

# ARCHIVED REPORT

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## Type 89

### Outlook

- Serial production of the Type 89 is dormant at the present time
- No export potential, as Japanese law precludes export of the Type 89
- The JGSDF is prioritizing the procurement of other armored vehicles, such as the Type 96 APC and the MCV tank destroyer, and is developing potential successor vehicles

### Orientation

**Description.** A tracked infantry fighting vehicle.

**Sponsor.** The Japan Ground Self-Defense Force (JGSDF) sponsors the procurement of the Type 89.

**Licensees.** None.

**Status.** Development through serial production.

**Total Produced.** Through 2014, we estimate the contractor produced four prototypes and 162 service-delivery Type 89 vehicles.

**Application.** An infantry combat vehicle, optimized for transporting infantry during combat operations.

**Price Range.** Its very low and uneconomical production rate makes the Type 89 the most expensive IFV in the world. In 2015 U.S. dollars, the Type 89 reportedly maintains a unit price of at least \$4.906 million.

### Contractors

#### Prime

<b>Mitsubishi Heavy Industries Ltd</b>	<a href="http://www.mhi-global.com">http://www.mhi-global.com</a> , 16-5 Konan 2-chome, Minato-ku, Tokyo, 108-8215 Japan, Tel: + 81 3 6716 3111, Fax: + 81 3 6716 5800, Prime
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#### Subcontractor

<b>Japan Steel Works Ltd</b>	<a href="http://www.jsw.co.jp">http://www.jsw.co.jp</a> , Gate City Ohsaki-West Tower, 11-1, Osaki 1-chome, Tokyo, 141-032 Shinagawa-ku, Japan, Tel: + 81 5745 2001, Fax: + 81 5745 2025 (Licensed 35mm Oerlikon KDE Cannon)
<b>Kawasaki Heavy Industries Ltd, (KHI)</b>	<a href="http://www.khi.co.jp">http://www.khi.co.jp</a> , 1-14-5 Kaigan, Minato-ku, Tokyo, 105-8315 Japan, Tel: + 81 3 3435 2111, Fax: + 81 3 3436 3037 (Type 87 Chyu-MAT Anti-tank Guided Missile System)

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<b>Kobe Steel Ltd</b>	<a href="http://www.kobelco.co.jp">http://www.kobelco.co.jp</a> , 9-12, Kita-Shinagawa 5-chome, Shinagawa-ku, Tokyo, 141-8688 Japan, Tel: + 81 3 5739 6000, Fax: + 81 3 5739 6903, Email: <a href="mailto:admin@kobelco.co.jp">admin@kobelco.co.jp</a> (Aluminum Armor)
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<b>Komatsu Ltd</b>	<a href="http://www.komatsu.com">http://www.komatsu.com</a> , 2-3-6 Akasaka, Minato-ku, Tokyo, 107-8414 Japan, Tel: + 81 3 5561 2616 (268-centimeter Track)
<b>Mitsubishi Hitachi Power Systems, (MHPS)</b>	<a href="http://www.mhps.com">http://www.mhps.com</a> , 1-1 Saiwai-cho, 3-chome Hitachi-shi, Ibaraki, 317-8511 Japan, Tel: + 81 3 3258 1111, Fax: + 81 3 3258 2507 (Automatic Gearbox)

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## Technical Data

**Note.** *The Japan Ministry of Defense and Japanese contractors tend to hold any technical data concerning their weapons systems very close to the vest. We base the following data on the most recent information available.*

**Crew.** Three: commander, gunner, and driver. The Type 89 carries seven fully equipped infantrymen.

**Armor.** All-aluminum welded armor, providing protection from ballistic fragments and 7.62mm small arms projectiles.

**Dimensions.** The height is to the top of the turret-mounted sight unit. The fuel capacity is estimated.

	<u>SI Units</u>	<u>U.S. Units</u>
Length	6.79 m	22.28 ft
Width	3.2 m	10.49 ft
Height	2.75 m	9.02 ft
Combat weight	26.96 tonnes	29.72 tons
Fuel capacity	419 liters	111.44 gal

**Performance.** The automotive performance data reflect use on a paved road.

	<u>SI Units</u>	<u>U.S. Units</u>
Maximum speed	70 kmph	43.5 mph
Maximum range	408 km	253.36 mi
Step	80 cm	2.62 ft
Trench	2.4 m	7.87 ft
Slope	35%	35%
Gradient	60%	60%
Fording	1.05 m	3.44 ft

**Engine.** Mitsubishi 6 SY 31 WA liquid-cooled, four-stroke, six-cylinder diesel engine. This powerplant generates 447.6 kilowatts (600 hp), with a power-to-weight ratio of 17.21 kilowatts per tonne (20.93 hp/ton).

