

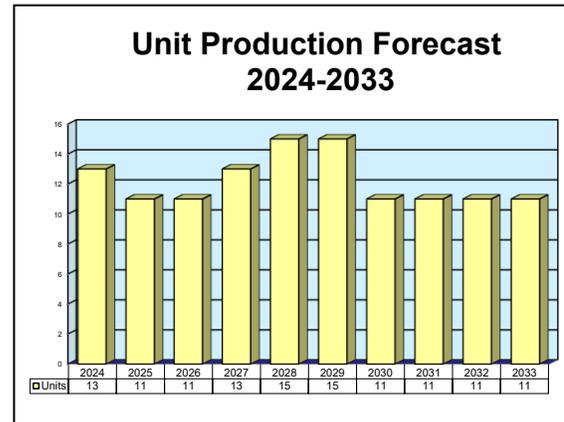
ARCHIVED REPORT

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V-150 and M1117 Armored Security Vehicle

Outlook

- According to U.S. DoD budget request documentation, the U.S. Army no longer maintains a budget line for the M1117 ASV
- Forecast reflects prospects for Commando export sales
- August 2021: At least 720 M1117 ASVs fell into Taliban hands in Afghanistan



Orientation

Description. Wheeled armored vehicles.

Sponsors. The prime contractor developed this series of vehicles as a private venture.

Licensees. None.

Status. Development through serial production.

Total Produced. Through 2023, we estimate the prime contractor produced 3,229 V-150 vehicles and 3,953 M1117 ASV / Commando vehicles.

Application. A multirole, light armored personnel carrier, optimized for internal security/police missions.

Price Range. In 2024 U.S. dollars, the M1117 ASV carries an estimated unit price of \$1.4 million.

Contractors

Prime

Textron Systems, Marine & Land Systems	http://www.textronsystems.com , 1010 Gause Blvd, Slidell, LA 70458 United States, Tel: + 1 (985) 661-3600, Fax: + 1 (985) 661-3694, Prime
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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 (MD 3560 P Automatic Gearbox)
Cummins Inc	http://www.cummins.com , 500 Jackson St, PO Box 3005, Columbus, IN 47202 United States, Tel: + 1 (317) 610-2488, Fax: + 1 (812) 377-3334, Email: engines@cummins.com (6TCA 8.3 Diesel Engine)

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Hutchinson Industries Inc	http://www.hutchinsoninc.com , 460 Southard St, Trenton, NJ 08638 United States, Tel: + 1 (609) 394-1010, Fax: + 1 (609) 394-2031, Email: sales@hutchinsoninc.com (Run-Flat Insert)
Irvine Sensors Corp, Optex Systems Inc	http://www.irvine-sensors.com , 3001 Red Hill Ave, Bldg 4, Suite 108, Costa Mesa, CA 92626 United States, Tel: + 1 (714) 444-8700, Fax: + 1 (714) 444-8773, Email: investorrelations@irvine-sensors.com (M-36 Optical Sight)
Leonardo DRS, Land Systems	http://www.leonardodrs.com , 4201 Innovation Way, Bridgeton, MO 63044 United States, Tel: + 1 (314) 553-4000, Fax: + 1 (314) 553-4080, Email: jbishop@drs-ssi.com (M1200 Knight Modification)
Michelin North America Inc	http://www.michelinman.com , 1 Pkwy S, Greenville, SC 29615 United States, Tel: + 1 (866) 866-6605 (14x20 Tires)

Contractors are invited to submit updated information to Editor, International Contractors, Forecast International, 75 Glen Road, Suite 302, Sandy Hook, CT 06482, USA; rich.pettibone@forecast1.com

Technical Data

Commando Select and Commando Elite

Crew. Three: commander, gunner, and driver, plus one to seven passengers (depending upon configuration).

Armor. According to the contractor, the vehicles offer protection against direct- and indirect-fire weapons, mines, and improvised explosive devices (IEDs).

