

# TOUGH VEHICLES FOR TOUGH TASKS



ABOVE AND BEYOND



## INTRODUCING LAND ROVER'S AVM RANGE

Land Rover's Defender is one of the most instantly recognisable vehicles in the world. Its rugged reliability, exceptional off-road performance and considerable payload have made it extremely popular with both civilian and military users, and that popularity has seen it reach some of the most inaccessible regions of the planet. It is highly adaptable, too, and has been used in numerous applications.

That versatility is at the heart of a range of versions that is offered by Land Rover's ETO (Engineered to Order) Division. Formerly Special Vehicle Operations, ETO has worked closely with designated AVM (Approved Vehicle Modifier) partners to create a family of special-duty variants that are based on the Defender 110 and 130 vehicles. While retaining the legendary characteristics of the standard Land Rover, the AVM range is tailored to a number of critical civilian, industrial, emergency response and security roles in

which the vehicle's strength, reliability and performance are key factors.

The AVM range differs from other post-manufacture conversions by virtue of having been engineered to the same high levels as Land Rover's standard vehicles, giving customers the confidence they need to perform critical tasks in arduous conditions. Whereas modifications by non-Approved converters would not be covered by Land Rover warranties and could in some cases actually invalidate Land Rover warranties, the AVM range also carries the full weight of the company's service support network behind it, and enjoys the benefits of the same warranties as unmodified Land Rovers. To qualify as an AVM, converters must abide by rigorous design, purchase, quality and manufacturing standards. All designs and finished products are tested to ensure that the conversion elements do not compromise the vehicle's capabilities.



## FIELD AMBULANCE

One of the key roles over the years for the Land Rover Defender has been that of field ambulance. For military and civilian agencies working in difficult terrain and where off-road access is required, the Defender has proven to be the ideal vehicle for this crucial task.

While field ambulances come in all shapes and sizes with vehicles being specifically tailored to meet the needs of any particular emergency service organisation, be it paramedic at one end of the spectrum or first aid at the other, Land Rover can cater for almost any request.

Land Rover has designed two basic ambulance versions of the Defender in the AVM range, a single-stretcher variant based on the Defender 110 Station Wagon, and a twin-stretcher model that uses the Defender 130 Chassis Cab as the basis, with an ambulance box mounted behind the cab. Both versions offer the mobility needed to reach hard-to-access areas so that medical intervention and casualty evacuation can be undertaken rapidly.

Working with AVMs, Land Rover has devised a basic medical kit for the ambulances that includes emergency oxygen, hooks for intravenous drips, pole stretcher(s), aspirator, wall-mounted blood pressure meter and basic medical supply kit. The larger vehicle also has an electrical sterilisation box as standard.

Accommodation in the smaller variant provides for a single stretcher, with seating for medic and attendant. The larger vehicle accommodates two stretchers and a medic, plus two attendant seats. A multipurpose patient bench is also provided. Additional medical equipment can be added as required by the user, and the vehicles can be fitted with sirens, loud-speakers, warning lights and radio communications. As with other AVM vehicles, a range of vehicle enhancement options caters for additional safety and arduous operation requirements.

Should a medical organisation require an ambulance for use within very hazardous environments, the station wagon ambulances can also be fitted with roll cages and other occupant protection, merging the requirements of the Mine Site vehicles with the need of medical professionals working in that environment.

## MINING OPERATIONS

One sector in which the Land Rover Defender's ruggedness and versatility has long been appreciated is the mining industry. Most of the world's mining activities are in remote areas. The mines themselves provide a challenging environment for any vehicle, and place particular emphasis on exceptional off-road capability. The Defender is a natural for such work, and Land Rover has two vehicles in the AVM range that are tailored for mine site duties.

The Defender 110-based vehicle is a Station Wagon that can be converted by option to nine-seat configuration (where market legislation permits). The Defender 130-based vehicle is in double cab pick up configuration, with the ability to mount a crane of up to 500kg capacity in the rear pick up bed.

Safety is paramount in the mining industry, with stringent standards in place. Land Rover's mining support vehicles address those concerns providing customers with the confidence to safely undertake operations in the challenging conditions that mine sites present.

Both versions of Mine Site Defenders feature roll-over bar protection as standard, front nudge bars for greater impact resistance, and also underbody skid plates that help to protect key areas of the underside, such as the sump and steering mechanism. They are fitted with fire extinguishers, battery isolators (optional), first aid kits and vehicle recovery kits.



For safety around the mine environment they are fitted with amber roof lights, reversing buzzers, top and bottom reversing lights, and a flag pole mount. The latter provides improved visibility when operating in the vicinity of larger mine vehicles. An option is a roof-mounted LED light bar that can be programmed to display signals to drivers of other vehicles.

