A COMMANDO™ FOR EVERY MISSION

WHEN UNSURPASSED PROTECTION, MOBILITY, AND MISSION-CUSTOMIZED VERSATILITY MATTER



THE COMMANDO FAMILY OF ARMORED VEHICLES DELIVERS

VERSATILITY

Common chassis with multiple variants

APC variant accommodates up to 10 troops

Payload capacity up to 4,260 lb allows for various configurations and future growth, including increased survivability

Accommodates various remote weapon stations (RWS)

Can integrate turrets up to 90mm and mortars up to 120mm

MOBILITY

Superior mobility, handling and ride quality with all-wheel drive independent suspension

On-road 65 mph/off-road up to 45 mph

Traverses 24-inch vertical obstacles, can climb a 60% gradient, 30% sideslope and can ford water crossings up to 60 inches

400-mile range on a single tank of fuel

LETHALITY

Dual 40mm/.50 cal turret

- Optional thermal imager for day/night operations
- Optional laser range-finder improves first-round hit capability
- Optional precision power controls and stabilization to reduce target acquisition time and provide shoot-on-the move capability

90-mm CMI turret

- Two-man turret equipped with Cockerill 90mm MK3 gun
- More than 2,300 units in service worldwide

20-25-30 CPWS

Mortar, up to 120mm

RWS, light to medium, dual or single-configuration, including 40mm AGL, .50 cal MG, M240, M249

RELIABILITY AND SUSTAINABILITY

Rugged and survivable in the toughest conditions; vehicles frequently in service 20 years or more

Exceptional operational readiness rate with 3,600 base vehicles in the U.S. Army inventory

Reliability/maintainability with reduced logistics burden due to high usage of DOD and NATO inventory items

Common spare parts and components (engine, transmission suspension compon ents and turret) with existing military systems

Operator and maintenance training programs

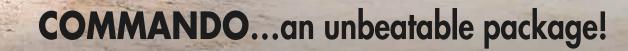
SURVIVABILITY

Scalable levels of protection to meet various threat levels

Mine Resistant Ambush Protected (MRAP) and a range of STANAG 4569 protection levels

