



Based firmly on Pearson Engineering's experience in defence and security, Special Projects offer customer oriented solutions across mine clearance, remote control and area denial. With a focus on Research and Development, Pearson Engineering delivers innovation in these sectors.

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Future focused solutions

Countering the most difficult challenges

Capability proven within defence and security

# INTELLIGENT AREA DENIAL DEVICE

Pearson Engineering's Intelligent
Area Denial Device (IADD) is
a small unit designed to be
emplaced within the ground to
arrest suspect hostile vehicles.
The technology within the device
allows it to discriminate between
personnel and vehicles, delivering
safe and reliable capability which
can be tuned to the
needs of the battlespace.





## INTELLIGENT AREA DENIAL DEVICE

#### KEY APPLICATIONS

Pearson Engineering's IADD is designed for emplacement around vulnerable locations or locations of specific hostile interest, such as Forward Operating Bases.

- Vehicle Disruption A tyre penetrating barb is deployed to rapidly deflate a pneumatic tyre and reduce the vehicle's tempo
- Vehicle Arrest A tyre penetrating barb, used in conjunction with entanglement lines and a suitable anchor system, is used to arrest an approaching hostile vehicle, slowing the vehicle to a stop and preventing it from continuing along its intended course.

### OTHER APPLICATIONS

The technology contained with the Pearson Engineering IADD allows for a range of other tactical uses:

- Vehicle Marking An approaching hostile vehicle could be marked with a visual marker or other such device to enable future identification
- Vehicle Tracking An approaching hosting vehicle could be tagged with a GPS tracker to enable future tracking and location monitoring
- Vehicle identification & Monitoring An approaching hostile vehicle could be identified and monitored via means of a mini-UAV, camera and/or microphone.

#### INTELLIGENT TECHNOLOGY

The device 'intelligence' allows for it to discriminate between personnel and vehicles. The device utilises a range of sensors and indicators with appropriate filtering and algorithms which can be 'tuned' to suit the installation and target threat.

The device can also be 'armed' or 'disarmed' by the operator, either remotely or locally, to allow or prevent the passage of vehicles, i.e. for 'friend' or 'enemy' vehicles.

#### **FEATURES**

- Used to automatically deny vehicular access to a specified route or area on demand to protect against suspected hostile vehicles
- Ability to arrest a vehicle up to 3 tonnes of mass travelling at 50mph or under
- Rapid emplacement and activation
- Tuneable to allow for friendly vehicle approach
- Multiple sensors used to detect and confirm the presence of a suspected hostile vehicle
- Ability to 'arm' and 'disarm' the device
- Ability to discriminate between pedestrians and vehicles to prevent unintended harm or injury
- Arrests the suspected hostile vehicle by entangling the drivetrain with lines anchored either beneath the ground or to a solid surface
- If the device needs to be abandoned, it can be rendered safe by mechanical or electrical means from either a local or remote location.

# REMOTE CONTROL SYSTEMS

Pearson Engineering's Remote Control Systems (RCS) are designed to take the person out of harm's way when necessary.





## REMOTE CONTROL SYSTEMS

#### **KEY APPLICATIONS**

The RCS is a proven, safe and reliable means of operating unmanned military vehicles from a distance. Originally developed for use by the British Army, the RCS employs secure digital radio link technology.

Our RCS operates on the master-slave principle, with the unmanned 'slave' vehicle controlled from an Operator Control Unit (OCU) installed inside the 'master' command vehicle. Multiple cameras provide all round vision with images and performance data being relayed to the operator via a high resolution display screen.

#### OTHER APPLICATIONS

As remote controlling a vehicle requires a significant amount of concentration, we have developed an intuitive and straight forward interface which provides a comfortable environment to effectively operate the system.

The operator interface provides feedback on a number of parameters including vehicle speed, heading, pitch and roll, system configuration and faults, engine speed and the selected camera.

In addition to a 'briefcase' based control system, Pearson Engineering has developed a 'Game Console' concept. Made from die-cast aluminium, the controller features two X-Y joysticks (one for scrolling through the screens and the other for driving), shortcut buttons for scrolling through the screens and selecting the cameras.

Pearson Engineering has also incorporated the capability for two operators to simultaneously control a single vehicle, allowing one to concentrate on the driving functions and the other to operate the Special to Role equipment.

