Gamma rays dose equivalent rate meter	Capable of measuring gamma radiation between 0.14μGy/h to 5Gy/h
Manufacturer	Fuji Electric Co., Ltd.

Medical Equipment

Field Operation System

Performance/Specifications	
Composition	Surgical operation unit Surgery preparation unit Sterilization unit Sanitary supply unit
Vehicles, etc.	3 1/2 ton truck 1 ton generator trailer 1 ton water supply trailer
Manufacturer	Ebara Jitsugyo Co., Ltd. Nippon Trex Co., Ltd.

The Field Operation System enables 10-15 surgical operations per day.

Equipment of the Ground Self-Defense Force

Firearms

Type-89 5.56mm Assault Rifle

Performance/Specifications	
Caliber	5.56mm
Length of barrel	420mm
Total length	Approx. 920mm
Weight	3.5kg
Action	Gas-operated
Rate of fire	850 rounds/min
Manufacturer	Howa Machinery, Ltd. (FY 1989 -)

The Type-89 Assault Rifle is the successor to the Type-64 Assault Rifle. Compared with Type-64 rifle, it has a smaller caliber, less weight and fewer parts. It can fire in either semi-auto, full-auto or three-round burst.

Firearms

120mm Mortar RT

Performance/Specifications	
Caliber	120mm
Tube length	2080mm
Weight	Approx. 600kg
Maximum rate of fire	15 to 20 rounds/min
Ammunition	High explosive shells, white phosphorus smoke shells, illumination shells, rocket assisted shells, anti-light-armored shells
Manufacturer	Howa Machinery, Ltd. (licensed production)

The 120mm Mortar RT is the successor to the 107mm Mortar. It has longer shooting range than the 107mm Mortar and its wheeled system increases mobility.

Ammunition

5.56mm/7.62mm/12.7mm Small Firearm Ammunition

5.56mm 7.62mm 12.7mm

Performance/Specifications		
5.56mm	Variation	Balls, tracers, blanks
	Size	Same as the NATO standard
	Manufacturer	Asahi Seiki Manufacturing Co., Ltd. Showa Kinzoku Co., Ltd. (blanks)
7.62mm	Variation	Balls, tracers, blanks
	Size	Same as the NATO standard
	Manufacturer	Asahi Seiki Manufacturing Co., Ltd. Showa Kinzoku Co., Ltd. (blanks)
12.7mm	Variation	Balls, tracers, blanks
	Firearm	M2 Heavy Machine Gun
	Manufacturer	Nippon Koki, Co., Ltd.

Most of the ammunition listed is lead-free to reduce its environmental impact.

Ammunition

120mm Tank Ammunition

JM12A1 High-explosive Anti-tank Multipurpose

Type-10 APFSDS Round

Type-00 Training Shell

Performance/Specifications	
Caliber	120mm
Variation	High-explosive shells, armor-piercing fin-stabilized discarding sabots (APFSDS), training shells
Firearm	Type-90 tank, Type-10 tank
Manufacturer	Komatsu Ltd.(shells (licensed production)) Daikin Industries, Ltd. (APFSDS, training shells)

The APFSDS were developed in Japan to fit for the Type-10 tank. Its training shells disintegrate their cores in flight, in order to limit their flying distance.

Equipment of the Maritime Self-Defense Force

Warships

Izumo-class Helicopter Destroyer

Performance/Specifications	
Standard displacement	19,950t
Length	248m
width	38m
Depth	23.5m
Draft	7.1m
Speed	30kt
Carrying capacity	Approx. 470 crew members
Manufacturer	Japan Marine United Corporation (FY 2010 -)

The Izumo-class Helicopter Destroyer is expected to perform in a variety of operations, such as joint operations and serving as a control tower in disaster relief operations.

Warships

Atago-class Guided Missile Destroyer

Performance/Specifications	
Standard displacement	7,750t
Length	165m
width	21m
Depth	12m
Draft	6.2m
Speed	30kt
Carrying capacity	Approx. 310 crew members
Manufacturer	Mitsubishi Heavy Industries, Ltd. (FY 2002 -)

An Aegis system with Ballistic Missile Defense (BMD) capability is equipped on the Atago-class Guided Missile Destroyer.

