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MILITARY SYSTEMS & Technology

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The Defence Suppliers Directory Magazine

ELECTROTHERMAL

Food and water heaters for modern military operations

ORBISON

Textile engineering for Defence, Media, Commercial & Emergency Service sectors

MILAN BOX CORPORATION

Manufacturers of boxes and crates since 1927

PLASTPACK DEFENCE PPD

Development and production of lightweight packaging solutions

NORTHROP GRUMMAN

VHF & UHF ground-to-air communication solutions

NOPTEL

Development & manufacture of innovative applied optoelectronic solutions

STONEHAVEN ENGINEERING

Engineering Excellence for the Harshest Environments

PLUS...

ARGON

L3 WESCAM

PELI

MARSHALL AEROSPACE

TEKELIS

WEW

TSS

AND MUCH MORE...

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October Edition | 2017



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Welcome to this
edition of the
**Military Systems
& Technology Magazine.**

As an established web portal for the International Defence & Aerospace Industry, we strive to provide a comprehensive and detailed listing of Military Equipment Suppliers, Products and Services. This newsletter is designed to keep you up-to-date with latest news and events within the Defence Industry's Governing Bodies, Organisations and Companies.

The Defence Industry Web Portal

For more information, technical guidance or the latest subscription packages available for Military Systems, Naval Systems and Security Systems, please contact us where one of our team will be more than happy to advise you.

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Letters from home, hot food and hot drinks

...it's what keeps the guys going.

Electrothermal is a UK-based company that manufactures and designs water and ration heaters for military vehicles. Our heaters are designed for operations on the move and can fit into the cramped quarters of a tank, or other military vehicles, to provide necessary sustenance to the soldiers on-board.

Key features:

- Heats 2 pints water and 5MREs in the vehicle while on the move
- Contents remains hot for up to 6 hours after the unit has been switched off
- "Cool to touch" outer casing
- Designed-in "Boil Dry" condition and fail safe mechanisms
- Connects to vehicles auxiliary power supply, 24 volts DC
- Heating range 66 to 71°C (on LO setting)
- Heating range 82 to 88°C (on HI setting)
- Ramp rate of 56°C in one hour (max) from ambient temperature of 21°C

Our current range of RAK water and ration heaters includes:

- RAK 15: operates off 15A and is designed for installation in tanks and trucks
- RAK 30: draws 30A to heat faster and is designed for the marines and special forces

Food and water heaters for modern military operations

RAK15/30 units are designed to withstand the rigours of modern conflict and have been comprehensively tested to meet military standard specification MIL-PRF-44466D, MIL-STD-461 and MIL-STD-810. They are also certified for food heating after meeting NSF ANSI 4-2013.

Constructed from a robust stainless-steel outer casing, the unit is sealed to be water-tight, so that any steam is retained within its interior. It has both low and high temperature settings and its own built-in control, so that a separate control unit is no longer necessary. The choice of heating ranges is either 66°C - 71°C (on LO setting), or 82°C - 88°C (on HI setting).



Orbison Products

A small company with high standards



Orbison Products has been active in the textile engineering business for over 30 years. They pride themselves on their quality and customer service, none of their work is outsourced overseas.

“We are proud to say our products are made in the UK”



Quality Management System, we are an ISO 9001 2008 certified company, audited by BSI.

Trade Memberships. Orbison Products Ltd are a sustaining member of The Association of Motion Picture Sound (AMPS) and a member of The Federation of Small Businesses (FSB)

“Talk to Us. If you need a bespoke pouch, bag, backpack, tool roll, cover, valise or any

other textile engineered product please conduct us, we welcome your call or email, better still arrange a visit and meet the team to discuss your needs with our dedicated, friendly staff.”

Defence Sector

Working to UK Defence Standards and US Milspec

For over 30 years Orbison Products have worked within the defence sector with defence equipment manufacturers and directly with the military. We are well practised in working to the exacting standards required in the defence manufacturing arena such as UK Defence Standards and US MILSPEC.

Our textile products are in service on the land, sea and in the air from bomb disposal operations to fast jet pilots.