**Gearbox.** An unspecified Hitachi automatic gearbox.

**Suspension and Running Gear.** Torsion bar suspension, with six dual-tire roadwheels and three track return rollers on each side. The drive sprocket mounts to the front.

### Armament

**Main Armament.** Oerlikon-Contraves 35mm KDE cannon. Japan Steel Works produces this ordnance under license. The Type 89 also features two Kawasaki Type 87 (Chyu-MAT) anti-tank guided missile systems,

with one launcher mounted on either side of the turret. The turret is power operated.

**Secondary Armament.** One coaxially mounted 7.62x51mm NATO (.308 Winchester) Type 74 machine gun. Three electrically operated smoke grenade launchers mount on each side of the turret.

The Chyu-MAT launchers require manual reloading. The number of missiles and amount of ammunition on board the Type 89 remain unknown.

**Fire Control.** The crew employs periscopic sights at the gunner's and commander's stations to aim the main armament and the Chyu-MAT anti-tank guided missiles. No further information is available concerning the fire control suite.

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## Variants/Upgrades

**Variants.** None.

**Modernization and Retrofit Overview.** None at this time. As the Type 89 is still relatively new and in

very low-rate production, the contractor has not yet developed a modernization and retrofit package.



JGSDF Type 89 Mechanized Infantry Combat Vehicle

Source: Japan Ministry of Defense

## Program Review

**Background.** In 1980, the Japan Ground Self-Defense Force (JGSDF) began the concept definition process for a mechanized infantry combat vehicle to replace at least a portion of its existing Type 73 and SU 60 armored personnel carrier inventory. The Japan Defense Agency (now the Japan Ministry of Defense) authorized initial developmental funding for the program in 1981; the 1984 defense budget appropriated funds for Mitsubishi Heavy Industries to produce four prototype vehicles. Following evaluations, the JGSDF type-classified the new vehicle as the Type 89.

### *JGSDF Procurement*

The JGSDF maintains a procurement objective of 300 Type 89 mechanized infantry combat vehicles. Our research indicates the Type 89 will be the spearhead infantry combat vehicle, complementing the Type 90 main battle tank in JGSDF service. Thus, we expect Type 89 procurement to parallel the Type 90 tank. However, budget reductions may limit Type 89 procurement to fewer than 250 vehicles, forcing the

JGSDF to retain the Type 73 and SU 60 armored personnel carriers as supporting vehicles.

**Description.** The Type 89 exhibits a conventional interior layout, albeit with a typical Japanese-style right-hand drive.

The driver sits in the right-forward portion of the hull; the engine compartment occupies the left-forward portion. The driver's station features a single-piece hatch cover and three day periscopes; the center periscope is interchangeable with a night vision device.

The fully powered two-man turret occupies the center of the vehicle. The commander sits to the right of the main armament; the gunner sits to the left. Both turret crew stations feature single-piece hatch covers. The commander's station features a periscopic sight and six periscopes for 360° observation. The gunner's station features a periscopic sight for aiming the KDE ordnance, plus two periscopes for a 180° field of view to the left. A laser warning device mounts on the turret roof.

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The rear troop compartment is slightly raised over the rest of the vehicle hull. A two-part roof hatch and two large outward-opening rear doors provide troop access/egress. The troop compartment features seven firing ports (three on each side and one in the right rear

door); each firing port features a roof-mounted periscope, for which night vision devices are available.

Finally, the Type 89 reportedly features an overpressure-type collective nuclear, biological, and chemical (NBC) protective suite.

## Related News

***Surplus Market for AAV7 Series Remains Strong as Nations Seek to Expand Amphibious Capabilities*** – The ascent of the People's Republic of China as a regional maritime power and the revival of territorial disputes in the South China Sea have accelerated efforts by armed forces across the region to further develop and refine their amphibious assault capabilities and enhance their ability to project military power over a number of hotly contested island chains.