Configuration. 4x4.

Dimensions. The following data are for the Commando Select vehicle line.

	<u>SI Units</u>	<u>U.S. Units</u>
Length	6.63 m	21.75 ft
Width	2.74 m	9 ft
Height	3.02 m	9.92 ft
Gross vehicle weight	17.24 tonnes	19 tons
Ground clearance	66 cm	26 in
Fuel capacity	302 liters	80.32 gal

Performance. The speed and range data reflect use on a paved road. Data for the Commando Elite are in parentheses where different.

	<u>SI Units</u>	<u>U.S. Units</u>
Maximum speed	100 (105) kmph	62 (65) mph
Maximum range	644 km	400 stat mi
Step	56 (61) cm	22 (24) in
Trench	70 cm	27.48 in
Side slope	30%	30%
Gradient	60%	60%
Fording	1.5 m	5 ft

Engine

Commando Select. Cummins 6 CTA 8.3 liquid-cooled, six-cylinder supercharged diesel engine. This powerplant generates 193.9 kilowatts (280 hp), with a power-to-weight ratio of 12.12 kilowatts per tonne (18.98 hp/ton). The 24-volt electrical system features two 12-volt/100-ampere-hour batteries.

Commando Elite. Cummins QSL 365 liquid-cooled, six-cylinder supercharged diesel engine. This powerplant generates 272.29 kilowatts (365 hp), with a power-to-weight ratio of 15.79 kilowatts per tonne (19.21 hp/ton). The 24-volt electrical system features two 12-volt/100-ampere-hour batteries. The Commando Elite also features a 400- and 575-amp alternator.

Gearbox. Allison automatic gearbox, with one reverse and six forward gears. The drivetrain features a two-speed transfer case.

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Suspension and Running Gear. Fully independent suspension, with upper and lower control arms. The Commando Select and Commando Elite both mount Michelin 16.00R20 XZL tires with Hutchinson run-flat inserts. A central tire inflation system is available as an option.

Armament. The Commando Select and Commando Elite vehicles can accommodate a wide variety of turret- or RWS-mounted ordnance, including machine guns, light cannon (up to 90mm), 40mm grenade launchers, and anti-tank guided missile launchers.

M1117 Armored Security Vehicle and Commando Advanced

Crew. Three: commander, gunner/laser weapon operator, and driver, plus one to seven passengers (depending upon configuration).

Armor. According to the contractor, the vehicles offer protection against direct- and indirect-fire weapons, mines and IEDs.

Configuration. 4x4.

Dimensions. The following data are for the production-standard U.S. Army M1117 ASV, with data for the Commando Advanced line in parentheses where different.

	<u>SI Units</u>	<u>U.S. Units</u>
Length	6.02 (6.63) m	19.75 (21.75) ft
Width	2.56 m	8.47 ft
Height	2.59 m	8.5 ft
Gross vehicle weight	14.97 (16.33) tonnes	16.5 (18.00) tons
Ground clearance	46 cm	18 in
Fuel capacity	302 liters	80.32 gal

Performance. The speed and range data reflect use on a paved road. Data for the Commando Advanced line in parentheses where different.

	<u>SI Units</u>	<u>U.S. Units</u>
Maximum speed	105+ kmph	65+ mph
Maximum range	708 (644) km	440 (400) stat mi
Step	56 cm	22 in
Trench	70 cm	27.48 in
Side slope	30%	30%
Gradient	60%	60%
Fording	1.5 m	5 ft

Engine. Cummins 6 CTA 8.3 liquid-cooled, six-cylinder supercharged diesel engine. This powerplant generates 193.9 kilowatts (260 hp), with a power-to-weight ratio of 15.6 kilowatts per tonne (18.98 hp/ton). The 24-volt electrical system features two 12-volt/100-ampere-hour batteries.

Michelin 14.00R20 tires with Hutchinson run-flat inserts. A central tire inflation system is available as an option.