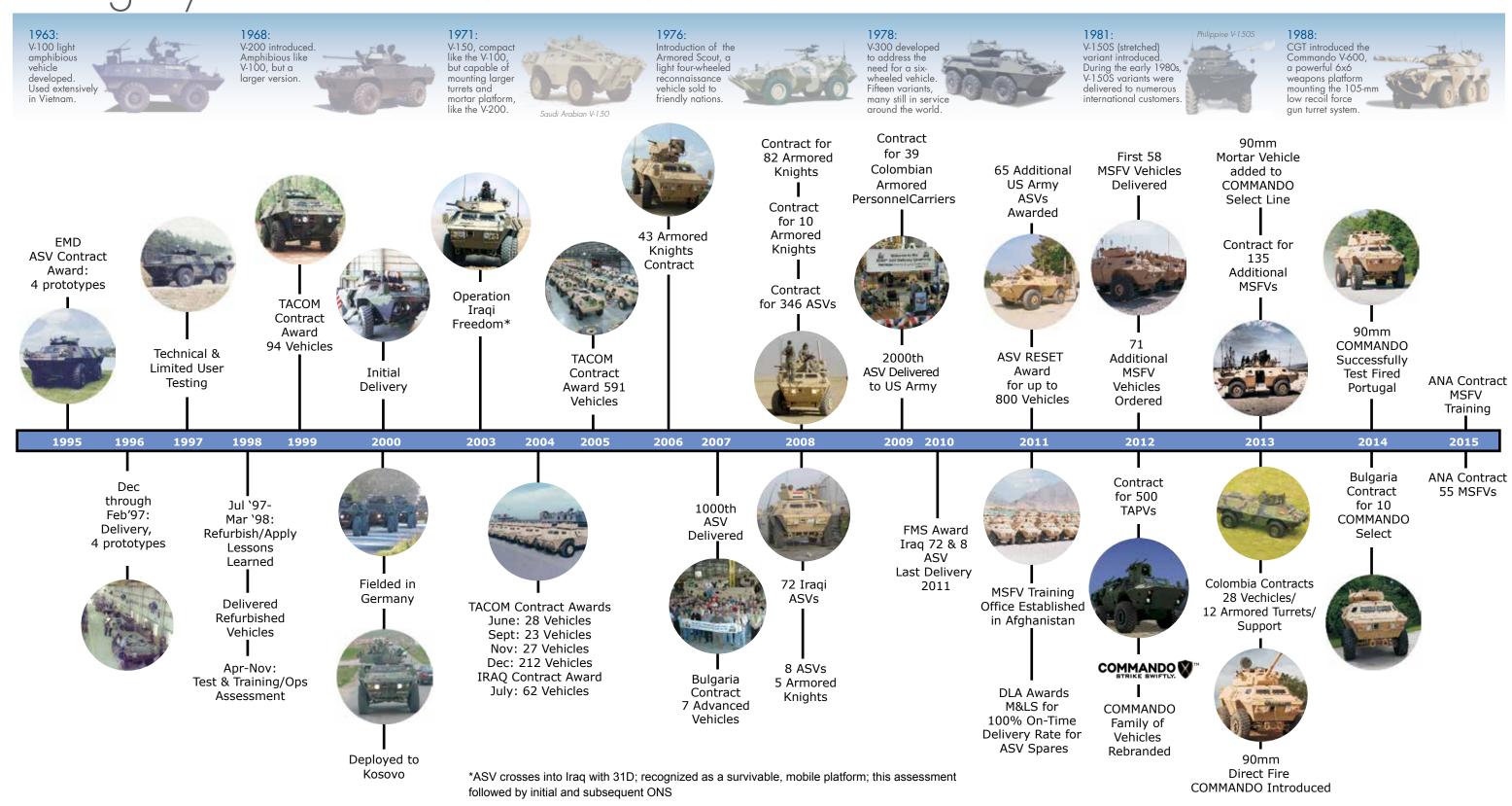
AWARD-WINNING SPARES SUPPLIER

Marine & Land Systems has been recognized several times in recent years by the Federal Defense Industries (FDI) organization with its Outstanding Supplier Award. Our team earned FDI's Outstanding Supplier – Vehicle Components Award in both 2009 and 2013. For the most recent award, we were honored for effectively supplying spare parts that were critical to the armored vehicle end user in Afghanistan.



