LIGHT WHEELED VEHICLE PRODUCTS

PEARSON ENGINEERING

INTRODUCTION

Pearson Engineering is a privately owned UK company that develops Combat Engineer systems and equipment to meet the needs of the world's Armed Forces. Our particular expertise is in the supply of specialised Counter-Mine, Counter-IED, Route Proofing and Clearance, Combat Earthmoving and Assault Bridging Equipment for Armoured Fighting Vehicles. Pearson Engineering are world experts in designing and manufacturing high quality products and integrated solutions, to enhance mobility and protection of those in harm's way.

ASSURED MOBILITY

In the challenging, complex and uncertain land environment, Commanders need more than ever the ability to freely manoeuvre to places at times of their choosing. Our range of vehicle attachments, each optimised for a particular combat engineering role, can be interchanged and configured to deliver Assured Mobility support to combat operations.

GLOBAL CAPABILITY

Our core company values are built around a desire to serve the needs of customers and to provide solutions to their particular requirements. The company supplies equipment and services to many countries throughout the world delivering Global Capability when and where it's needed, on time, every time.

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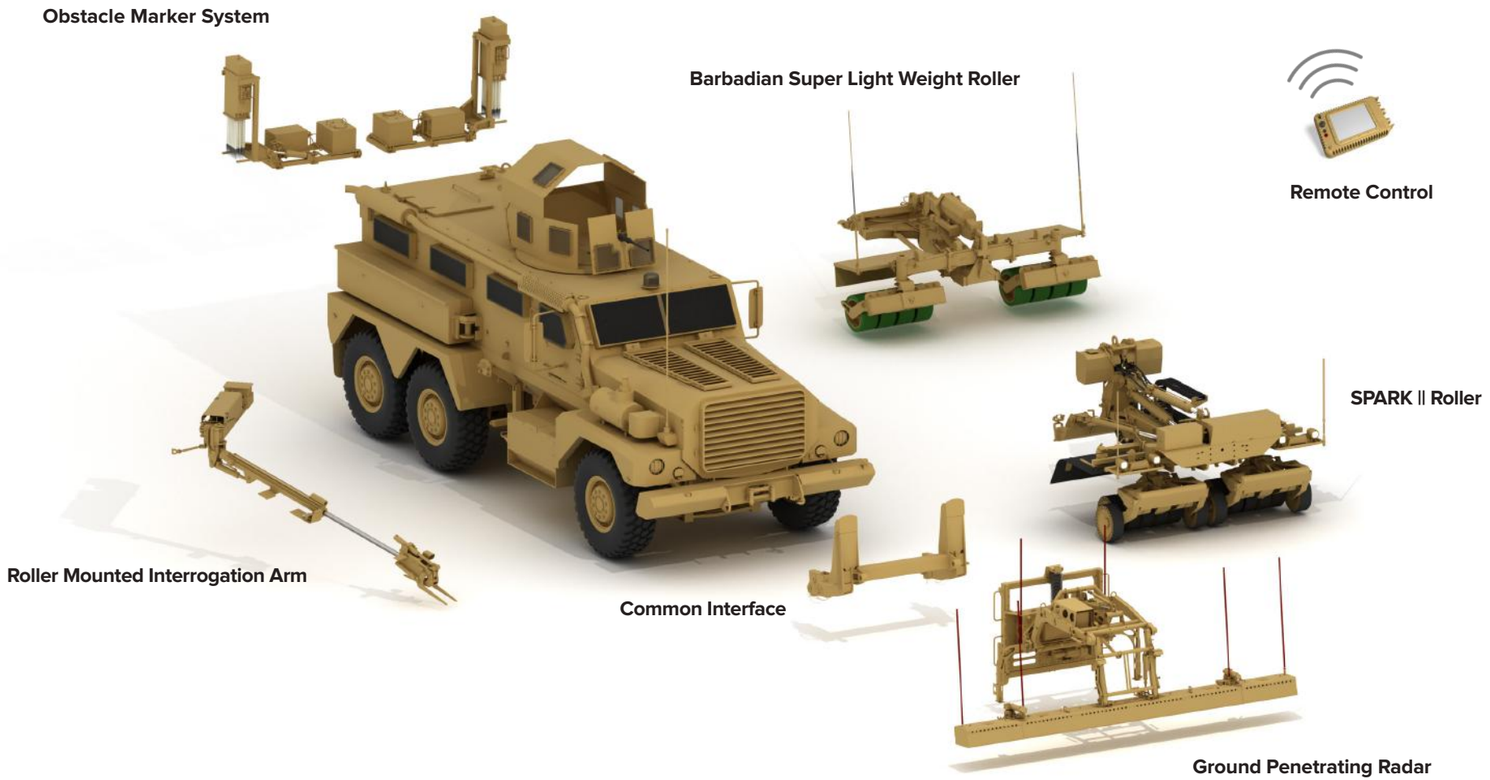
PRODUCTS FOR LIGHT WHEELED VEHICLES