Warships

Soryuu-class Submarine

Performance/Specifications	
Standard displacement	2,950t
Length	84m
width	9.1m
Depth	10.3m
Draft	8.5m
Speed	20kt
Carrying capacity	Approx. 65 crew members
Manufacturer	Kawasaki Heavy Industries, Ltd. Mitsubishi Heavy Industries, Ltd. (FY 2004 -)

The Soryuu-class Submarine is the world's largest conventionally powered submarine and is characterized by its quietness.

Warships

Osumi-class Tank Landing Ship

Performance/Specifications	
Standard displacement	8,900t
Length	178m
width	25.8m
Depth	17m
Draft	6m
Speed	22kt
Carrying capacity	Approx. 135 crew members
Manufacturer	Japan Marine United Corporation Mitsui E&S Shipbuilding., Co. Ltd. (FY 1993 -)

With its medical facilities for victims and supply facilities etc., the Osumi-class Tank Landing Ship is capable of conducting a variety of operations.

Equipment of the Maritime Self-Defense Force

Warships

Awaji-class Mine Sweeping Ocean

Performance/Specifications	
Standard displacement	690t
Length	67m
width	11m
Depth	5.2m
Speed	14kt
Carrying capacity	Approx. 50 crew members
Manufacturer	Japan Marine United Corporation (FY 2013 -)

The Awaji-class Mine Sweeping Ocean is highly capable of eliminating high-performance mines. It is particularly equipped to eliminate deep-water mines that target submarines as well.

Warships (Support Ship)

Chiyoda-class Submarine Rescue Tender

Performance/Specifications	
Standard displacement	5,600t
Length	128m
width	20m
Depth	9m
Draft	5.2m
Speed	20kt
Carrying capacity	Approx. 130 crew members
Manufacturer	Mitsui E&S Shipbuilding., Co. Ltd. (FY 2014 -)

The Chiyoda-class Submarine Rescue Tender rescues submarine crews in the event of accidents, provides medical assistance and helps victims in large scale disasters.

Warships (Support Ship)

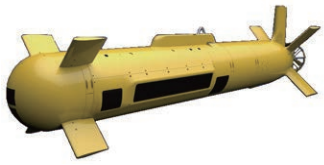
Masyuu-class Fast Combat Support Ship

Performance/Specifications	
Standard displacement	13,500t
Length	221m
width	27m
Depth	18m
Draft	8.0m
Speed	24kt
Carrying capacity	Approx. 145 crew members
Manufacturer	Japan Marine United Corporation Mitsui E&S Shipbuilding., Co. Ltd. (FY 2000 -)

The Masyuu-class Fast Combat Support Ship has substantially improved supply capacity to handle the increased demand for ship fuel, aviation fuel, ammunition, food and other necessities.

Equipment for Warships

Autonomous Underwater Vehicle for Mine Countermeasures OZZ-5



Performance/Specifications	
Length	4m
Width	0.5m
Endurance	9 hours or more
Speed	7kt or less
Manufacturer	Mitsubishi Heavy Industries, Ltd. (FY 2018-)

The OZZ-5 uses its low and high frequency synthetic aperture sonars to detect objects on or buried in the seabed.

Equipment of the Maritime Self-Defense Force

Aircraft

P-1 Maritime Patrol Aircraft

Performance/Specifications	
Crew	11
Total length	38.0m
Total width	35.4m
Total height	12.1m
Weight	Approx. 80t
Cruising speed	450kt
Manufacturer	Kawasaki Heavy Industries, Ltd. IHI Corporation (engine) (FY 2012 -) (operation start)

The P-1 Maritime Patrol Aircraft is the successor to the P-3C. It provides greater stability at low speed and low altitude flight, as well as faster mobility when compared with similar aircraft. The P-1 has wide visibility from the cockpit and ample space for on-board equipment, providing its crew advanced anti-submarine and warship warfare capabilities.

Aircraft

US-2 Search & Rescue Amphibian Aircraft

Performance/Specifications	
Crew	11
Total length	33.3m
Total width	33.2m
Total height	9.8m
Weight	47.7t
Maximum speed	315kt
Manufacturer	ShinMaywa Industries, Ltd. Rolls Royce (Engine) (FY 2007-) (operation start)

The US-2 Search & Rescue Amphibian Aircraft is the successor to the US-1A. It has a STOL (Short Take-Off and Landing) capability and can land on rough seas with waves of up to three meters

Aircraft

Anti-submarine Helicopter SH-60K

Performance/Specifications	
Crew	4
Total length	19.8m
Total width	16.4m
Total height	5.4m
Weight	10.9t
Maximum speed	139kt
Manufacturer	Mitsubishi Heavy Industries, Ltd. IHI Corporation (engine) (licensed production) (FY 2005-)(operation start)

The SH-60K is the successor to the SH-60J. It is equipped with an ISAR (Inverse Synthetic Aperture Radar) and ALFS (Airborne Low Frequency dipping Sonar), and capable of exchanging tactical information with team members on other planes.