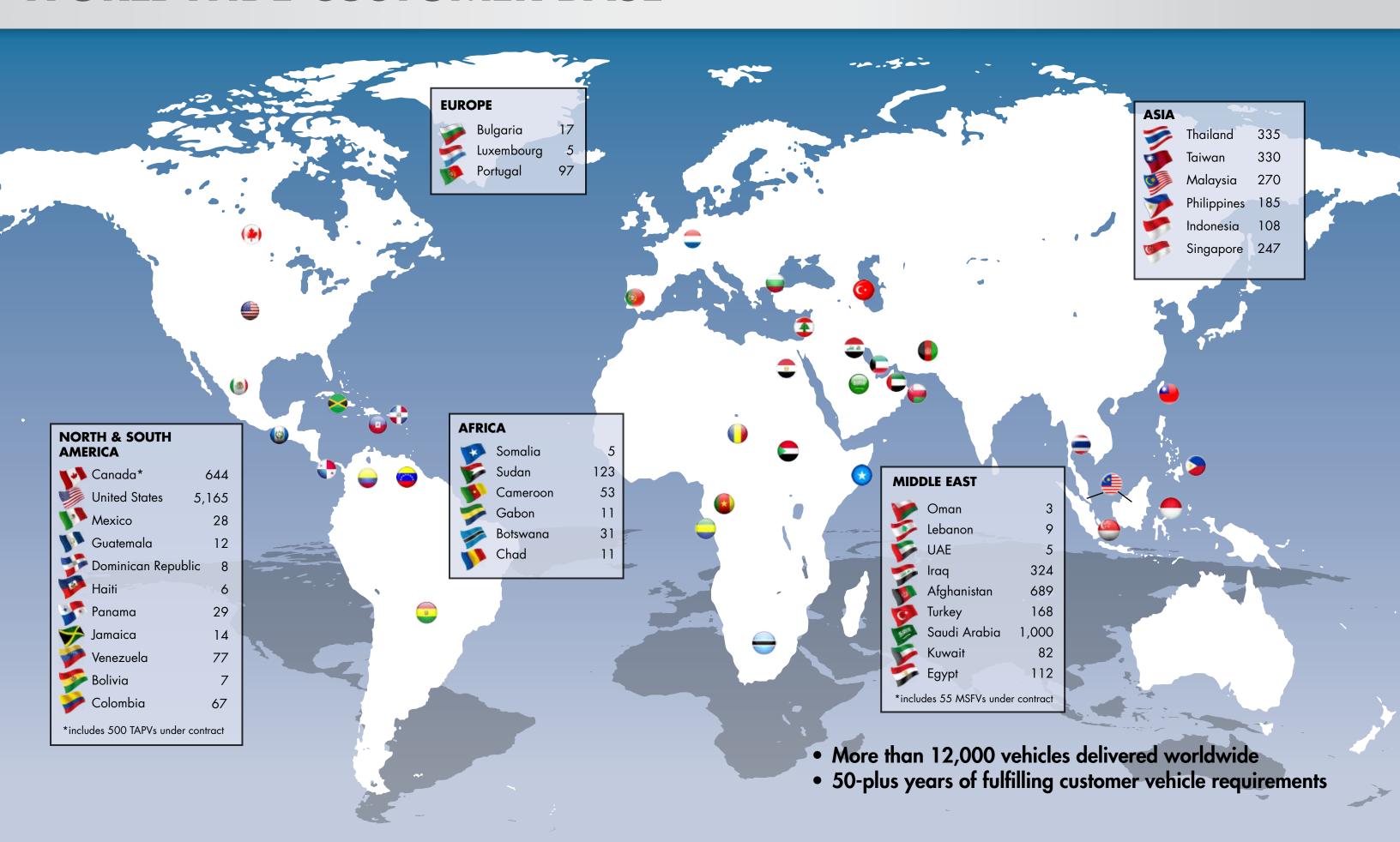
MARINE & LAND SYSTEMS VEHICLE DEVELOPMENT

A Legacy of Combat-Proven COMMANDO Vehicles



Always evolving to meet your needs.

WORLDWIDE CUSTOMER BASE





AWARD-WINNINGOPTIONS



In 2015, the COMMANDO family of vehicles was recognized with the "Best Performing Armored Vehicles" award from Defense IQ at the annual International Armored Vehicles Conference.

"Choosing Textron Systems was really quite simple...the [COMMANDO] vehicle has a genuinely long legacy and in its current form is probably the best example of a platform that has been taken to new levels."

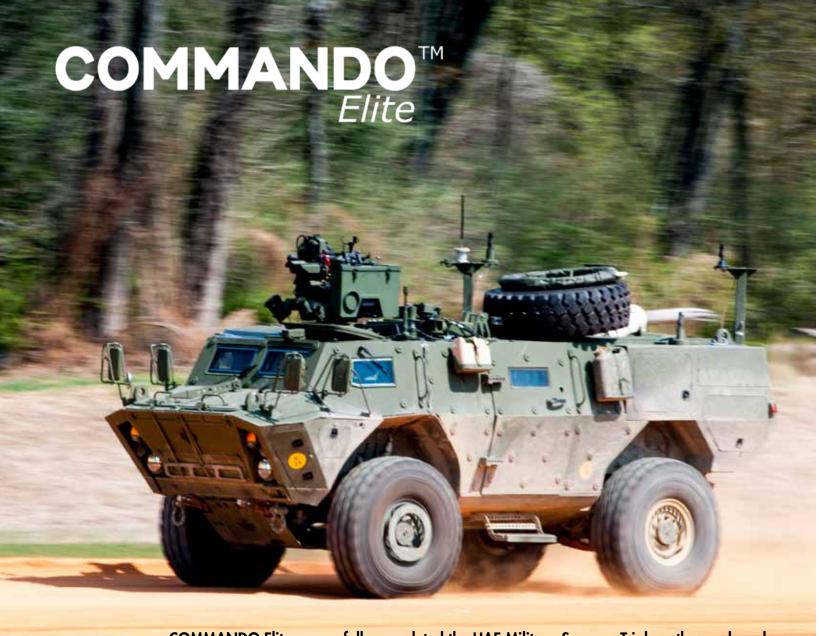
Member of the selection committee at the 2015 International Armored Vehicles Conference

Textron Systems Marine & Land Systems is designing and manufacturing the next generation of COMMANDO armored vehicles for customers around the world.

Elite, Select and Advanced COMMANDO family of vehicles are customized to meet our customers' unique mission requirements.

- VERSATILITY multiple variants and configurations give operators the ability to go almost anywhere and perform nearly any mission
- PROTECTION scalable levels of protection to match needs to the mission
- MOBILITY unmatched on-road/off-road mobility with exceptional handling and ride quality
- FIREPOWER wide range of weapon system options available to meet the mission
- RELIABILITY over 12,000 vehicles in service with the U.S Army, international militaries and police forces worldwide
- MAINTAINABILITY provide end-to-end solutions through customer fielding, training maintenance and logistics support throughout the vehicle's life cycle





COMMANDO Elite successfully completed the UAE Military Summer Trials, a thorough and complete evaluation of vehicle mobility conducted in extremely challanging conditions.







COMMANDO Elite UAE Trials

Valcartier Canada Test Run

UAE Desert Trials

"Qualification testing has shown that the TAPV's protection and firepower performance is extremely high. This rigorous test program being conducted with the soldiers who will ultimately deploy on the vehicle will ensure the TAPV meets the needs of the Army."