## INDUSTRIAL, MAINTENANCE AND CONSTRUCTION



Land Rover's AVM range also has applications to a range of other industries, such as oil production, construction and the power industry. The Defender 110 (station wagon) and Defender 130 (double cab pick up) Industrial versions are aimed at such sectors, and are similar to the vehicles developed for mine site operations.

To support construction, maintenance and support tasks across a wide range of difficult terrains and conditions, the AVM range includes a number of specialist vehicles. A Mobile Maintenance variant, based on a single-cab Defender 130, has a large box on the back, which can be configured with various equipment and storage to support a myriad of fleet and equipment maintenance roles. For construction and other work there are Drop Side, Single Cab Tipper and Double Cab Tipper versions of both the Defender 110 and 130.

In all cases the Defender's permanent four-wheel drive, lockable centre differential and high-torque engine provide the basis for rugged and reliable mobility. As with the vehicles tailored for the mining industry, safety concerns and regulations can be met through roll-over protection, enhanced lighting and other options.

## CASH IN TRANSIT



Moving large amounts of money and other valuable commodities requires increasing protection in today's world. Moving cash or valuables across challenging terrain is another question. To answer this growing requirement Land Rover offers a protected cash in transit (CIT) vehicle as part of the AVM range. The Defender's payload capability allows a high level of protection to be provided without

adversely affecting the vehicle's excellent performance. Like ambulances, as CIT vehicles face many different hazards and attacks, vehicles can be designed to resist the type and level of assault that customers find within their individual operational environment.

Using the Defender 130 as a basis, the CIT vehicle has an armoured driver cab that gives protection to FB4+ levels. A transparent armour system is employed to optimise outward visibility. The cash vault is located in a compartment that uses multi-layered anti-intruder materials in its construction, and is equipped with a secure drop-chute and protected electrical system. The vault can be reconfigured to carry ATM cassettes, coins or precious metals.

A number of options are available to increase protection levels. They include an armoured security guard compartment protected to FB4+ levels, a transparent armour upgrade to BR6 level to help give better protection against ballistic threats, and the provision of gun ports and racks in the driver and security guard compartments. Additional seating for two more guards can be provided in the rear compartment, and the front and rear areas can be linked by an intercom system.

Other options include a rear-view camera system, anti-blast three-point security lock system, and an escape hatch for the rear cabin occupants. GPS tracking systems are also an option.

## ARMOURED DEFENDER



To help provide protection for key personnel against a range of threats, Land Rover has engineered an armoured version of the Defender. Protected to B6 (equivalent to VR7) levels, the Armoured Defender protects against ballistic threats, while its Kevlar floor protects against grenade attacks.

In designing the Defender's discreet armour protection, the Land Rover team has been careful to retain the agility and performance of the baseline vehicle. Up-rated suspension and upgraded brakes are fitted to offset the additional weight.



## SUPPORTING THE CUSTOMER

With over 65 years of building vehicles and more than two million delivered, Land Rover has considerable experience in the field of heavy-duty off-road vehicles. The company's deep understanding of the sector has not only allowed it to remain at the forefront of vehicle design, but also to tailor those vehicles to meet the demanding needs of its many customers around the world.

Understanding what is involved in a wide range of duties has allowed Land Rover's AVMs to produce modification packages that fully meet operational requirements, yet retain the Defender's traditional qualities. Working with AVMs allows the company to continue to provide highly adaptable vehicles for emergency services, commercial/industrial/mining operations, and for security tasks.

For the customer, acquiring a Defender from the AVM range brings peace of mind. Because the modification packages have been developed by converters who are approved to design and develop products by Land Rover, they are therefore fully sympathetic to the basic vehicle design. Servicing and spares support is also assured through the global Land Rover network, as AVM vehicles come with a full warranty. These key attributes lead to enhanced mission efficiency and availability throughout the life of the vehicle.

### Customer options

Land Rover recognises that customers have many and varied requirements. While baseline modification packages have been engineered for varying operational requirements, a large menu of additional options is available so that vehicles can be tailored to suit each customer's exact requirements.

As well as mission-specific options for the individual role packages, there is a range of common options that can be



fitted to any AVM Defender. The 110 series, for example, can be fitted with enhanced suspension to raise gross weight to 3500kg. A winch with a 4500kg capacity can be installed in either 110 or 130, as can a rear towing hook for towing. Fuel consumption will vary from one product to another, determined by the type of conversion undertaken.

A raised air intake can be fitted for extreme dust and wading operations, while an engine kill-switch and fire suppression system can be installed for additional safety during potentially hazardous operations. A variety of internal lighting options is available, as well as various communications systems and GPS tracking devices. Locking boxes for storage, jerry can stowage and roof racks can further enhance the Defender's versatility and effectiveness.

Combining these options with the AVM range baseline mission packages allows the customer to create the Defender that best suits their needs. Just as important is that only a Defender is fully backed by Land Rover's specialist engineering department.

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