

# Rising sons: Japanese ground forces transformation continues apace

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The Japan Ground Self-Defense Force is in the advanced stages of a service-wide restructuring and modernisation programme that seeks to transform it into a leaner and more flexible organisation, better positioned to address a wider spectrum of domestic and international challenges. *Kelvin Wong* investigates the service's latest capabilities and future plans

In terms of manpower, the Japan Ground Self-Defense Force (Rikujō Jieitai or JGSDF) is the largest of the three branches in the Japan Self-Defense Force (JSDF) with 150,834 regular servicemen and 8,075 reserves at the end of fiscal year 2018 (FY 2018). Created on 1 July 1954 the JGSDF is responsible for the territorial defence of Japan's home islands – Hokkaido, Honshu, Shikoku, and Kyushu – with its five regional armies: the Northern, Northeastern, Eastern, Central, and Western armies.



*A Type 16 MCV demonstrating its ability to fire on the move during 'Fuji Firepower' 2018. The vehicle's main armament is a 105 mm rifled gun. (IHS Markit/Kelvin Wong)*

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Until the end of the Cold War, the service's core capabilities resided in its large fleet of heavy armour and artillery specifically configured to counter a potential Soviet invasion, particularly

against the northern island of Hokkaido. However, the country's strategic posture – outlined by successive National Defense Program Guidelines (NDPG) since 2004 – has evolved since the dissipation of the Soviet threat. It now aims to address challenges posed by an assertive China, the volatile Democratic People's Republic of Korea (DPRK), and a resurgent Russian Pacific presence, together with increasingly diverse non-traditional challenges such as cyber threats, global terrorism, and large-scale natural disasters, spurring Japan's defence policy-makers to push for comprehensive reforms across its defence forces.

For the JGSDF, these imperatives have resulted in a reduction of its heavy armour and artillery assets from a fleet of approximately 700 main battle tanks (MBTs) and 600 howitzers to approximately 300 MBTs and 300 howitzers. Newly created units called rapid deployment regiments (RDRs) – each sized at around 800 personnel and comprising a regimental headquarters (HQ), a HQ support company, three infantry companies, a manoeuvre combat vehicle company, a heavy mortar company, and an anti-aircraft platoon – have also been formed to exploit the additional mobility offered by new vehicles that are under development or have recently entered service.

### **Type 16 MCV**

At the core of these RDRs is the indigenous 8x8 Type 16 Mobile Combat Vehicle (MCV). The MCV was developed by the Ministry of Defense's (MoD's) Technical Research and Development Institute (TRDI) – its research and development arm and now part of the Acquisition, Technology, and Logistics Agency (ATLA) – and prime contractor Mitsubishi Heavy Industries (MHI) between 2008 and 2014 at a cost of JPY17.9 billion (then USD183 million).

Designed to be highly mobile and transportable, the MCV measures 8.45 m long, 2.98 m wide, and 2.87 m tall with a combat weight of 26 tonnes. It is equipped with a 570hp MHI 4-cylinder liquid-cooled turbocharged diesel powerpack producing a power-to-weight ratio of 21.92hp/tonne. This enables the vehicle to attain a maximum road speed of 100 km/h, while its drivetrain can be configured in 8x8 or 8x4 modes to suit terrain conditions. It is also fitted with a central tyre inflation system (CTIS), with steering control managed by the four front wheels.

The MCV's 105 mm/52-calibre rifled main gun, derived from the Type 74 MBT's L7 gun licensed-manufactured by Japan Steel Works, is equipped with a thermal sleeve, a pepper-pot type muzzle brake, and a bore evacuator. The gun can fire a range of ordnance, including the Type 93 armour-piercing fin-stabilised discarding sabot (APFSDS) and Type 91 high-explosive anti-tank multipurpose (HEAT-MP) rounds. A coaxial Sumitomo Type 74 7.62 mm machine gun (MG) and a roof-mounted Browning M2HB 12.7 mm heavy MG provide close-range defensive fire.

With the emphasis placed on mobility and transportability, the MCV sacrifices heavy armour protection, relying instead on its speed and manoeuvrability to enter and withdraw from firing positions or attack on the move to reduce its exposure to counter-fire. Although its specific

armour composition remains classified, it is believed that the vehicle's steel hull is clad in spaced steel plates that offer protection against 12.7 mm heavy MG fire on the sides and up to 20 mm-calibre fire across the frontal arc. Appliqué composite or explosive reactive armour (ERA) can be installed for operations in higher-threat environments if desired.

“When we designed the Type 16 MCV, trafficability – which is the ability of a vehicle to traverse a broad range of terrain types – was very important in our minds,” a senior official from the ATLA's Project Management Division (Communications and Electronic Systems, Ordnance and Vehicles) told *Jane's*, noting that the spectrum of operating environments for the vehicle could include confined urban environments, soft and muddy ground, and also challenging surfaces such as narrow rural and mountain trails.

“[Moreover], the vehicle can rapidly transit roads and highways on its own to repel or hold an invading force until the tank and infantry units arrive,” the official said. “Or it could transfer quickly to air or sea transportation hubs, where it can then be transported via the Japan Air Self-Defense Force's [JASDF's] Kawasaki C-2 multirole transport aircraft or roll-on/roll-off cargo ships, or high-speed ferries to our remote southwestern islands.”

*Jane's* understands that the MoD has authorised the purchase of 99 MCVs within the latest Mid-Term Defense Program (MTDP) that runs from FY 2014 to FY 2018 and concludes in March 2019. According to the MoD, tranches of 36, 33, and 18 vehicles were funded annually from FY 2016 through to FY 2018, respectively, with the latest batch ordered at a cost of JPY13.7 billion.

### **Type 10 'Hitomaru' MBT**

The JGSDF's 50 tonne Type 90 'Kyū-maru' MBT that replaced the ageing 35 tonne Type 61 medium tank and 38 tonne Type 74 MBT could not physically or legally traverse many of Japan's roads or about 35% of its major bridges due to its weight. Therefore TRDI embarked on an ambitious programme called the TK-X. TK-X was run in partnership with MHI as prime contractor to develop a lighter and more mobile MBT from FY 2002 and with the first prototype to be completed by the end of FY 2006.

**[Continued in full version...]**

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