

# The ASLAV in Iraq

Tim Hales

The Australian Army uses the ASLAV as a cavalry vehicle. The traditional armoured vehicle design principles of firepower, protection and manoeuvrability are adapted in favour of making the ASLAV a light and fast vehicle, with an advanced sensor suite and weapon system that can ‘punch above its weight’ at stand-off ranges.

In the traditional warfighting role the cavalry force operates forward of friendly forces on the battlefield, obtaining information, locating and testing enemy dispositions, strengths and reactions and ultimately their intent. An ASLAV-equipped cavalry force is also designed to be powerful enough to exploit any tactical advantage it uncovers.

Key to the cavalry role is adaptability. From medium reconnaissance-in-force operations to various security tasks, the vehicle and its crews are expected to operate with little support for extended periods and be capable of rapidly re-tasking to adapt to changing battlefield situations or conditions. To achieve this, ASLAV crews are well versed in the art of manoeuvre—placing yourself in a position of advantage in relation to the enemy. A cavalry force is also trained to conduct security tasks such as convoy or VIP escort, route reconnaissance, vehicle check points and establishing mounted and dismounted observation posts.

With regards to its use in Iraq, the cavalry vehicle traits of the ASLAV allow it to readily adapt to force protection roles. It is capable of highway speeds, can operate within traffic and also affords significant protection to crews and passengers. The Security Detachment ASLAVs in Iraq undertake typical bread-and-butter cavalry tasks: convoy escort, VIP protection, vehicle patrols, APC tasks, static defence requirements, quick reaction force and battlefield clearance. The vehicles are used extensively, by day and night, and a typical day for a vehicle and its crew may include up to eight different tasks, with a single vehicle typically driving 5000–8000km in a month.

Insurgent activities in Iraq include the use of improvised explosive devices (IED), vehicle-borne IEDs (VBIED); RPG, rocket and mortar attacks; drive-by shootings and ambushing. Disguised and hidden IEDs are a significant threat and they can range from simple, low-cost devices such as an artillery shell with a hole drilled in the fuse for a detonator, through to more complex and purpose-built

shaped-charge devices. The VBIED attack on an ASLAV patrol on 25 October 2004, for example, was a particularly powerful blast 1.5–2 metres from a passing ASLAV-25.

## Vehicle protection

In terms of protection the Army has not taken a purely ‘weld on more steel’ approach. It has instead applied the layered approach required for protecting armoured vehicles overall, adopting (in priority) the don’t be seen, don’t be targeted, don’t be hit, don’t be penetrated, don’t be a casualty approach.

**Most important ASLAV protection measure—tactical manoeuvre.** ASLAV protection is not simply a function of how thick the armour is. The most important protective feature of the ASLAV is its considerable ability for tactical manoeuvre (as distinct from ‘movement’) both individually and in multi-vehicle patrols. This involves the capabilities of both the crews and their vehicles. Highly-trained crews can employ tactics and drills to minimise exposure to threats and suppress those threats that occur. The ASLAV’s high road speed, dash speed and 8-wheel drive performance across difficult terrain mean the vehicle can be manoeuvred and fought by its crew in reaction to a situation—assuming of course the vehicle and its crew survive the initial contact with the enemy. These proactive and reactive tactical manoeuvres are based upon several individual vehicle and vehicle group drills. The effect is that an individual vehicle is always supporting a fellow vehicle or dismounted soldier, and being supported by a fellow vehicle or soldier. This support reaches out through long effective weapon ranges from a stabilised turret with day, thermal imaging and image intensification sights (in the ASLAV-25).

**Second most important protection measure—a purpose-designed vehicle.** Second to tactical manoeuvre is the structural design of the vehicle. All ASLAV variants have been designed as a protected system with complementary design features. These include the welding techniques used to construct the monocoque hull and the high-hardness steel armour itself, through to the run-flat tyres and the ability of the vehicle to operate without all eight wheels functioning, either with drive to a wheel set removed, a damaged wheel chained up, or some wheels removed entirely. Integral protective measures inside the vehicle include the automatic fire extinguisher system. This

is a network of rapid discharge fire bottles and optical sensors that can detect a fire within 10 milliseconds, and a control unit that can not only put out a vehicle fire within 250 milliseconds but suppress an explosion before it affects the crew.