Equipment for Aircraft

Sonar for Rotary Wing Patrol Aircraft HQS-103/104

Performance/Specifications	
Manufacturer	NEC Corporation (FY 1988-(HQS-103)) (FY 2002-(HQS-104))

Suspended in the sea from an anti-submarine helicopter, the HQS-103/104 picks up sounds from submarine engines or reflected off submarines, and shows the direction and distance to the submarine on its indicator.

Equipment of the Air Self-Defense Force

Aircraft

F-15J/DJ Fighter Plane

Performance/Specifications	
Crew	1 or 2
Total length	19.4m
Total width	13.1m
Total height	5.6m
Maximum speed	Approx. Mach 2.5
Manufacturer	Mitsubishi Heavy Industries, Ltd. IHI Corporation (engine) (licensed production) (FY 1981-)(operation start)

Because of the outstanding basic design of the F-15 and continued modernization of avionics and onboard equipment such as radars, the F-15J/DJ still remains a mainstay air fighter with well-balanced capabilities.

Aircraft

F-2A/B Fighter Plane

Performance/Specifications	
Crew	1 or 2
Total length	15.5m
Total width	11.1m
Total height	5.0m
Maximum speed	Approx. Mach 2.0
Manufacturer	Mitsubishi Heavy Industries, Ltd. Lockheed Martin Kawasaki Heavy Industries, Ltd. SUBARU Corporation General Electric Company (engine) (FY 2000 -) (operation start)

The F-2A/B is a fighter aircraft that fuses sophisticated US and Japanese technology while also accommodating Japanese operational concepts and geographical characteristics. It has a large main wing for improved turning performance. This aircraft is made with advanced materials and state-of-the art structural design to reduce weight and is equipped with the latest version of Japanese made radar systems.

Aircraft

T-4 Intermediate Trainer Aircraft

Performance/Specifications	
Crew	2
Total length	13.0m
Total width	9.9m
Total height	4.6m
Maximum speed	Approx. Mach 0.9
Manufacturer	Kawasaki Heavy Industries,Ltd. IHI Corporation (engine) (FY 1988 -)(operation start)

The T-4 Intermediate Trainer Aircraft, with excellent reliability and ease of maintenance, is equipped with ejection seats and an on-board oxygen generating system. This plane is made with carbon composite materials.

Aircraft

T-7 Primary Trainer Aircraft

Performance/Specifications	
Crew	2
Total length	8.6m
Total width	10.0m
Total height	3.0m
Maximum speed	Approx.203kt
Manufacturer	SUBARU Corporation Rolls Royce (engine) (FY 2002 -)(operation start)

The turboprop engine of the T-7 Primary Trainer Aircraft improves its performance and reduces noise.

Equipment of the Air Self-Defense Force

Aircraft

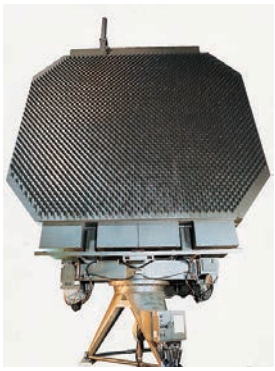
C-2 Transport Aircraft

Performance/Specifications	
Carrying capacity	Crew: 2-5 | troops: 110
Total length	43.9m
Total width	44.4m
Total height	14.2m
Maximum speed	Approx. Mach 0.82
Flight range	Approx. 7,600km (with a 20t load)
Manufacturer	Kawasaki Heavy Industries, Ltd. General Electric Company (engine) (FY 2016 -) (operation start)

The C-2 Transport Aircraft is the successor to the C-1. The C-2 is capable of airdropping a substantial amount of cargo and its turbofan engines enable high-altitude, high-speed and long-range air transportation.

Communication /Electric Equipment

Fixed 3D Air Surveillance Radar J/FPS-3



Performance/Specifications	
Composition	Long range antenna Short range antenna Pseudo radio wave generator Signal processing device Display control device
Manufacturer	Mitsubishi Electric Corporation (FY 1989 -)

The J/FPS-3 is an active phased array radar system that provides enhanced detection and tracking capabilities when compared to conventional radar systems. It has both long-range and short-range antennas, and its pseudo radio wave generator is useful for electronic warfare purposes.

