

ARCHIVED REPORT

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MTVR

Outlook

- The U.S. Marine Corps ceased requesting general procurement funding for the MTVR program after FY13; any USMC procurement now occurs on an as-needed basis only
- Oshkosh has thus far exported the MTVR to Egypt, Greece, and the U.K.
- Absent new production orders, the center of gravity for the MTVR program is shifting to maintaining existing vehicles

Orientation

Description. A family of medium-payload tactical trucks and trailers.

Sponsor. The U.S. Marine Corps sponsors the development and U.S. procurement of MTVR trucks.

Licensees. None.

Status. Development through serial production.

Total Produced. Through 2016, we estimate Oshkosh produced at least 11,100 MTVR vehicles in various configurations.

Application. A series of trucks and trailers based on a common chassis and optimized for unit resupply.

Price Range. According to U.S. Department of Defense budget request documentation, MTVR vehicles carried the following unit prices for the fiscal years indicated:

- Cargo: \$225,596.00 (FY10)
- Cargo, Armored: \$358,232.00 (FY11)
- Cargo, XLWB: \$574,000.00 (FY15)
- Dump Truck: \$314,555.26 (FY13)
- Wrecker: \$608,762.00 (FY10)
- Tractor: \$422,587.00 (FY11)

Contractors

Prime

Oshkosh Corp

<http://www.oshkoshcorporation.com>, 2307 Oregon St, PO Box 2566, Oshkosh, WI 54903-2566 United States, Tel: + 1 (920) 235-9150, Fax: + 1 (920) 233-9607, Email: jsalas@oshtruck.com, Prime

MTVR**Subcontractor**

Allison Transmission Division, General Motors Corp	http://www.allisontransmission.com , One Allison Way, PO Box 894, Indianapolis, IN 46222-3271 United States, Tel: + 1 (317) 242-5000 (Allison 4700 Automatic Transmission)
Caterpillar Inc	http://www.caterpillar.com , 501 Southwest Jefferson Ave, Peoria, IL 61630 United States, Tel: + 1 (309) 675-0545 (CAT C13 Diesel Engine)
Michelin North America Inc	http://www.michelinman.com , 1 Pkwy S, Greenville, SC 29615 United States, Tel: + 1 (866) 866-6605 (16R20 XZL Tires)

Contractors are invited to submit updated information to Editor, International Contractors, Forecast International, 22 Commerce Road, Newtown, CT 06470, USA; rich.pettibone@forecast1.com

Technical Data

Crew. Two: commander and driver. The cab also provides seating for one additional passenger.

Configuration. 6x6.

Dimensions. The following data reflect the production-standard base Mk 23 version of the 6x6 MTVR cargo truck. Data for the Mk 27 Extended Length Wheel Base (XLWB) cargo version is in parentheses where applicable.

	<u>SI Units</u>	<u>U.S. Units</u>
Length	8.0 (9.82) m	26.24 (32.21) ft
Width	2.49 m	8.17 ft
Height	3.59 (3.57) m	11.77 (11.72) ft
Wheelbase	4.67 (5.49) m	15.33 (18.0) ft
Cargo bed	4.0x2.34 (6.12x2.34) m	13.13x7.68 (20.07x7.68) ft
Load capacity	13.1 tonnes	15.0 tons
Fuel capacity	303 liters	78 gal
Vehicle curb weight	12.6 (13.7) tonnes	13.9 (15.09) tons

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

	<u>SI Units</u>	<u>U.S. Units</u>
Maximum speed	105 kmph	65 mph
Cruising range	483 km	300 stat mi
Slope	40%	40%
Gradient	60%	60%
Fording	1.52 m	5.0 ft

Engine. Caterpillar C13 six-cylinder diesel engine. This powerplant generates 328.24 kilowatts (440 hp), with a power-to-weight ratio of 26.05 kilowatts per tonne (31.65 hp/ton).

The MTVR's electrical system provides 24 volts/150 or 300 amps of starting power and 12 volts/10 amps for accessories in the cab.

Gearbox. Allison 4700 automatic unit (one reverse and seven forward gear ratios), with an

Oshkosh 30000-series single-speed transfer case. The vehicle features an integral power steering system and air drum-type brakes (wedge brakes in front and S-cam in rear) with ABS/ATC.

Suspension and Running Gear. Oshkosh TAK-4 modular independent suspension, with coil springs.

The vehicle mounts Michelin 16R20 XZL tubeless all-terrain tires, with an Eaton central tire inflation system.