#### **FEATURES**

- Our RCS systems offer a proven, safe and reliable means of operating unmanned military and mine clearance vehicles from a remote command post
- RCS operates on the master-slave principle, with the unmanned 'slave' vehicle controlled from an Operator Control Unit (OCU) installed inside the 'master' command vehicle
- Multiple cameras provide all round vision with images and performance data being relayed to the operator via a high resolution display screen
- As a minimum the RCS is capable of controlling the steering, accelerator, service and parking brakes, gear and driving direction and camera selection at a distances of up to 5 km
- It can also control all other vehicle systems and is compatible with the full range of Pearson Engineering Special to Role equipment
- Easy to use 'briefcase' or 'handheld' controllers
- Intuitive menu system used to control the vehicle and its payload
- Safety 'designed in' from initial concept
- Approved by the US Navy Weapons System Explosive Safety.

# **MINE CLEARANCE**

Pearson Engineering's Mine
Clearance capability includes a
range of manned and unmanned
platforms for the clearance of
explosive threats. Interchangeable
front end attachments provide
tools for counter-IED tasks,
explosive ordnance disposal,
obstacle reduction and
de-mining. All products are
provided with through-life support
to keep equipment working, even
in the harshest of conditions.





## **MINE CLEARANCE**

Pearson Engineering's mine clearance products have proven superior performance in a variety of environments against landmines and improvised explosive devices (IEDs). Durability, reliability and survivability are inherent in the design and manufacture of both the platforms and their attachments.

The quality and unique multi-purpose nature of our clearance platforms enable mechanical solutions to be tailored for different applications according to customer requirements. The same platform can be used for mine clearance, counter-IED, runway clearance and general engineering tasks by using the appropriate attachment. This flexibility ensures the machines are able to fulfil operational requirements in any environment.

#### MINE CLEARANCE SYSTEMS

**MW50** - Light and rugged vehicle for mine clearance and heavy duty EOD operations

**MW240** - Multi-purpose platform to handle a variety of dangerous tasks

**MW330** - Excellence in mobility and performance for mine clearance

**MW370** - Technologically the most advanced and field proven large scale mine clearance machine on the market

#### **APPLICATION**

- Landmine and IED clearance in hard-to-access areas.
- Clearance of AP mines and IEDs on steep inclines, in trenches or forests where other mechanical platforms cannot access, offering a safe alternative to manual clearance
- Route clearance in jungle and forest
- Clearance of AP mines and IEDs from narrow routes and paths through forest and jungle in support of dismounted patrols and can carry supplies, spare parts and fuel for the troops using roof racks and small off-road trailers
- Route clearance and counter-IED in urban areas
- Fitted with the multi-purpose robotic arm, our machines can clear mines and IEDs from urban patrol routes and can be used for breaching and entering suspected hazardous buildings and removing obstacles
- Small humanitarian and demining projects
- Offering a cost-effective, easy to handle solution for technical survey and small demining projects, the MW50 complies with humanitarian standards and is able to create
   1.2 metre wide access lanes for medics and manual deminers
- Road and runway clearance
- Rubber tracked and able to drive up to 15km/h whilst fitted with the appropriate tool, our products can clear roads and runways from cluster munitions and other explosive remnants of war.

# **ROUTE PROVING**

PEROCC (Pearson Engineering
Route Opening and Clearing
Capability) provides a single
platform solution to the
requirements of the counter mine/
IED route clearance mission
with the capability to detect
explosive threats and proof routes
at tempo whilst maintaining
a high level of self-protection.





## **ROUTE PROVING**

#### **KEY FEATURES**

- Based around any commercially available wheeled loader, providing inherent high levels of reliability
- Roller wheels follow ground contours providing constant ground contact
- Under armour hydraulically operated quick hitch/jettison system for front and rear equipment
- Interrogation/manipulation arm which can be used to deploy a range of attachments to suit the task in hand, it can also be used as a crane for self-repair operations
- Can be fitted with a subsurface detection suite based around Ground Penetrating Radar to give the dedicated PEROCC sensor operator an in-road buried detection capability as well as road-side, extended width (side- by-side), or spot interrogation capabilities through a repositionable arm-mounted sensor

- Double V-shaped blast deflecting armoured hull beneath crew compartment
- Crew Compartment protected to STANAG 4569 Level 3 ballistic and blast (A+B)
- Blast-Off Wheels
- Facility to install an Overhead Weapon Station
- Configurable storage space
- Night/day indirect vision systems
- Economically in-stride repairable capabilities post blast.



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