Communication /Electric Equipment

Fixed 3D Air Surveillance Radar J/FPS-5

Performance/Specifications	
Composition	Antenna processing system Signal processing device Display control device
Manufacturer	Mitsubishi Electric Corporation (FY 2006 -)

The J/FPS-5 is an active phased array radar system developed to function as a radar for warning against and tracking ballistic missiles.

Communication /Electric Equipment

Fixed 3D Air Surveillance Radar J/FPS-7

Performance/Specifications	
Composition	Long range antenna Short range antenna Signal processing device Display control device
Manufacturer	NEC Corporation (FY 2012 -)

The J/FPS-7 is an active phased array radar system. It has both long range and short range antennas.

Equipment of the Air Self-Defense Force

Communication /Electric Equipment

Mobile over the Horizon Radio System (OH) J/TRQ-504

Performance/Specifications	
Composition	Wireless device A Wireless device B Multiplex terminal
Manufacturer	NEC Corporation (FY 1993-)

The J/TRQ-504 is an over-the-horizon (OH) communication device, using the UHF band. It enables transmission of 80 voice and 20 data channels through propagation paths by tropospheric scattering, mountain diffraction, or a combination of both.

Communication /Electric Equipment

TACtical Air Navigation device (TACAN)

Performance/Specifications	
Composition	Antenna device Antenna control device Transceiver Surveillance and control device
Manufacturer	NEC Corporation

The TACAN provides azimuth and distance information to an aircraft, to enable the aircraft to visually confirm its current position. There are fixed type and mobile type for this device. It transmits electric waves using a UHF band with a pulse modulation system.

Rescue Equipment, etc.

Life Preserver Unit T1-Modified

Performance/Specifications	
Usage	A life preserver for aviators stranded at sea
Application	F-15J/DJ F-2A/B RF-4EJ T-4
Manufacturer	FUJIKURA PARACHUTE Co., Ltd. Hosoya Pyro-Engineering Co., Ltd. (auto inflation device) (FY 1992-)

The Life Preserver Unit T1 - Modified is a life vest designed to be worn around the neck. The air chamber in this life preserver unit is designed to keep a person afloat.

Rescue Equipment, etc.

Aviation Helmet HGU-55P/J

Performance/Specifications	
Usage	Used by aviators for head/face protection and communication
Application	F-15J/DJ F-2A/B RF-4EJ T-4
Manufacturer	Daicel Corporation (licensed production)

The HGU-55P/J is an aviation helmet designed for ejection at high speed. It has a good fitting.

Guided Weapons

Middle Range Multipurpose Missile

Performance/Specifications		
Missile	Total length	Approx. 1.4m
	Diameter	Approx. 0.14m
	Weight	Approx. 26kg
Manufacturer		Kawasaki Heavy Industries, Ltd. (FY 2008 -)

The Middle Range Multipurpose Missile enables efficient searching and targeting of objects. This missile is highly mobile and adaptable as it can be vehicle mounted, transported by air or be air dropped.

Type-11 Short-range Surface-to-air Missile / Surface-to-air Missile System for Base-air-defense

Type-11 Short-range Surface-to-Air Missile System

Surface-to-air Missile System for Base-air-defense

Performance/Specifications		
Missile	Total length	Approx. 2.9m
	Diameter	Approx. 0.16m
	Weight	Approx. 100kg
Manufacturer		TOSHIBA Infrastructure Systems & Solutions Corporation (FY 2011 -)

This missile system is capable of capturing and tracking small supersonic missiles, such as cruise missiles (CM) and air-to-surface missiles (ASM), with its high-speed software signal processing technology.

Type-03 Medium-range Surface-to-air Missile (Improved)

Performance/Specifications		
Launcher	Total length	Approx. 11m
	Weight	Approx. 23t
Missile	Total length	Approx. 4.9m
	Diameter	Approx. 0.28m
	Weight	Approx. 460kg
Manufacturer		Mitsubishi Electric Corporation (FY 2017 -)

The Type-03 Medium-range Surface-to-air Missile (Improved) enables countering cruise missiles (CM). The vertical launch system and active phased array radar system provide it with capability to engage in 360-degree combat and cope with multiple targets simultaneously.