All of Pearson Engineering's front end equipment is designed to be fitted either directly to the host vehicle or via a common interface system which allows for their quick and easy attach and release.

The common interface is suitable for all of our front end equipment and offers the commander the flexibility to adapt to his mission. They can task organise equipment to the mission requirement and choose the best tool for the job. This approach leads to higher levels of mission success by increasing force capability and availability without increasing force structure and manpower.



SPARK II ROLLER

- Provides full width route proving capability to MRAP vehicles
- Lightweight but heavy effect
- Minimal effect on vehicle mobility and manoeuvrability
- Roller wheels follow ground contours providing constant contact at speed
- Solid tyres resist punctures and damage
- Can be jettisoned in an emergency
- A robust and compact system which requires little maintenance

The Self Protection Adaptive Roller Kit II (SPARK II) provides full width route proving by applying pressure to the ground ahead of the host vehicle to detonate threats before the vehicle and its crew reach them.

SPARK II comprises two 7-roller wheel banks to provide protection across the full width of the vehicle. The roller wheels are puncture proof and are made from a special wear-resistant semi-compliant polyurethane compound.

A steering system can articulate SPARK II left to right to protect the vehicle when negotiating corners. A hydraulically deployable braking system applies a braking force when required.

The stand-off between the roller gang and the vehicle can be hydraulically extended or retracted depending on operational requirement.

BARBADIAN SUPER LIGHT WEIGHT ROLLER

- Provides track width vehicle protection
- Lightweight
- Minimal effect on vehicle mobility
- Roller wheels follow ground contours providing constant ground contact
- Puncture-proof tyres
- Rapidly repairable
- A robust and compact system which requires little maintenance