Gearbox. Allison automatic gearbox, with one reverse and six forward gears. The drivetrain features a two-speed transfer case.

Armament. The M1117 ASV features the Textron Marine & Land Systems one-man turret, based on that contractor's Uppgunned Weapon Station for the AAV7A1 vehicle.

Suspension and Running Gear. Fully independent suspension; each wheel station mounts double-acting, hydropneumatic shock dampers. The M1117 ASV and Commando Advanced mount

The M1117 ASV turret mounts one 40mm Mk 19 automatic grenade launcher and one 12.7x99mm (.50-cal) M2HB heavy machine gun. Other armament options are possible.

Various armament options are available from the contractor for the Commando Advanced line.

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Variants/Upgrades

Variants. The basic Commando design is adaptable to a variety of missions, with numerous turret and weapons options available – a strong selling point on the international market. The prime contractor developed the following major variants of the V-150:

<u>Designation</u>	<u>Description</u>
V-100	Basic 4x4 armored vehicle.
V-200	Follow-on to the original V-100.
V-150	Improved version of the V-200. See Technical Data , above.
V-150 ST	Upgraded version of V-150. See Technical Data , above.
ASV-150/M1117	Current production-standard Armored Security Vehicle. See Technical Data , above.
C/G One-Man Turret	V-150 with Cadillac Gage one-man manually operated turret, mounting twin machine guns, a 1.5x M28C sight, and a 500,000-candlepower spotlight.
C/G 1-meter Turret	Variant of Cadillac Gage 1-man turret (above). Features electrohydraulic turret mounting 20mm Örlikon-Contraves 204 GK cannon and 7.62x51mm NATO (.308 Winchester) machine gun. Also called Cadillac Gage two-man turret.
25mm Turret	V-150 with powered turret, mounting 25mm M242 Chain Gun and two 7.62x51mm NATO (.308 Winchester) M240 machine guns.
30mm Turret	V-150 with powered turret, mounting BAE Systems (RO Defence) 30mm RARDEN cannon and two 7.62x51mm NATO (.308 Winchester) machine guns.
Air Defense	V-150 with GDAS 20mm M167 Vulcan AAA system turret.
76mm Turret	V-150 with two-man-powered turret, mounting BAE Systems (RO Defence) L23A1 cannon and with two 7.62x51mm NATO (.308 Winchester) machine guns.
90mm Turret	V-150 with powered turret, mounting 90mm CMI Defence (MECAR) 90/28 gun or 90mm Mk III gun. Crew of three, plus four infantrymen. Variety of fire control components available.
81mm Mortar	V-150 with turntable-mounted 81mm M29 mortar. Crew of five.
TOW	V-150 with BGM-71 TOW ATGM system.
Command Vehicle	V-150 command vehicle, featuring additional communications equipment.
ERV	V-150 emergency rescue vehicle; also for internal security and police applications. Mounts single 7.62x51mm NATO (.308 Winchester) or 12.7x99mm (.50-cal) machine gun.
Recovery Vehicle	V-150 with heavy-duty winch and basic repair equipment.
Base Security Vehicle	V-150 with concertina-type hatch and four mounting positions for 40mm Mk 19 automatic grenade launcher and 7.62x51mm NATO (.308 Winchester) machine guns. Crew of three, plus eight infantrymen.
Ambulance	Unarmed V-150 with raised roof; carries two litters and four seated patients.