Type-12 Surface-to-ship Missile

Performance/Specifications		
Launcher	Total length	Approx. 12m
	Weight	Approx. 28t
Missile	Total length	Approx. 5.0m
	Diameter	Approx. 35cm
	Weight	Approx. 700kg
Manufacturer		Mitsubishi Heavy Industries, Ltd. (FY 2012 -)

The Type-12 Surface-to-ship Missile dodges hillsides according to a pre-programmed course and flies at low altitude over water to hit the target.

Guided Weapons

Guided Weapons (MSDF)

Missile for BMD (SM-3)

Performance/Specifications		
Missile	Total length	Approx. 6.6m
	Diameter	Approx. 1.6m
	Weight	Approx. 0.5m (1st stage)
Launch system		Mk 41
Manufacturer		Block IA, IB: imported Block IIA: Joint US-Japan

Mounted on aegis ships and launched from a vertical launch system (VLS), the SM-3 is an interceptor missile for short and medium range ballistic missile defense. The SM-3 Block IA and IB are imported, while the Block IIA is the product of Japan-US joint development and manufacture.

Guided Weapons (ASDF)

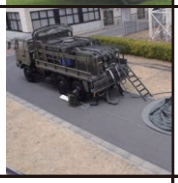
Air-to-ship Missile (ASM-3)

Performance/Specifications		
Missile	Total length	Approx. 6.0m
	Diameter	Approx. 0.35m
	Weight	Approx. 940kg
Manufacturer		Mitsubishi Heavy Industries, Ltd.

The ASM-3 is the successor to the F-2 mounted Type-80 air-to-ship missile (ASM-1) and the Type-93 air-to-ship missile (ASM-2), developed for effectively countering against the warships equipped with high-performance anti-aircraft armament. This missile is equipped with an integral rocket ramjet engine that makes it capable of supersonic flight.

MEMO

(Reference) Outlines of the Defense Industrial Bases of Japan

Category	Outline
Vehicles 	Bodies of tanks, armored vehicles and self-propelled howitzers are mostly developed domestically, since such military equipment utilizes specific defense technology to enable mobility and protection, among other requirements. Trucks and other general-use vehicles, on the other hand, utilize automotive manufacturing technology developed in the private sectors.
Engineering Equipment 	Most engineering equipment utilizes commercial products. However, some engineering equipment, including for constructing and breaching obstacles, consists of defense-specific technology. A wide range of engineering equipment is used for JSDF disaster relief operations.
Aircraft 	Aircraft manufacturing initially started with the licensed production of knock-down kits. The technology obtained through this form of production has paved the way for domestic aircraft developing and manufacturing.
Communication /Electronic Equipment 	Due to rapid technical innovation, communication/electronic equipment requires frequent updating; cost imperatives thus make it economical to use commercial-off-the-shelf products. However, as sensors and radar equipment is mostly manufactured for defense-specific purposes, it is difficult to apply this technology to the development of commercial products.
Quartermaster Equipment 	The development, manufacture, maintenance and improvement of quartermaster equipment is mostly undertaken among domestic companies. The manufacturers of fibers and other relevant materials maintain their qualitative superiority by applying their unique technology obtained through decades of experience and world-leading expertise.
Chemical Equipment 	The development, manufacture, maintenance and improvement of chemical defense equipment is mostly undertaken among domestic companies. High-quality technology in this field has in part been accumulated through research and development conducted by the Ministry of Defense.
Medical Equipment 	A limited number of companies are capable of producing field operation systems. These systems, comprised of several surgical, sterilization and sanitary units, incorporate products that are manufactured or imported by commercial medical equipment companies.
Firearms 	Most firearms are manufactured under licensing arrangements, although there exists firearms that are developed in Japan. Japan has accumulated manufacturing technology over many years through such arrangements.
Ammunition 	Ammunition is mostly developed and manufactured in Japan by a range of companies that specialize in the production of shells, propellants, and fuses, loading shells, and their assembly from suitability with firearm, shooting range and other constraints.
Warships 	The advanced technology, quality management capability, and cost-competitiveness of the shipbuilding sector sustains the facilities, technology, human resources, and other specialized assets required to produce and maintain warships. This sector produces submarines and constituent materials of warships, such as specialized steel, by utilizing advanced technologies.
Guided Weapons 	Guided weapons exclusively incorporate defense-specific technology. Japan has built up expertise in the field of guided weapons by conducting intensive research and development (R&D) and refining its manufacturing capabilities.

* Source: The Final Report of the Defense Production, Technological Infrastructure Study Group (June 2012)

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