

THALES



BUSHMASTER

Outstanding crew protection and mobility

>> BUSHMASTER DESIGNED FOR EXPEDITIONARY OPERATIONS

> Origin

Thales Australia's Bushmaster* is specially designed to rapidly deploy battle-ready troops in all field conditions.

Australian forces demanded a highly mobile infantry vehicle providing significant troop protection, all-terrain agility and expeditionary capacity. High level crew comfort and mobility ensure rapid deployment and delivery of battle-ready troops to critical areas. Bushmaster is the latest generation of High Mobility Infantry Protected vehicles.

> Adaptability

Bushmaster's monocoque structure provides a solid platform for an integrated personnel protection system which simply adapts to a

Bushmaster was specifically designed by Thales Australia to meet the Australian Army's demands for a highly manoeuvrable, safe infantry mobility vehicle.

Delivering exceptional troop protection and comfort, Bushmaster has the power and equipment to move troops speedily and safely over a wide range of terrains and environments.

Its integrated mine-blast-protected monocoque hull can be configured to provide a range of military vehicle options. The Thales Australia design ensures that Bushmaster can be easily maintained and serviced virtually anywhere in the world.



range of battlefield and peacekeeping applications. Roof mountings to fix a remote weapons station, light cannon and smoke grenades transform Bushmaster into a highly effective Armed Personnel Carrier.

The vehicle can also be configured as an armoured ambulance. Bushmaster's flexibility allows it to be adapted for combat support and tactical logistics roles.

> Deployment

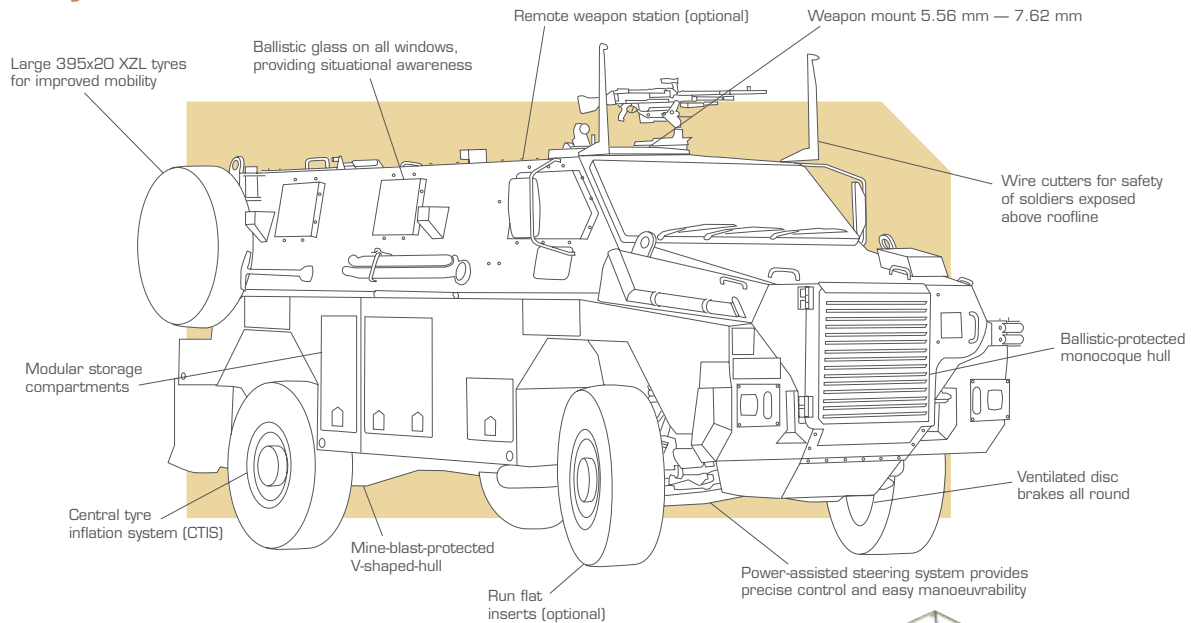
Bushmaster is air transportable by C-130 aircraft or CH 53E helicopter. It has integrated lift points for simple slinging aboard ship for sea transport and a range of recovery points.

> Superior personnel protection

Protecting troops in battle zones and getting them into position are key goals for all military commanders.

*Jointly designed with Timoney Technology Ltd.

Key vehicle features



Bushmaster's integrated high hardness and transparent armour, specialist welding and the shaping of its monocoque hull, protect troops and mechanical components from land mines and other blast weapons as well as small arms and artillery fragments.

The integrated v-shaped armoured hull protects occupants by deflecting mine blasts anywhere under the vehicle. Protection is also provided from side blasts from improvised and roadside explosive devices (IED) and fragment shaped projectiles (FSP). In standard configuration, Bushmaster's ballistic protection, including occupants and power pack, exceeds STANAG 4569 Level 1 threats, Claymore and anti-personnel mines. Upgrade packages protecting up to STANAG 4569 level 3 are available. Windows also carry similar ballistic protection.