The prime contractor developed the following vehicles as the M1117 ASV product line:

<u>Designation</u>	<u>Description</u>
M1117 ASV	Current production-standard armored security vehicle. See Technical Data , above.
ASV Command & Control Vehicle	Basic M1117 without the turret. Work stations for four battle staff. Vehicle features netted computers, GPS, and multiple radios.
ASV ICV	Infantry Carrier Vehicle. Stretched version of M1117 ASV, with seating to customer specifications. Three levels of armor protection available.
ASV RSTA	Reconnaissance, Surveillance and Target Acquisition Scout Vehicle. Features 40/50 power-controlled stabilized turret, eyesafe laser rangefinder, and thermal day/night target acquisition sight.
ASV Recovery Vehicle	Produced in response to request from Iraqi Civil Intervention Force. Features 10,000-pound capacity boom, a towing capacity of 36,000 pounds, stabilizing bars, and a spade.
M1200 Armored Knight	M1117-based armored platform for U.S. Army Field Artillery Combat Observation Lasing Teams (COLT).
ASV Ambulance	Contractor proposal for an armored ambulance based on the turretless ASV ICV.
M1117 Air Force	U.S. Air Force M1117 variant

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The contractor has now consolidated its various V-150 Commando and M1117 ASV vehicle configurations into the following Commando lines:

<u>Designation</u>	<u>Description</u>
Commando Advanced	Derived from the M1117 ASV. Available in the following configurations: armored security vehicle; armored personnel carrier; reconnaissance vehicle; command and control vehicle; engineering vehicle; and maintenance vehicle.
Commando Select	Enhanced version of the basic Commando Advanced line. Available in the following configurations: APC (with turret); APC ambulance; 90mm direct fire vehicle; and mortar vehicle.
Commando Elite	Further enhanced version of the Commando line. Optimized for integrating either turret-mounted or RWS-mounted weapons. Various weapon and mission equipment options available for customization to customer specifications. Also features a digital backbone for vehicle systems monitoring and future electronics expansion. Available in the following configurations: APC; reconnaissance vehicle; command and control vehicle; engineering vehicle; and maintenance vehicle.

Modernization and Retrofit Overview. The potential for engine retrofit and further armament integration exists. This, however, remains a secondary concern, given the variants and options currently available.



M1117 Armored Security Vehicle

Source: Cadillac Gage Textron Inc

Program Review

Background. The development of the Commando range of light armored vehicles began in 1962 as a private venture. The first prototype was rolled out in 1963.

A Vietnam Vet

In 1964, the first production model (the V-100) entered service with the U.S. armed forces as the M706. This vehicle saw extensive use in Vietnam. It also became a popular export product for use by police, internal security, and paramilitary units worldwide. Cadillac Gage sold the heavier V-200 only to Singapore (250).

In the 1980s, Cadillac Gage accused Bravia S.A.R.L. of Portugal of stealing the V-200 design and producing it

as the Chaimite in a number of versions. Bravia produced well over 500 Chaimite vehicles.

Second Generation Becomes Standard

In October 1971, the improved V-150 replaced the earlier models as the production standard. Entering production for export sales in 1983, the S and ST versions of the V-150 represented the latest versions of this vehicle until the advent of the Armored Security Vehicle-150. The ASV-150 (which the U.S. Department of Defense type-classified as the M1117) is broadly based on the V-150 ST. In 2000, Textron Marine & Land Systems began to market the ASV-150 in place of the V-150 S and ST.

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Description. The Commando series makes extensive use of standard automotive components. The program has also exhibited a steady series of engine enhancements.

Unusual Layout

The vehicle exhibits a somewhat unusual interior layout for a vehicle of this class in that the engine mounts at the left-rear of the chassis. Removable panels on the top and sides of the vehicle provide access to the engine compartment. The driver sits at the left-front of the hull, with the commander to his right. In addition to the two-piece windscreen, the driver's station features three vision blocks and the commander's station features two vision blocks. A single-piece hatch cover is located in the roof between the driver and commander.

The troop compartment occupies the middle of the vehicle, with troop seats along each side. Each side of the vehicle features a two-part door, with a firing port and vision block in the upper half of the door. A door at the rear of the vehicle provides the passengers an additional point of access/egress. A cupola at the rear of the troop compartment roof provides a mount for a machine gun. The turret station at the middle of the

vehicle can accommodate a wide variety of turret and ordnance options.