Major Stef Grubb, Project Director for TAPV
 Infantry Corps Newsletter, 1 May 2015

COMMANDO Elite vehicles are our most highly protected and capable vehicles, providing superior directfire and mine blast protection. These vehicles come equipped with our latest drive train enhancements making them fast and highly maneuverable in a wide range of environments. Lethality is achieved through multiple sensors and weapons options. Elite vehicles are flexible enough to accommodate nearly any remote weapon station available - single or dual weapon mix. They also feature a digital backbone for systems monitoring and future electronics expansion.





COMMANDO ELITE VEHICLES

The COMMANDO Elite line comprises the best 4x4 armored vehicle on the market, featuring the ultimate package of sustainability, mobility, lethality and survivability.

COMMANDO ELITE VEHICLE SPECIFICATIONS

WEIGHT

•	Gross Vehicle Weight40,700 lb	(18,460 kg)
•	Curb Weight36,300 lb	(16,460 kg)

PERFORMANCE (at 38,000 lb)

•	Speed (level hard surface)	65 mph (105 kph)
•	Range @ 50 mph (80 kph)	400 miles (644 km)
•	Gradient	60%
•	Side Slope	30%
•	Vertical Wall	24 in (.6 m)
•	Fording	60 in (1.5 m)
•	Turning diameter	64 ft (19.5 m)

TIRES...... Michelin 16.00R20 XZL with Hutchinson run flat inserts

SUSPENSIONFully independent front and rear, upper and lower control arms

POWER TRAIN

•	EngineCummins QSL 365, 365 hp, 1	113 lb-f
•	Transmission6-speed, Allison	3200SP

SURVIVABILITY...... Protects against direct and indirect weapons, mines and IEDs

SITUATIONAL AWARENESS Unaided 360 degrees

OTHER MISSION EQUIPMENT OPTIONS

•	Add-on Armor	Customer specification
•	Turret Enhancements	Customer specification
•	Alternator	400- and 575-amp alternator
•	ABS	Customer specification
•	NAV/GPS	Customer specification
•	NBC Individual/Overpressure	Customer specification
•	360-Degree Situational Awareness	Customer specification
	(Night/Day)	

COMMANDO ELITE SEATING

COMMANDOTM Select



General Sher Mohammed Karimi opened his capstone address at the 2013 International Armoured Vehicles (IAV) conference with a slide showing COMMANDO Select Mobile Strike Force Vehicle (MSFV) configurations.







GEN Karimi at IAV

Select with 40mm/.50 cal Turret

Select with 90mm Turret

"High-end armored capabilities are critical to the survival of the state to develop capabilities to fight insurgents. There will always be a requireme nt for mobile, protected firepower on the battlefield. The MSFV has been significantly upgraded from the original design to make it more survivable in the IED environment."

— General Sher Mohammad Karimi, Chief of General Staff Afghan National Army 2013 International Armoured Vehicles Conference

COMMANDO Select personnel carriers offer an enhanced of lethality, combination survivability, mobility and sustainability. Exceptional crew protection is built into all Select vehicles. Greater survivability, doesn't however. sacrificing vehicle mobility these vehicles deliver greater mobility than similar armored vehicles on the market. These vehicle can be configured to accommodate up to 10 (three crew plus passengers) to enable greater troop carrying capacity.

APC WITH TURRET

COMMANDO Select Armored Personnel Carriers with Turret substantially increase security, mobility and survivability using knowledge gained from more than 13 years of dual combat theater use.

APC MEDEVAC

COMMANDO Select Armored Personnel Carrier Ambulance provides ballistic and blast protection to the medical crew during patient treatment and transport.

90MM DIRECT FIRE VEHICLE

The new COMMANDO Select 90mm Direct Fire Vehicle combines the full range of combat-tested COMMANDO Select vehicle capabilities (such as mobility, survivability, sustainability) with a tested 90mm turret for additional firepower and lethality.

MORTAR VEHICLE

COMMANDO Select Mortar Vehicles meet the emergent requirements of today's combat units for a more operationally flexible and adaptable indirect fire capability while taking advantage of the vehicle's mobility and survivability.