Variants/Upgrades

Variants. The MTVR program currently consists of the following variants:

<u>Designation</u>	<u>Configuration</u>	<u>Description</u>
Mk 23	6x6	Standard cargo
Mk 25	6x6	Standard cargo with winch
Mk 27	6x6	Extended Length Wheel Base (XLWB) cargo
Mk 28	6x6	XLWB cargo with winch
Mk 29	6x6	Dump truck
Mk 30	6x6	Dump truck with winch
Mk 31	6x6	Tractor
Mk 36	6x6	Wrecker
Mk 37	6x6	HIMARS resupply
MTVR 4x4	4x4	Short bed cargo
MTVR 4x4	4x4	Short bed cargo with winch
MTVR 9-ton LHS	6x6	Load Handling System (LHS)
MTVR 16.5-ton LHS	6x6	LHS

Modernization and Retrofit Overview. In 2005, the U.S. Marine Corps awarded Oshkosh an MTVR contract under which Oshkosh would return the vehicles in "as-new" condition with full new-vehicle warranties. While this contract was extremely limited in terms of vehicle quantities – yielding only 53 vehicles through 2007 – it nevertheless established the groundwork for future MTVR remanufacture programs.

Aside from vehicle remanufacture, the modernization and retrofit of MTVR trucks has primarily focused on two areas:

- Integration of various armor protection kits under the MTVR Armor Systems (MAS) and the MTVR Armor Systems with Survivability Upgrade (MAS-SU) programs.

- Integration of an onboard power generation capability for MTVR trucks through the Office of Naval Research's On-Board Vehicle Power (OBVP) technology development initiative. The ONR's objective is to field systems that deliver 120 kW of exportable power while the vehicle is stationary and 21 kW of power while it is on the move.

The MTVR is also the platform for Oshkosh's TerraMax unmanned autonomous vehicle. The TerraMax is an element of the U.S. Army Tank Automotive Research, Development and Engineering Center (TARDEC) effort to develop an unmanned convoy system.



Mk 23 MTVR Cargo Truck

Source: Oshkosh Corp

MTVR**Program Review**

The Medium Tactical Vehicle Replacement program grew out of a mid-1990s effort by the U.S. Marine Corps to upgrade, refurbish and extend the service life of the Corps' 8,100 M809-series and M939-series 5-ton trucks. In 1996, the Marines awarded Oshkosh a prototype and development contract for the MTVR program. At this stage, the program objectives were centered on upgrading existing 5-ton vehicles as follows:

- Upgrade vehicle cargo capacity to 7.1 tons off-road and 15 tons on-road.
- Integrate an 80 percent more powerful 425-hp engine.
- Install anti-lock brakes and a traction control system.
- Integrate a fully independent coil-spring suspension.
- Apply anti-corrosion treatments to support the USMC requirement of a 22-year service life.

Upgrade vs. New Production

During the early phases of development, Oshkosh found the only components of the existing 5-ton vehicles that could be reused for the new vehicle configuration were the hood, cab and load bed. Moreover, even these components required extensive structural enhancements to meet the new payload and off-road mobility requirements. Thus, Oshkosh convinced the Marine Corps that a new-production vehicle program would ultimately be more cost-effective than the original upgrade plans.

In February 1999, the U.S. Department of Defense awarded Oshkosh a multiyear procurement contract for up to 8,168 new-production MTVR trucks in four variants:

- Mk 23 standard cargo truck
- Mk 25 standard cargo truck with winch
- Mk 27 XLWB cargo truck
- Mk 28 XLWB cargo truck with winch

Oshkosh completed deliveries of the initial tranche of 6,393 MTVR trucks to the U.S. Marine Corps and 538 MTVR trucks to the U.S. Navy Seabees in August 2005.

Expanding the Line

In July 2004, the U.S. DoD awarded Oshkosh a follow-on contract for more than 2,000 additional MTVR trucks. Along with the original four MTVR variants, this contract added procurement of the following three additional configurations:

- Mk 29 dump truck
- Mk 30 dump truck with winch
- Mk 36 wrecker

The U.S. Marine Corps has also procured the following two additional MTVR variants:

- Mk 31 tractor
- Mk 37 HIMARS resupply vehicle

The 10,000th MTVR truck rolled off the Oshkosh assembly line in May 2008.

Oshkosh also promotes the following four additional MTVR variants for possible future domestic and export sales:

- MTVR 4x4 short bed cargo truck
- MTVR 4x4 short bed cargo truck with winch
- MTVR 9-ton LHS vehicle
- MTVR 16.5-ton LHS vehicle

The LHS represents an application of Oshkosh's HEMTT Palletized Load System cargo capability for the MTVR. For more information on the PLS/LHS capability, see the "M977 Heavy Expanded Mobility Tactical Truck" report in this service.

Marines Hit the Brakes

Despite the combat record of the MTVR in Iraq and Afghanistan, the program has nevertheless encountered an obstacle that even this rugged family of vehicles cannot negotiate – funding. According to U.S. Department of Defense FY16 budget request documentation (February 2015), the U.S. Marine Corps did not request any general procurement funding for the MTVR program after FY13. As procurement by the U.S. Marine Corps and U.S. Navy Seabees represents nearly 96 percent of MTVR production to date, the loss of USMC funding is potentially devastating to the MTVR program.