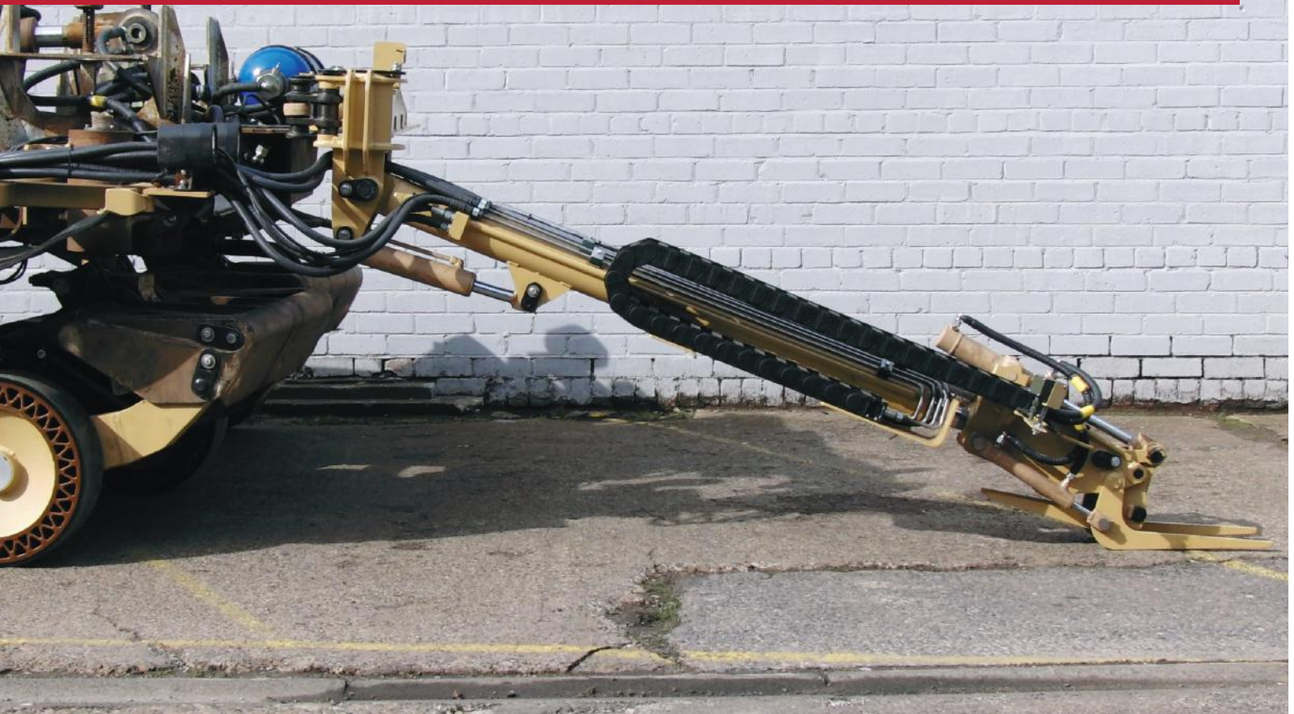
The Barbadian Super Light Weight Roller (Barbadian) provides track width vehicle protection from the effects of Victim operated IEDs (VOIEDs) by applying pressure to the ground ahead of the host vehicle to detonate threats before the vehicle and its crew reach them. The system is generally used where there is a possibility, rather than the probability of the presence of threats on an intended route.

Barbadian is robust and light and comprises two 6-wheel roller gangs to provide protection across the width of the vehicle wheels. The roller wheels are puncture proof and are made from a special wear resistant semi-compliant polyurethane compound.

A steering system can articulate Barbadian right and left to protect the vehicle when negotiating corners.

The stand-off between the roller gang and the vehicle can be hydraulically extended or retracted depending on operational requirement.

ROLLER MOUNTED INTERROGATION ARM



- Increased operator safety through stand-off
- Articulations include raise / lower, slew, extend / retract and manipulate tool
- Compact stowage against the mine roller
- Proven to operate on a wide range of terrain
- Automatic stow function
- Full situational awareness

Roller Mounted Interrogation Arm (RMIA) interrogates and uncovers threats using a manipulator. Mounting to the mine roller provides significant vehicle stand-off distance for safety.

The RMIA is equipped with a versatile multi-function interrogation tool, capable of digging, grabbing and lifting. The arm can be extended to increase stand-off distance from the host vehicle. The mine roller provides a stable platform for mounting and increases the expected stand-off distance for interrogation. An in-vehicle control system provides good situational awareness with a suite of cameras and lights installed to provide clear feedback.

GROUND PENETRATING RADAR

- **Articulation between stowed, calibration and operational positions**
- **Lightweight and stiff to ensure accurate antennae positioning**
- **Optional combined capability with metal detection**
- **Common interface compatible**

Ground Penetrating Radar (GPR) enables the detection of potential threats ahead of the vehicle so the threats can be marked, avoided or interrogated.

The GPR deployment mechanism is designed to stow and deploy 3rd party GPR antennas for the detection of buried explosive threats. The deployment mechanism enables GPR antenna to remain within a fixed proximity of the ground, stow safely when not in use and to articulate intermediate positions for antenna calibration. The GPR antenna capability can be enhanced by combining with other capabilities such as metal detection.