Bushmaster's fuel and hydraulic tanks are positioned outside the crew's compartment to ensure that the crew is protected from possible fires resulting from blasts or ballistic attack. There is also a protected emergency fuel tank to ensure Bushmaster can keep moving in dangerous situations.

- Monocoque hull
- High capacity airconditioning maximises crew comfort
- Ergonomically designed seating and full harness seat belts provide occupants with maximum protection
- Mine-blast-protected v-shaped hull (below).



The advanced wrap-around seating and personnel harness designs provide excellent protection from spinal and other injuries that could result from blast or collision shocks, as well as offering exceptional comfort to crews over long journeys across rugged terrains.

Crew comfort

Bushmaster carries up to ten troops—including the driver—in spacious, airconditioned comfort to minimise trip fatigue. Travel comfort and safety are essential for delivering battle-ready troops in the field.

The crew's compartment can be configured to carry up to eight troops seated face to face while the driver and one passenger sit in conventional truck cabin positions. The seating is ergonomically designed for protection, comfort and fatigue reduction.

Seating provides support and protection for personnel under extreme braking conditions and from collision or blast shocks, as well as in rough terrain. The crew compartment is spacious, easily accommodating 95th percentile males in comfort.

The cabin is also fully airconditioned ensuring that the crew's comfort is maintained in the vast range of conditions that Bushmaster can operate in.

Bushmaster's seating, space, climate control and generous windows ensure occupants are safe, fresh and situationally aware in all field conditions.



> Superior vehicle performance

Bushmaster moves quickly over long distances at convoy speeds and can manoeuvre tactically at speed across a wide range of challenging terrains—from deserts to jungle to snow. Its capabilities have been proven in deployments during challenging operations in East Timor and Iraq.

Its large fuel tanks and supplies and weapons storage can maintain Bushmaster over 800 km (500 miles) at sustained on-road speeds up to 110 km/h (65 mph). Bushmaster's flexible storage configurations can support independent expeditionary manoeuvres for up to three days.



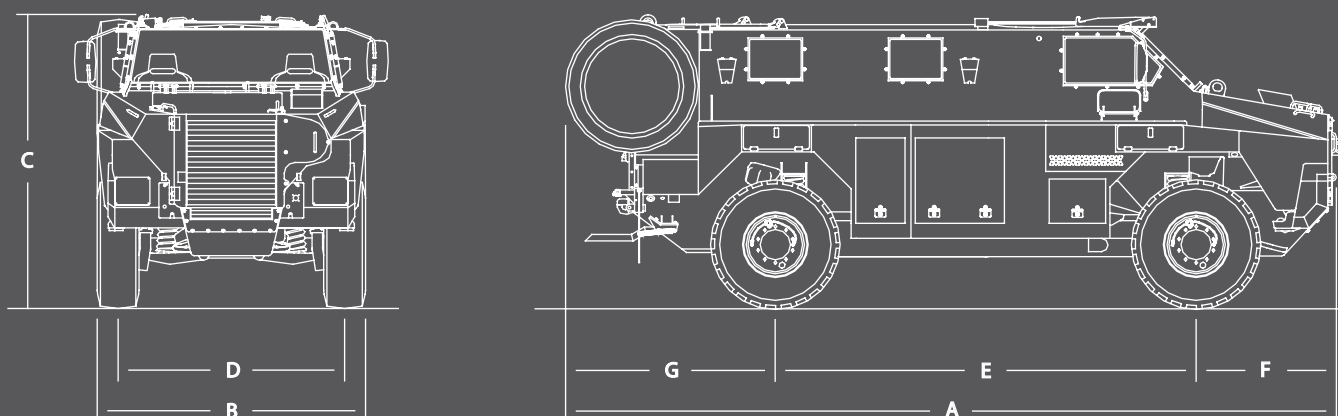
The vehicle has exceptional on and offroad performance capabilities. A high power to weight ratio coupled with fully independent coil spring suspension, full-time four wheel drive and high ground clearance with critical angles make Bushmaster a nimble off-road vehicle. This mobility is further enhanced by selectable differential locks—front, centre and rear. A dash-mounted pushbutton-controlled central tyre inflation system allows tyre pressures to be set to match varying terrain. Optional 'run-flat' inserts ensure mobility is maintained in the event of tyre damage.

Bushmaster is powered by a six-cylinder, turbocharged Caterpillar diesel engine that develops up to 246 kW (330 hp) at a low 2200 rpm, generating extraordinary low-end torque in the most challenging terrains.