Related News

Budget Limitations Biggest Threat to DoD's Family of Medium Tactical Vehicles – The U.S. Department of Defense procured at least 78,180 FMTV trucks through 2015. FMTV trucks and trailers have effectively replaced aging 2.5-ton and 5-ton trucks in U.S. Army and U.S. Air Force inventories.

Since winning the FMTV Rebuy contract in August 2009, Oshkosh Defense has continued to deliver FMTV trucks and trailers. The overall FMTV Rebuy contract is worth \$4 billion for up to 23,000 FMTV trucks.

According to U.S. Army FY17 budget request documentation (February 2016), the Army Acquisition Objective for the FMTV program remains at 83,185 trucks - 38,095 LMTVs and 45,090 MTVs.

The Army and Air Force FY17 budget requests both reflect funding for FMTV procurement through at least FY21.

Tactical support vehicles have long been a relatively neglected portion of the U.S. Army's tactical vehicle inventory. For years, fiscal constraints prevented the U.S. Army from committing to a new generation of tactical support vehicles.

While combat conditions finally forced the U.S. Army to replace its aging 2.5-ton and 5-ton trucks with the FMTV, the fact remains that budget limitations will continue to be the greatest threat to the combat-proven family of Medium Tactical Vehicles. (FI, 12/16)

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Funding

According to U.S. Department of Defense budget request documentation, the U.S. Marine Corps ceased funding for the MTVR program after FY15. All amounts are in millions of U.S. dollars.

U.S. FUNDING						
	FY13 <u>QTY</u>	FY13 <u>AMT</u>	FY14 <u>QTY</u>	FY14 <u>AMT</u>	FY15 <u>QTY</u>	FY15 <u>AMT</u>
Procurement						
MTVR	32	10.5	-	-	2	0.6
Total	32	10.5	-	-	2	0.6
	FY16 <u>QTY</u>	FY16 <u>AMT</u>	FY17 <u>QTY</u>	FY17 <u>AMT</u>	FY18 <u>QTY</u>	FY18 <u>AMT</u>
Procurement						
MTVR	-	-	-	-	-	-
Total	-	-	-	-	-	-
	FY19 <u>QTY</u>	FY19 <u>AMT</u>	FY20 <u>QTY</u>	FY20 <u>AMT</u>	FY21 <u>QTY</u>	FY21 <u>AMT</u>
Procurement						
MTVR	-	-	-	-	-	-
Total	-	-	-	-	-	-

MTVR**Timetable**

<u>Month</u>	<u>Year</u>	<u>Major Development</u>
	1996	Oshkosh and AM General awarded prototype and development contracts for the U.S. Army's 5-ton Tactical Truck Replacement program and the U.S. Marine Corps' Medium Tactical Vehicle Replacement program
Feb	1999	U.S. DoD awards Oshkosh initial MTVR procurement contract
Jul	2001	USMC fields first MTVR trucks
Mar	2003	U.K. MoD becomes first MTVR export customer by awarding Oshkosh the wheeled tanker contract
Jul	2004	U.S. DoD awards Oshkosh FY05-FY10 follow-on MTVR procurement contract
Aug	2005	Oshkosh completes deliveries under initial 6,931-vehicle procurement contract
May	2008	Oshkosh completes 10,000th MTVR truck
	2014	USMC ceases requesting general procurement funding for the MTVR program
	2016	Serial production dormant; development and marketing continue

Worldwide Distribution/Inventories

Export Potential. Despite a proven record of service with the U.S. Marine Corps, the MTVR has thus far only scored a moderate level of export sales.

In March 2003, the U.K. Ministry of Defence selected the MTVR platform for a \$250 million wheeled tanker contract. Under the terms of the 15-year procurement and support contract, Oshkosh was to deliver 357 tankers in various configurations.

Between 2004 and 2006, Greece procured 73 Mk 27 MTVR trucks.

In 2007, Oshkosh delivered an initial 30 Medium Tactical Trucks (a lower-priced MTVR variant) to Egypt.

Countries. Egypt, Greece, United Kingdom, United States (U.S. Marine Corps and U.S. Navy Seabees).



Mk 29 MTVR Dump Truck

Source: Oshkosh Corp

Forecast Rationale

The Medium Tactical Vehicle Replacement program grew out of a mid-1990s effort by the U.S. Marine Corps to upgrade, refurbish, and extend the service life of the Corps' 8,100 M809-series and M939-series 5-ton trucks. In 1996, the Marines awarded Oshkosh a prototype and development contract for the MTVR program.

During the early phases of development, Oshkosh found that only three components of the existing 5-ton vehicles – the hood, cab, and load bed – could be reused for the new vehicle configuration. Moreover, even these components required extensive structural enhancements to meet the new payload and off-road mobility requirements. Oshkosh convinced the Marine Corps that a new-production vehicle program would ultimately be more cost-effective than the original upgrade plans.

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