COMMANDO SELECT VEHICLE SPECIFICATIONS

• Gross Vehicle Weight.....up to 39,915 lb (18,100 kg)

WEIGHT

•	Curb Weight	34,600 lb (15,400 kg		
D	IMENSIONS			
•	Length	261 in (6,629 mm		
•	Width (overall)	108 in (2,743 mm		
•	Height	119 in (3,022 mm		
•	Ground Clearance	26 in (660 mm		
P	PERFORMANCE (at 35,100 lb)			
•	Speed (level hard surface)	62 mph (100 kpł		

•	Ground Clearance	26 in (660 mm
P	ERFORMANCE (at 35,100 lb)	
•	Speed (level hard surface)	62 mph (100 kpł
•	Acceleration 0-20 mph (0-32 kph).	8 se
•	Acceleration 0-50 mph (0-80 kph)	30 se
•	Range @ 40 mph (64 kph)	400 miles (644 km
•	Turning Diameter	65 ft (21.3 m
•	Gradient	609
•	Side Slope	309
•	Vertical Wall	22 in (.56 m
•	Fording	60 in (1.5 m
TI	RESMichelin 16.	OOR20 XZL with run flat inser
SI	USPENSIONFu	lly independent front and rea

POWER TRAIN

I OWER INAII	
• Engine	Cummins 6CTA8.3, 280 hp peak, 825 lb-ft
• Transmission	6-speed, Allison 3500SP
SIGHTS	M-36 day/night gunner's sight
ARMAMENT	Turret: 40mm MK-19, .50 cal M2HB
SURVIVABILITY	Protects against direct and
	indirect weapons, mines and IEDs

upper and lower control arms

COMMANDO SELECT SEATING

APC

- Turret: 3 crew, 4 dismounts
- OGPK or RWS: 3 crew, 7 dismounts

APC SWB

- Turret: 3 crew, 1 dismount;
- OGPK or RWS: 3 crew, 2 dismounts

MEDEVAC

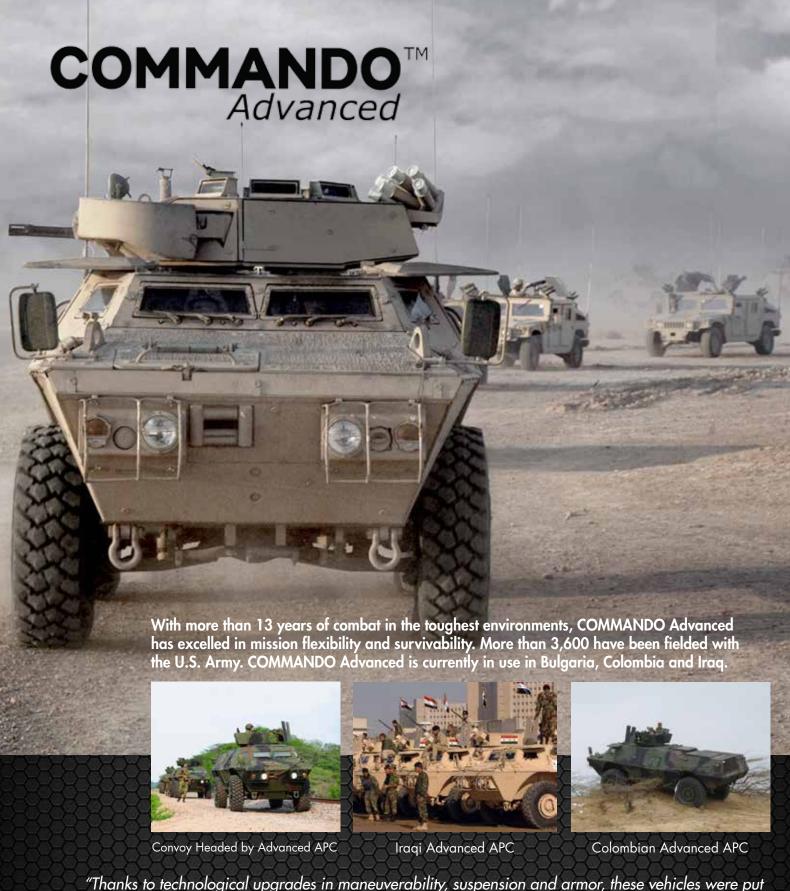
- 3 crew and up to 2 ambulatory, 2 litter patients

Mortar Vehicle

- Driver, Commander, 2 Mortar Crew

• 90mm Direct Fire Vehicle

- Driver, commander, gunner and loader



Convoy Headed by Advanced APC Iraqi Advanced APC Colombian Advanced APC

"Thanks to technological upgrades in maneuverability, suspension and armor, these vehicles were put under very difficult geographic conditions in-country while responding to terrorist groups, which indiscriminately act against strategic assets of the Colombian state. The vehicles demonstrated performance superiority and withstood IED explosions without negative effects to their physical integrity."