Military equipment is subjected to extremes of use all over the world. By its nature this equipment is usually expensive, sophisticated and requires to work the first time, every time. This equipment needs to be protected during storage, transit and use.

Orbison has designed and manufactured a wide range of bespoke products directly for military customers and also in partnership with the large prime defence contractors and SME defence manufacturers.

Our design engineers have expert knowledge of the design standards required to meet the needs of the military end user. We manufacture pouches, cases, covers and bags for a wide variety of military products such as; specialist bomb disposal equipment, pilot's helmets, detectors and vehicle systems.

We utilise the full range of the latest textile materials; such as Aramid, Kevlar and Cordura; plus the full range of military camouflage patterns from around the world.



Orbison Products Ltd



www.orbison.co.uk

Media Sector

Bespoke Textile Products for Media Organisations and Freelancers alike

Orbison offer a range of products for use by media organisations and freelancers alike, our textile engineered solutions range from wireless microphone carriers for both studio and extreme outdoor use, studio place markers, autotune screen shades, battery carriers and equipment bags.

We offer our bespoke design and manufacture service so whatever your requirements we can help. As a sustaining member of AMPS we are in tune with the varying and individual needs of our media customers. Contact our team and see what Orbison can do for you.



Commercial Sector

Serving the Wider Commercial Sector

We serve the wider commercial sector with a wide range of textile products such as instrument carriers, kit bags, document pouches and carriers, commercial sample transport bags, equipment covers and valises. If you have a product that requires a textile solution come and talk to us

Sub Contract manufacture, we often work with our fellow textile engineering company's on sub contract work to help fill urgent contracts or to ease workload in busy periods. We can also design and manufacture own label products, so if you have an idea for new textile

product we are more than happy to assist on the journey from idea to product manufacture.

Emergency Service Sector

Bespoke Products for Emergency Services

We serve the full spectrum of the emergency services sector both first responders and their supply chain.

Orbison Products have designed and manufactured rescue equipment carriers, incident response grab bags, radio pouches, first aid kit pouches, para medic rucksacks and many other textile solutions, if you need a fast response to your first response textile engineering needs please contact us, we are here to help.



Milan Box Corporation manufactured boxes and crates since 1927.

The company expanded into military ammunition boxes during the Second World War, and now provides wirebound, wooden containers and boxes for ammunition, fuzes, grenades, artillery munitions, rockets, explosives and missile components.

Our military wirebound and nailed wood boxes are made to fit BWAY ammo can dimensions.

Throughout our history, Milan Box has maintained its excellent reputation as a high quality manufacturer of plywood and wood packaging.

Our customers include Ensign Bickford, ATK, Raytheon, General Dynamics, Picatinny Arsenal, United Defense, Pine Bluff Arsenal, Olin, BT Fuze, Federal Cartridge, DZI, and many others.

Milan Box is an approved US government SBA Hub Zone Qualified small business and currently it hopes to acquire more FMS customers (involved in the Foreign Military Sales program supported by the US government).



Main Military Box List - all made to U.S. Government Specifications:

Wirebound Boxes:

M2A1
M19A1
PA108
40mm
60mm Mortar
81mm Mortar
120mm Mortar

Wood Boxes:

GMLRS
105mm
Bradley Armor Tile
Striker Armor Tile
Hydra 70
M67 Grenade Box

**Milan Box Corporation
manufactures a range of military
products made to the following
United States Government/Mil
specifications:**

MIL-DTL-2427
MIL-B-15011
MIL-DTL-46506
PPP-B-585
PPP-B-587
PPP-B-601
PPP-B-621



Military Wirebound Ammunition Containers

Milan Box Corporation's wirebound containers offer maximum protection, withstand rough handling, permit high stacking, occupy less cube, have a low tare weight, and keep packaging costs low.

Our M2A1 wirebound plywood container is used for the 5.56mm, 9mm, 45cal and 7.62mm cartridges. It is manufactured according to military specification designated PPP-B-585D. It is one of the most popular types used by the US Army and Marines, is

on has nd



Nailed Wooden Container Boxes

The M6 reactive armor tile wooden container is available in several versions, including the M3, M4, M5 and M7, all designed to package various sizes of armor tiles for the Bradley Fighting Vehicle. Similar wooden containers will be used to package armor tiles for the new Stryker Amphibious Vehicle.