Additional protection measures introduced during 2004 for the ASLAVs deployed to Iraq include:

- **Spall Liners.** ASLAV vehicles were initially deployed with spall curtains and more recently Armatec contact spall liners. The Armatec spall liner proved to be the best commercial-of-the-shelf solution, incorporating latest generation material and providing a significant reduction of behind armour effects from penetrative warheads and IEDs. An additional benefit of a contact spall liner is that it reinforces the ballistic protection already provided by the vehicle's hull armour. Even with the spall liners fitted, the vehicle still has the capacity to absorb the extra weight of additional passive armour and not have its mobility affected.
- **Bar Armour System.** The new Bar Armour System (BAS) concept (similar to that already fitted to US Army Stryker 8x8s in Iraq) is currently being trialled for fitting to the ASLAV and has been found a very viable protection measure. Despite the large footprint of the system it still allows a vehicle to be used in traffic and constrained urban environments. A key consideration is to ensure the vehicle maintains its on-road performance; this is important as the ASLAV's high speed and agility is itself a key survivability feature. The system trialled to date is light yet durable, and allows the ASLAV to reach its top speed, a respectable dash speed and maintain suspension response to conduct violent manoeuvres where required. The system itself is easily fitted by the crew and has a simple modular construction that can be readily repaired if required.
- **Remote Weapon Station.** The Kongsberg Remote Weapon Station (RWS) was purchased in mid-2004 for use in Iraq to address a known deficiency in the ASLAV-PC; the vehicle crew commander being required to stand in his cupola with his body exposed from the waist up in order to use the vehicle's pintle-mounted 12.7mm heavy machine gun (HMG). The RWS can mount a 12.7mm HMG, 40mm automatic grenade launcher (AGL) or Javelin anti-armour missile. It provides the crew commander the freedom to patrol arcs with the RWS by means of a thumb control joystick, while positioning himself to best maintain situational awareness for driving in traffic or manoeuvring in contact. A large screen display provides all sighting information and incorporates day camera and thermal camera images. The system enables targets to be engaged with first round hits at the maximum effective range of the attached weapon and provides a precision lethality with the 12.7mm HMG that has not been seen before in Australian Army service. The 40mm AGL is a particularly impressive suppression weapon. With an effective range of over 2000m against area targets and a corresponding day or night sighting system, the 40mm AGL can pro-

vide a large volume of accurate fire in the event of an ambush or to provide suppression fire for dismounted elements.

- **Personal Protection.** Vehicle crews have been issued with body armour and ballistic protection goggles in addition to their standard crew helmets. The ballistic goggles proved their worth in the 25 October attack, saving the crew commander's eyesight.

In Iraq the ASLAV has adapted well to operations in the complex terrain of a major city. While the 'toughness' of its skin has been increased with the addition of spall liners, BAS and getting an ASLAV-PC crew commander out of harm's way with a RWS, these simply augment the protection already inherent in a well-designed vehicle. These measures in turn are supplemented by the protection offered by a crew commander's situational awareness, supported vehicle movement, and the ability for that crew commander to put his vehicle where his patrol needs him in relation to the enemy and a developing contact.

A 13-tonne ASLAV-25 moving at highway speed searching for and tracking potential targets from a stabilised turret is a formidable sight to anyone on the ground and its ability to psychologically intimidate should not be underestimated. ♦

*Captain Tim Hales is a Project Manager with the ASLAV Project in Land Systems Division of the Defence Materiel Organisation.*

## The vehicles

Three ASLAV variants have been deployed to Iraq:

- The ASLAV-25 has a two-man electric-drive turret which provides the latest generation thermal-imaging and image-intensification sights, together with a laser rangefinder and integrated navigation system. The turret is armed with a fully stabilised 25mm M242 Bushmaster cannon and two 7.62mm machine guns, one co-axial and one pintle mounted. This vehicle can carry an additional six troops if required.
- The ASLAV-PC (personnel carrier) is capable of carrying a nine-man section plus the crew of two. For Iraq the vehicle has been fitted with the recently procured Kongsberg RWS. This provides protection and additional sights for the crew commander while significantly increasing the lethality of the vehicle.
- The ASLAV-F (fitters) variant is used for the immediate recovery and engineering support of damaged vehicles.