— Major Hugo Angel Parra, Director of Armored Vehicles, Colombian Army Cavalry

COMMANDO Advanced vehicles. derived from our Armored Security Vehicles (ASV), are combat proven in locations including Afghanistan, Iraq and Colombia. They offer excellent on-road and off-road mobility enabling them to operate in urban, jungle, desert and mountainous terrain. Crew protection is reinforced with a V-shaped hull bottom and 360-degree protection from direct fire. Customers utilizing the legacy Advanced platform can upgrade to higher levels of crew protection through an Enhanced Survivability package. Advanced vehicles are extremely dependable. Those in use by the U.S. Army have delivered an excellent operational readiness rate consistently above 90 percent.



APC

COMMANDO Advanced Armored Personnel Carriers provide additional troop capacity to a highly mobile survivable medium armored vehicle. Choice of gunner's protection kit (GPK) or turret is available.

RECONNAISSANCE VEHICLE

COMMANDO Advanced Recon Vehicles provide an armored reconnaissance platform that incorporates both ballistic and blast protection. Mission equipment options are available, according to customer specification.

COMMANDO ADVANCED VEHICLE SPECIFICATIONS

WEIGHT

WEIGHT	
 Gross Vehicle Weight 	
	32,600 lb (14,785 kg)
APC/Recon	36,000 lb (16,329 kg)
DIMENSIONS	
• Length	
ASV	237 in (6.07 m)
APC/Recon	261 in (6,629 mm)
	101 in (2.56 m)
•	102 in (2.59 m)
Ground Clearance	18 in (.46 m)
PERFORMANCE	
	65+ mph (105+ kph)
	n)
Turning Diameter	
	56 ft (17.1 m)
	65 ft (19.8 m)
	60%
'	30%
Vertical Wall	00
	22 in (.56 m)
	22 in (.56 m)
• Fording	60 in (1.5 m)
AIR TRANSPORTABILITY	(ASV)
TIRES	Michelin 14.00R20 XZL, Run Flat Inserts
SUSPENSION	Fully independent
POWER TRAIN	, ,
• Engine	
	Cummins 6CTA8.3, 260 hp/828 lb-fi
	6-speed, Allison 3500SP
ARMAMENT	-
	Turret: 40mm MK19, .50 cal M2HB
APC	Various, depending on customer needs

SEATING

ASV With turret: 3 crew, 1 dismount; with OGPK or RWS
3 crew, 2 dismounts
APC With turret: 3 crew, 4 dismounts; with OGPK or RWS
3 crew, 7 dismounts
Recon

Recon.....TUA, Cupola

weapons, mines, and IEDs

SURVIVABILITY......Protection from direct/indirect



SURVIVABLE COMBAT TACTICAL VEHICLE (SCTVTM) FOR HMMWV UPGRADE

Textron Systems offers a lightweight, highly protected system with improved Performance, Safety and Mobility. It is compatible with all version 11-series HMMWVs currently in service and select 10- and 9-series vehicles. The SCTV exceeds MRAP-style protection by incorporating angles and a v-shaped blast deflection under-body plate. Significant parts commonality with existing HMMWV inventory. It modernizes the original HMMWV cab while continuing to utilize existing controls, linkages, and drive system.

- Various levels of blast protection available
- Multiple configurations of vehicle available
- Vehicle performance kits include:
- Mobility package
- Engine and cooling packages
- Braking package
- Air conditioner BTU: 20,000 cool and 22,000 heat
- Available for in-country co-production

- Safety Enhancements:
 - Roll-over crush protection
 - Isolates fuel cell from crew compartment
 - External battery compartment
 - Fire retardant insulation panels
 - Smooth interior reduces hazards to crew
 - Thermal guard soft interior headline
- Roof supports weight and function of most gunner protection kits and weapon systems currently in use

In partnership with Textron Systems Support Solutions, Marine & Land Systems offers an extensive array of vehicle services including fielding, training and logistics support.

Textron Systems is a trusted provider of total life-cycle support for the COMMANDO family of vehicles and other product lines.

Our team delivers highly-qualified field service support -

- We possess extensive experience deploying skilled field service engineers along customers to ensure continuous asset availability
- We deploy personnel to work on-site at customer facilities and at forward locations around the globe

We also provide effective vehicle operator and maintainer training wherever the mission requires –

We collaborate with customers to understand their requirements and develop targeted curricula

- We are skilled at courseware development and sustainment for both operators and maintainers
- We offer structured classroom and hands-on vehicle training
- We partner with customers to provide professional fieldlevel operator and maintenance training

We also excel at performance-based logistics including -

- Strategic supply chain planning
- Effective spares provisioning

Our mission is to apply our know-how every day to deliver the highest vehicle availability rates. Our team customizes its services to meet your individual requirements – because the right support from the best team creates unmatched vehicle availability and value.