These containers are built to military specification designated Mil-B-2427 per drawing number 12590330.

Our wooden fuze box container is used for mortar and artillery fuzes and plastic cord explosives. It is manufactured according to military specification designated Mil-B-2427. It is one of the most common types used by the US Army and Marines and comes in various larger sizes.

Pricing normally includes various military markings prescribed by the customer.

Plywood Ammunition Containers

Our 120mm mortar plywood container is designed to hold two rounds, and is manufactured according to military specification designated Mil-B-46506. It is a popular type also used by international munitions manufacturers. It can be heat treated and preservative treated. It comes with two fiber-tube inner containers.

The TOW missile plywood container is manufactured according to military specification designated Mil-B-46506.



This container represents an integrated packaging effort to source various components including barrier bags, separators, foam inserts and corrugated pieces required per the military drawing.

Milan Box has also manufactured a similar missile box for the Stinger Shoulder Fired Missile.

Integrated Military Packaging Systems

In an effort to better serve our customers, Milan Box Corporation works in conjunction with United Ammunition Container, Inc, a packaging supplier for the armed forces, to provide a one-stop source for your complete packaging needs, including inter-pack requirements.

Whether requiring fiber containers, wooden boxes, wirebound boxes, or specialty skids, this association provides for customers' requirements.



per military drawing 7553347, and includes a special heat treatment and a preservative treatment.

Pricing normally includes various military markings prescribed by the customer and is largely governed by the availability of materials and quantities ordered.

US Marines enhance CBRN readiness with Argon's PlumeSIM



The United States Marine Corp (USMC) have awarded a contract for the delivery of PlumeSIM, Argon's instrumented CBRN training system. Due for delivery early 2018, the system will include a number of training simulators and will significantly enhance CBRN exercises and student learning for the Marine Corp.

PlumeSIM enables users to implement both Table top and Live Field Exercises based upon both GIS mapping and "home-made maps" with ease, and incorporates a powerful after action review (AAR) capability that enables both command decisions and survey team activity to be practiced, verified and refined.

A wide variety of associated training simulators are supported which accurately represent the form fit and function of the actual detectors they represent. The simulators can be used independently for localised indoor and outdoor scenarios without the need to utilise and form of hazardous material that may impact upon health and safety or the environment, an approach enabling exercises to take place within any desired location.

Steven Pike, Argon's Managing Director commented *"This significant contract for such a prestigious organisation represents yet another important award for Argon and underpins the excellent reputation our products and the company has within the close knit CBRN / HazMat community. Argon continues to develop PlumeSIM and our portfolio of detector simulators which are an established premier solution for Live and virtual CBRN training adopted by many countries throughout the world."*

L3 WESCAM Wins Contracts Valued at More Than U.S. \$200 Million During First Half of 2017

L3 WESCAM announced today that it has won a series of MXTM-Series electro-optical/infrared (EO/IR) product and in-service support contracts valued at more than \$200 million USD during the first half of 2017.

The contracts, originating from key global regions, including the Americas, Europe, Asia, Africa and Oceania, were placed on behalf of leading defense customers who will leverage the technologies across airborne, land and maritime domains. Half-year highlights include a heightened demand for MXTM systems on Unmanned Aircraft System (UAS) platforms, numerous orders from global Original Equipment Manufacturers (OEMs) and a surge in service contracts across the U.S. and United Kingdom.

"We are very pleased that end users and globally based OEMs continue to look to L3 for the essential ISR technologies and logistics support services required to keep missions moving forward," said Mike Greenley, President of L3 WESCAM. *"The collective orders from our first half of the year reaffirm that we are not only creating and investing in the right products, but that we're aligning our offerings for our customers' much-valued support infrastructure, maintaining the full functionality of MX products through their natural life cycle. We expect this demand to continue through the second half of the year."*

Increased Demand for Unmanned Aircraft Systems

The demand for L3 WESCAM's EO/IR turrets for use on board UAS platforms continued

to grow in the first half of the year, with more than 60 units ordered for deployment across six countries. The systems will support worldwide defense and security missions from six different UAS platforms that are active across both land and maritime domains. Systems ordered include surveillance and targeting configurations consisting of the small and tactical MXTM-10 through L3's largest and most powerful MX product, the MXTM-25.