The Japan Ground Self-Defense Force is currently in the process of forming a new amphibious deployment brigade, derived from the service's Western Army, in order to better protect the country's maritime interests. A central component of the new brigade is the planned procurement of 52 surplus AAV7 series vehicles from the United States, refurbished by BAE Systems to suit Japanese specifications.

The JGSDF ordered four preliminary models in 2013 and a further two in 2014. The JGSDF continues to conduct performance tests of the newly acquired models, but large-scale acquisitions are scheduled to begin soon, with Japan's FY15 defense budget calling for the procurement of 30 refurbished AAV7s within the fiscal year, at a cost of JPY20.3 billion.

In 2013, the Philippine Ministry of Defense opened a bidding initiative aimed at acquiring eight new-build AAV7 series vehicles for eventual deployment with the country's Marine Corps. Although no contractors responded to the MoD's initial bidding request, the subsequent process was reopened in May 2014. South Korean defense giant Samsung Techwin submitted the sole production proposal for the revived effort, offering to produce eight of its licensed KAAV7A1 variants and provide long-term logistical support for the products, at a total estimated cost of \$53 million (PHP2.42 billion).

The Philippine MoD and Marines are now in the process of assessing the feasibility of Samsung Techwin's bid, and are expected to make a final decision on the contract sometime in early-to-mid 2015. Assuming the deal moves forward, production of the vehicles is scheduled to take place over the course of approximately 2.5 years subsequent to the date of contract signing.

Although the Philippine military's desire for new-build AAV7 series vehicles stands as an uncommon deviation in a marketplace that has now overwhelmingly shifted toward the acquisition of surplus vehicle stocks, its core requirement for expanded amphibious assault capabilities is nevertheless firmly in step with regional trends. (FI, 3/15)

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## Funding

The Japan Ministry of Defense, through the Japan Ground Self-Defense Force, funds the development and JGSDF procurement of the Type 89.

## Contracts/Orders & Options

Not available, as neither the Japan Ministry of Defense nor the prime contractor has released contractual information regarding this program.

## Type 89

## Timetable

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<u>Month</u>	<u>Year</u>	<u>Major Development</u>
Early	1980	Concept definition
Jul	1981	JDA authorizes initial funding
	1984	JDA releases funding for first four prototypes
Early	1986	Mitsubishi commences production of prototypes
Mar	1989	Type 89 completes operational testing
	1989	JGSDF type-classifies vehicle as Type 89
	2015	Serial production dormant

## Worldwide Distribution/Inventories

**Export Potential.** None. Japanese law precludes the export of most military hardware.

**Country.** Japan (166, including 4 prototypes).

## Forecast Rationale

Production of the Type 89 mechanized infantry combat vehicle is dormant at this time.

### *Exclusive to the JGSDF*

Although the Japan Ground Self-Defense Force maintained an initial procurement objective of up to 300 Type 89 vehicles, the pace and scale of vehicle acquisition were decelerated considerably as the heightened concerns of the Cold War era in the Pacific gave way to the relatively placid security environment of the 1990s.

The current dormancy of the production line suggests that the JGSDF has fulfilled its requirement for Type 89 procurement.

Despite the cessation of Type 89 procurement, the JGSDF is dedicating substantial resources toward the expansion of its armored fleet through both the continued acquisition of new-build Type 96 APCs and the planned serial production launch of the Maneuver Combat Vehicle (MCV) in 2016.

In addition, the Japanese MoD has assigned JPY4.8 billion (\$46.92 million) in the FY14 Defense Budget toward the development of an enhanced successor to the Type 96.

The JGSDF could potentially pursue a small quantity of Type 89 follow-on orders during the forecast period, carried out in a manner akin to the JGSDF's recent practice of procuring a single new-build Type 87 reconnaissance vehicle in a given fiscal year.

However, any new-build Type 89 acquisitions would be undertaken primarily to maintain existing vehicle inventory levels and provide a small economic boost to Japan's domestic defense sector, rather than being a matter of necessity.

Japan's most pressing defense requirements now reside in the maritime sphere, and particularly in countering China's growing influence in the East China Sea. The JGSDF's mechanized doctrine is now being increasingly reoriented toward rapid deployment and amphibious power projection, tasks better suited to highly mobile wheeled designs and dedicated amphibious assault vehicles such as the AAV7.

As Japanese law precludes the export of lethal military hardware, there is also no export potential for this vehicle.

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