COMMANDO VEHICLE PLATFORMS AND EQUIPMENT OPTIONS



STANDARD FQUIPMENT

SIANDAND LOOK MILINI
Engine Cummins QSL365
Transmission6-speed, Allison 3200SF
Speed65 mph
Range
Weight (GVW/Curb) 40,700/36,300 lb
Turning Diameter
Remote Weapon Station Customer-Specified
Scalable Armor
Mast Sensor (fitted with choice of optics)
Electrical 575 Amp Alternator
Two-Speed Transfer Case
Winch15,000-lb
Antilock Brake System (ABS)
Independent Suspension
Central Tire Inflation (CTI) with Run-Flat Inserts
CANBUS
Digital Architecture
Power-Assisted Doors
Base Vehicle Occupants2 + 4
Air Conditioning

OPTIONAL EQUIPMENT

Lethality

- Remote Video Terminal (RVT)
- Anti-Tank Missile

Survivability

- Situational Awareness Suite
- Smoke Grenade Launchers
- NBC (Overpressure System)
- Shot Detection System
- Tactical RPG Airbag Protection System (TRAPS)
- Driver's Vision Enhancer (DVE)

Electrical

- 575 Amp Alternator
- 400 Amp Alternator

COMMANDO™



STANDARD EQUIPMENT

STAINDAKD EQUIPMEN	NI
Engine	Cummins 6CTA 8.3
Transmission6-s	peed, Allison 3500SP
Speed	
Range	400 miles
Weight (GVW/Curb)	
Turning Diameter	65 ft
Scalable Armor	
Smoke Grenade Launchers	
Electrical	260 Amp Alternator
Two-Speed Transfer Case	
Two-Speed Transfer Case Winch	15,000-lb
•	15,000-lb
Winch	15,000-lb

OPTIONAL EQUIPMENT

Lethality

- Remote Weapon Station
- 40/.50 Turret (40mm Grenade Launcher/.50 cal mg)
- Cockerill CPWS with medium caliber weapon (20/25/30mm)
- BattleHawk™
- RVT
- GPK/OGPK (Objective Gunner Protection Kit)
- Anti-Tank Missile

Survivability

- Mast Sensor (Fitted with choice of optics)
- Situational Awareness Suite
- NBC (Overpressure System)
- Shot Detection System
- Driver's Vision Enhancer (DVE)

Electrical

400 Amp Alternator

OPTIONAL VEHICLE CONFIGURATIONS



40 MM/.50 CAL TURRET



90MM DIRECT FIRE









STANDARD EQUIPMENT

Engine	8.8
Transmission 6-speed, Allison 350	OOSP
Speed	mph
Range	miles
Weight (GVW/Curb)32,600/ 29,20	50 lb
Turning Diameter	56 ft
Scalable Armor	
Electrical260 Amp Alter	nator

OPTIONAL EQUIPMENT

Lethality

- Power & Stabilized Turret
- Smoke Grenade Launcher
- Remote Weapon Station (under power, stabilized turret & grenade launcher)
- BattleHawk™
- Cockerill CPWS with medium caliber weapon (20/25/30mm)
- RVT
- GPK with small caliber weapon (5.56, 7.62, .50 cal, MK19)
- Small Caliber Weapon (5.56, 7.62, .50 cal, MK19 40mm)
- Anti-Tank Missiles
- 40/.50 Turret (40mm grenade launcher/.50 cal MG)

Survivability

- Enhanced Survivability Kit
- Mast Sensor (Fitted with choice of optics)
- Situational Awareness Suite
- NBC (Overpressure System)
- Shot Detection System
- Driver's Vision Enhancer (DVE)

Electrical

400 Amp Alternator

ADDITIONAL VEHICLE OPTIONS

REAL-TIME SITUATIONAL AWARENESS ACROSS THE BATTLESPACE





LETHALITY OPTIONS FOR CURRENT VEHICLES

OUR TURRET EXPERIENCE – A LEGACY OF LETHALITY

Textron Systems has a long legacy of experience with turreted weapon system design, development, integration and fielding on both wheeled and tracked armored vehicles.

Our weapon system products integrate weapon calibers from small machine guns to 105mm main tank weapons. The weapon/turret drive and fire control capabilities in these systems range from manual hand controls for the smaller caliber systems to stabilized, full solution fire control capability for the 105mm class systems.

Our team designed and tested the Upgunned Weapon System (UGWS) for U.S. Marine Corps requirements and produced more than 340 units for this customer. The UGWS (40mm/.50 caliber turret) has proven to be a reliable and durable one-man turret system.