The power-assisted steering and pushbutton ZF or Allison automatic transmission combine with a superior suspension package to provide the driver with exceptional control in a vast range of conditions and terrains.



>> BUSHMASTER VEHICLE SPECIFICATIONS



A Overall length	7,180 mm
B Width	2,480 mm
C Overall height	2,650 mm
D Track	2,100 mm
E Wheelbase	3,900 mm
F Front overhang	1,340 mm
G Rear overhang	1,950 mm
Crew	Up to ten including driver
Configuration	4 x 4 full-time
Weight (GVW)	15,000 kg
Kerb weight	12,400 kg
Total internal volume (useable)	11.2 m ³

Total external volume storage (useable)	2.5 m ³
Turning circle kerb to kerb	17.7 m
Ground clearance	Under hull 430 mm
Speed	governed to 100 km/h cruise 100 km/h
Maximum road range	800 km
Fording	no preparation 1,200 mm
Gradient	up to 60%
Approach angle	40°
Departure angle	38°
Side slope	static 36°
Vertical obstacle	457 mm

Engine

Caterpillar 3126E 7.2 L six-cylinder turbocharged and air-to-air after-cooled diesel developing up to 246 kW @ 2200 rpm and torque of 1166 Nm @ 1440 rpm, with self-diagnosis capability

Transmission

ZF 6HP502 ECOMAT G2 providing six forward speeds, one reverse and convertor lock up. Allison MD 3066 (optional)

Transfer case

Fabco TC170 1.1 single speed 50/50 transfer case with diff. and air-operated diff. lock. Ratio 1:1:1 reduction

Diff locks

Air operated front, centre and rear

Towing

Recovery of other vehicle up to 15,000 kg
Recovery points—front and rear
Electric/pneumatic connections—front and rear

**Suspension and axles**

Arvin Meritor 4000 series fully independent, progressive coil spring with upper control arm and lower wishbone 5.186:1 total reduction

Steering Power assisted**Brakes**

Dual circuit air operated, outboard discs on all four wheels

Tyres

Low MMP Michelin 395/85 R20 with bead locks

Central Tyre Inflation System (CTIS)

Dual channel, four settings

Fuel capacity 300 L + 19 L (internally protected)**Electrical system**

24 V DC, alternator 140 amp 24 V (fully redundant), battery two bank dual configuration (4 x 12 V) CCA 600 amps

Environmental

14 kW cooling split front and rear systems.
6 kW heating

Protection

Ballistic

- exceeds STANAG 4569 level 1 (standard)
- up to STANAG 4569 level 3 (option)

FSP - IED up to STANAG 4569 level 5 (option)

Mine - high level of protection from v-shaped monocoque hull (standard)

RPG - (option)

Spall liner - (option)

Options

- Run flat inserts
- NBC / CBR
- 211 L water tank
- Swing mount
- 10-ton hydraulic winch
- Remote weapon station
- Higher capacity alternators.

Weapon mounts

- Up to three weapon mounts, including one remote weapon station
- Main gun ring or RWS capable of mounting 12.7 mm machine gun or 40 mm AGL.

> Global total life serviceability

Bushmaster's modular design facilitates rapid in-field repair or reconfiguration of all major components. The engine, transmission and power pack can be removed and refitted in less than three hours. The design also provides for a long operational life with the ability to apply upgrades and technology insertions. Support from a highly reliable and globally available maintenance and repair network ensures Bushmaster delivers low lifecycle costs.

Bushmaster's long life monocoque armoured hull is combined with



globally available and sustainable commercial off-the-shelf driveline components from the Caterpillar power plant, ZF or Allison automatic transmission, Meritor axles and Fabco transfer case. All components ensure global total life serviceability.

Underpinning the Thales Australia's commitment to total life serviceability is its service and support agreement with the Oshkosh Truck Corporation. This agreement has established a comprehensive and proven approach to logistics support of Thales Australia specialist vehicles worldwide.

The service agreement facilitates parts supply and technical support through an extensive global network of manufacturer and dealer technical representatives. This includes manufacturer field service representatives; warehousing, inventory management, packaging and distribution support of spare parts; operator and maintainer training; and the development, distribution and support of technical manuals.

Reliability and global sustainability

The Thales Australia design and global support network ensure Bushmaster achieves a long and highly effective life cycle with minimal maintenance down time, no matter where it operates.

Bushmaster delivers exceptional power, mobility and survivability over a vast range of off-road conditions. It is also easily deployable in all strategic locations.

Field tested for reliability

Bushmaster underwent five phases of reliability development testing covering more than 250,000 km (150,000 miles). The rugged and varied Australian terrain together with Australian troop commitments in Asian, African and Middle Eastern theatres provided an immense range of experiences to develop Bushmaster's unique flexibility.

Bushmaster now has an enviable record of service in today's demanding and varied battlefield conditions.