The Commando/M1117 is air-transportable via C-130 and C-17 tactical transport aircraft.

A Well-Equipped Vehicle

Standard equipment includes the following:

- A fire extinguishing system
- Run-flat tires
- An internally mounted winch with a capacity of 4.53 tonnes (4.98 tons) and 48.76 meters (160 ft) of cable
- Spare vision blocks
- An air compressor with a hose, tools, and fuel/water cans

Optional equipment includes smoke grenade launchers; pintle mounts for various weapons; spotlights; night vision equipment; a heater; air conditioning; a nuclear, biological and chemical (NBC) protective suite; a lifting boom; numerous weapons storage options; and various types of communication equipment.

Funding

Textron Marine & Land Systems privately funds its Commando armored vehicle program. The U.S. Army no longer maintains a budget line for procurement of M1117 armored security vehicles.

Worldwide Distribution/Inventories

Export Potential. With the Commando line, Textron Marine & Land Systems/Cadillac Gage has successfully competed with established French designs on the international light wheeled vehicle market. The Commando series of light wheeled vehicles has earned a solid reputation for ruggedness, ease of maintenance, and simple operation. The contractor has provided an excellent level of aftermarket support for the vehicles – another factor in the sales success of the Commando. More than 30 countries besides the United States operate the Commando in their armed forces or police units; a number of additional sales have gone unreported.

Countries. The following entities reportedly maintain the V-150/M1117 ASV in their inventories through 2023: **Afghanistan/Taliban; Bahrain; Bolivia; Botswana; Bulgaria; Cambodia; Cameroon; Chad; Chile; Republic of China (Taiwan); Colombia; Costa Rica; Dominican Republic; Ethiopia; Gabon; Guatemala; Haiti; Indonesia; Iraq; Jamaica; Kuwait; Laos; Luxembourg; Malaysia; Mexico; Oman; Panama; Peru; Philippines; Portugal; Saudi Arabia; Singapore; Somali Republic; Sudan; Thailand; Tunisia; Turkey; United States; Venezuela; and Vietnam.**

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Forecast Rationale

The U.S. Army no longer maintains a budget line for procurement of M1117 armored security vehicles.

In May 2014, Textron delivered the final batch of M1117 ASVs for the Afghan National Army under the initial contract. Through Foreign Military Sales funding, the U.S. Army procured over 720 armored security vehicles for the ANA and 400 M1117 ASVs for the Iraqi Army.

Repackaging a Classic

Textron has consolidated its various V-150 Commando and M1117 ASV configurations into three Commando product lines:

The "Commando Advanced" line, which represents the basic vehicle line as a derivative of the M1117 ASV.

The "Commando Select" line, which provides enhanced versions of the Commando Advanced.

The top-tier "Commando Elite" line, which provides further enhancements to the basic vehicle design.

The three Commando lines are available in the following configurations:

- Armored security vehicle
- Armored personnel carrier
- APC ambulance
- Reconnaissance vehicle
- 90mm direct fire vehicle
- Mortar vehicle
- Command and control vehicle
- Engineering vehicle
- Maintenance vehicle
- Export Potential

Textron Marine & Land Systems is aggressively promoting the Commando line on the international market. As with most vehicles of this class, various internal security units often make small, unpublicized purchases and therefore some sales go unreported.

M1117 ASV procurement for the U.S. DoD has ended. For Textron Marine & Land Systems, export sales via FMS funding are now the center of gravity for the Commando program.

Ten-Year Outlook

ESTIMATED CALENDAR YEAR UNIT PRODUCTION												
Designation or Program	Thru 2023	High Confidence				Good Confidence			Speculative			Total
		2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	
Textron Systems												
M1117 ASV												
	3,953	13	11	11	13	15	15	11	11	11	11	122
Total	3,953	13	11	11	13	15	15	11	11	11	11	122