We integrated a modified version of the UGWS into our COMMANDO Advanced vehicles, and more than 3,500 units were produced for the U.S. and Afghanistan National Army. We've also expanded our lethality offerings by partnering with CMI Defence on products such as the Cockerill CSE 9LP on our COMMANDO 90mm direct fire vehicle.

Our broad experience in lethality system development, integration, validation and test can be applied to fielding optimum lethality solutions for the COMMANDO family of vehicles or any wheeled or tracked vehicle platform.

Cockerill CSE 90LP



- Two-man turret
- Electro-mechanical power control system
- Gunner's and commander's sight options
- Day/night (l² or thermal)
- Laser ranger finder
- Ballistic computer Ballistic protection: standard 7.62 mm NATO
- Direct view optics

Primary armament

- 90mm LP Gun
- Rifled
- Caliber: 90 mm
- Wide range of ammunition types
- Nominal pressure: 210 MPa
- 7.62mm coxial and pintle-mounted machine gun
- Multi-purpose grenade launchers

Cockerill CPWS 20-25-30

- 20mm, 25mm (shown) or lightweight 30mm chain gun (user specified)
- Weight: less than one ton (basic)
- Remote control of the weapon systems and sensors
- Under-armor access to weapons and magazine
- Total ammunition capacity: 150 medium-calibre rounds
- 360° turret rotation
- Dual mode sighting system for panoramic observation and precise firing
- Two-axis stabilized
- 24 hour day/night (thermal) operating capability
- Laser range finder
- Ballistic computer
- Electro-Mechanical Gun and Turret Drive System
- Maximum depression: -10°
- Maximum elevation: +60°

Secondary armament



- Secondary Armament
- 7.62mm coaxial machine gun
- Grenade launcher • Training Services:
- 'desktop' simulator
- 'embedded' simulator' (enables the integration of turret hardware into a simulator network)



- Weight Combat Ready. 2,350 lb (1,066 kg), less gunner
- Armament
- Primary Weapon. - Secondary Weapon ..50 caliber M2HB (included)
- . 360 degrees, 7 vision blocks with spall shields Vision.
- 1 meter (39.36 in.), pitch diameter · Ring Gear.
- Seating...

40 mm / .50 Caliber Turret



- 40mm MK 19, Mod 3 (included)
- Smoke Grenade Launcher Optional
- M36 day/night sight (modified) Gunner Sight.
- 1 man
- Turret Power Electric, 24 VDC
- Traverse (Continuous). 360 degrees
- Traverse Rate (High Speed) 45 degrees per second (minimum) Elevation. 45 degrees Depression. .-8 degrees Elevation Type Fire Interrupter Method of Firing Electric with manual backup Spotlight . 500,000 cp, coaxial (1,000,000 cp, optional) 12-channel communication Slip Ring. Ammunition Storage 96 ready rounds of 40mm - Primary 200 ready rounds of .50 caliber Secondary - Smoke Grenades. 8 ready rounds, 8 rounds stored Options - Two-Axis Stabilization - Power Traverse and Elevation - Laser Rangefinder

- Thermal Imager

• Traverse Type

M153 Protector- Kongsberg

- Awarded prestigious contract Commonly Remotely Operated Weapon Station (CROWS II) by the US Army.
- Weight of weapon Station excluding weapon and ammunition: 379 lbs (172 kg)
- Height of weapon Station excluding weapon and ammunition: 30 inches (762 mm)
- Temperature- operating: -51°F to +149°F (-46°C to +65°C)
- Temperature- storage: -51°F to +160°F (-51°C to +71°C)
- Thermal Imager with dual field of view- autofocus and e-zoom
- Laser Range Finder
- Lock-on-target
- Optional Lockheed Martin/Raytheon Javelin Launcher (see below)



Manual fine lay with electric assist

.Manual

Electric

Javelin Launcher - Lockheed Martin and Raytheon

- Range: 2.5km
- Guidance: Passive target acquisition/fire control with integrated day/thermal sight
- Magnification: 4x day and 4x or 9x thermal
- Warhead: Tandem shaped charge
- Weight:
- 26 lb (11.8 kg) missile
- 14.1 lb (6.4 kg) CLU
- 35 lb (15.9 kg) round (missile, launch tube assy)
- Length:
 - 42.6 in (108.1 cm) missile
- 47.2 in (119.8 cm) launch tube
- Diameter:
 - 5.0 in (12.7 cm) missile
- 5.6 in (14.2 cm) launch tube



- 93% missile reliability
- 94% probability of first-time gunner hit
- Wide range of effectiveness (<75m to >2,500m) increases employment options



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