Partnered Product

OBSTACLE MARKING SYSTEM

- Provides vehicles with the capability to clearly mark out safe lanes and routes or hazardous areas
- Low weight system
- Deployment mechanisms available to suit a wide variety of combat vehicles
- Various marker poles are available including reflective, fluorescent, day-glow and LED-enhanced
- Capable of manual, distance or time-based firing
- Proven and in service with numerous Armed Forces

The Obstacle Marking System (OMS) is a vehicle mounted electro-pneumatic payload dispensing system most commonly used for marking the boundaries of routes and areas. Designed to fire marker poles into the ground at controlled intervals, the OMS gives a host vehicle the capability to clearly mark out hazardous areas such as the edges of a minefield breached lane.

An OMS comprises dispenser units mounted either side of the vehicle, compressor units mounted onto the vehicle, an OMS Control Unit (OMSCU) and a set of marker poles.

The dispenser unit enables marker poles to be fired pneumatically, either manually or automatically, into a variety of surfaces from sand and soil to asphalt and concrete at either timed or distance based intervals.

REMOTE CONTROL SYSTEM

- Proven and in service with numerous Armed Forces
- Safety mechanisms are considered within every design aspect, ensuring safe operation
- Easy to use, based on commonly available remote control hardware
- Secure encrypted digital radio link technology
- Reduces the risk to human life during Counter-IED and Counter-Mine operations
- MANET technology enables multiple RCS's to operate under one frequency, boosting performance in NLOS (near-line-of-sight) environment

The Remote Control System (RCS) is a proven, safe and reliable means of operating unmanned military vehicles either from a remote command vehicle or personnel portable system. Originally developed for use by the British and US Army, the RCS employs secure digital radio link technology with encryption. The radio link is optimized to achieve maximum range and throughput.

RCS operates on the master-slave principle, with the unmanned 'slave' vehicle controlled from up to two (2) Operator Control Units (OCU).

Multiple cameras provide all round vision with high definition video and performance data being relayed to the operator via a high resolution, low glare, display screen.

SPARES AND THROUGH-LIFE SUPPORT

Pearson Engineering is committed to ensuring that customers are fully supported with spares packages, training and through-life support for their equipment.

A dedicated team of through-life support specialists ensure that customers have everything they need at their disposal to effectively use the equipment and to fully maintain its operational capability.

FIELD SUPPORT

Field Support Representatives provide 24/7 on call assistance, in field repair support, trials support, equipment installation support and new equipment training solutions.

INTEGRATED LOGISTICS SUPPORT

Pearson Engineering offers its customers a comprehensive range of ILS services that encompass the DEF STAN 00-60 methodology.

REPAIR AND OVERHAUL

Pearson Engineering has the facilities and key skills required to provide a comprehensive equipment conversion, repair and overhaul service.

DESIGN AND TEST

Pearson Engineering has a dedicated design office, prototype development and test facility and access to test and trial sites throughout the UK and U.S.

FACILITIES

Pearson Engineering facilities include the Armstrong Works in Newcastle upon Tyne, UK.

These unrivalled facilities provides an immediate on-site dedicated machining, fabrication and assembly capability for the rapid prototyping and production of defence materiel.

VEHICLE BUILD

Pearson Engineering offers sub-contract full vehicle assembly, integration & test services for tracked, wheeled, light, medium and heavy armoured vehicles, based at the site of manufacture for the current British Army heavy armoured fleet. Ready now for sub-contract armoured vehicle assembly.

DEFENSIVE STRUCTURES

Our fully equipped facility provides customers with a single location for fabrication, welding, machining and finishing of armoured hulls, turrets and structure. Unique armour manufacturing capability in the UK.

PROGRAMME MANAGEMENT

With over 30 years of experience in delivering Combat Engineering systems to countries worldwide, Pearson Engineering understands defence programmes and contracting with both end-users and prime contractors. Complex project management capability with small company agility.

SUPPORT & MRO SERVICES

Proven complex defence services including repair and integration, modification, inspection and upgrade. End-to-end defence manufacturing services for armoured fleets.

CONTACT US

T: +44 (0) 191 234 0001
E. pearson@pearson-eng.com

Pearson Engineering Limited
Armstrong Works
Scotswood Road
Newcastle Upon Tyne
NE15 6UX
UK

www.pearson-eng.com