MX Systems Remain Key Solution Components for Industry OEMs

L3 was awarded a number of contracts that continue to expand the company's presence on industry-leading OEM platforms. By the end of June, more than 60 MX systems were ordered from a collection of eight global OEM customers. Fitted to both fixed- and rotary-wing manned and unmanned platforms, the systems will support EO/IR surveillance and targeting missions for end users who operate across 10 different countries. MX systems are commercial-off-the-shelf products that are

delivered on a short timeline, complete with all the technologies needed to fulfill the mission profiles required by OEMs and their customers.

Additional Growth for In-Service Support Business

L3 experienced a steady growth of in-service support contracts from customers that operate military platforms equipped with MX-Series systems fielded across the U.S. and United Kingdom. One of the orders included a five-year in-service support plan (one base year and four option years) for the MX systems procured for the U.S. Air Force's AC-130 gunship program. These systems will be maintained out of several L3 WESCAM Authorized Service Centers (WASCs) located in the U.S.; the Eglin, Hurlburt and Cannon Air Force Bases; and the Dahlgren System Integration Laboratory. This is the second five-year term option the Air Force has executed in support of the AC-130 gunship program.



WESCAM's MX™-Series of EO/IR Systems

Peli Products Donates Material to Disaster Tech Lab

The Manufacturer Supports the Organisation by Providing Protective Cases and Lighting Systems to be Used in Hurricane Damaged Areas.

Peli Products, the global leader in the design and manufacture of advanced lighting systems and virtually indestructible cases for protecting valuable equipment, is proud to donate products to Disaster Tech Lab Organisation, for supporting them in the work of providing public Internet access among other communication services.



Disaster Tech Lab is an International Charity Organisation which has been helping in natural disasters at a global geographic scale. They have been helping across the Caribbean, Florida and Texas regions, in the areas impacted by Harvey and Irma Hurricanes in the last weeks.

Previously, they helped in Philippines and Haiti natural disasters and have worked with refugees in Greece.

Disaster Tech Lab provides rapid response communication networks for use in disaster relief and humanitarian aid work since 2012. Their networks and services help to connect responding organizations that offer food, clothing, and mental health support to affected communities, with a professional approach and communications equipment. They are also developing new technologies for use in disaster response work. With Peli cases, the Disaster Tech Lab team manages to

transport sensitive and valuable equipment keeping them waterproof and totally protected. Peli lighting tools, including hand held torches, headlamps or remote area lighting systems, are also supporting them in the darkest areas where electricity is not available.

Piero Marigo, Managing Director of Peli Products, says: *"When you transport valuable devices that cannot be damaged, you need a reliable companion. Peli products comply with the highest standards of protection and withstand rigorous impact and drop tests in severe environments, which makes them the right partner for humanitarian collaboration in areas damaged by nature forces. We are proud to collaborate with an inspiring Organisation as Disaster Tech Lab."*

Evert Bopp, founder of Disaster Tech Lab adds: *"Internet access can be as important as food and has become*

nowadays one of the most primary needs, especially in situations of emergency and disaster, where reliable communication can save lives.

With Peli, there is no risk of failure since these robust products never let you down in critical situations." Besides cooperating with Disaster Tech Lab's and other humanitarian organisations, Peli Products offers solutions used by professionals in the most demanding markets including rescue teams, firefighters, police, defence, aerospace, industrial or hazardous industries, and has protected their equipment in the most extreme conditions on Earth for over 40 years.

www.disastertechlab.org

www.peli.com



Marshall Aerospace and Defence Group awarded £13.5m contract to support MBDA missile systems

Marshall Aerospace and Defence Group to manufacture Common Anti-Air Modular Missile Canisters for MBDA
Contract worth £13.5m

Marshall Aerospace and Defence Group (Marshall ADG) have been awarded a new contract by MBDA for the manufacture of the Common Anti-Air Modular Missile (Camm) Canisters for the next-generation Sea Ceptor and LandCeptor weapon systems.

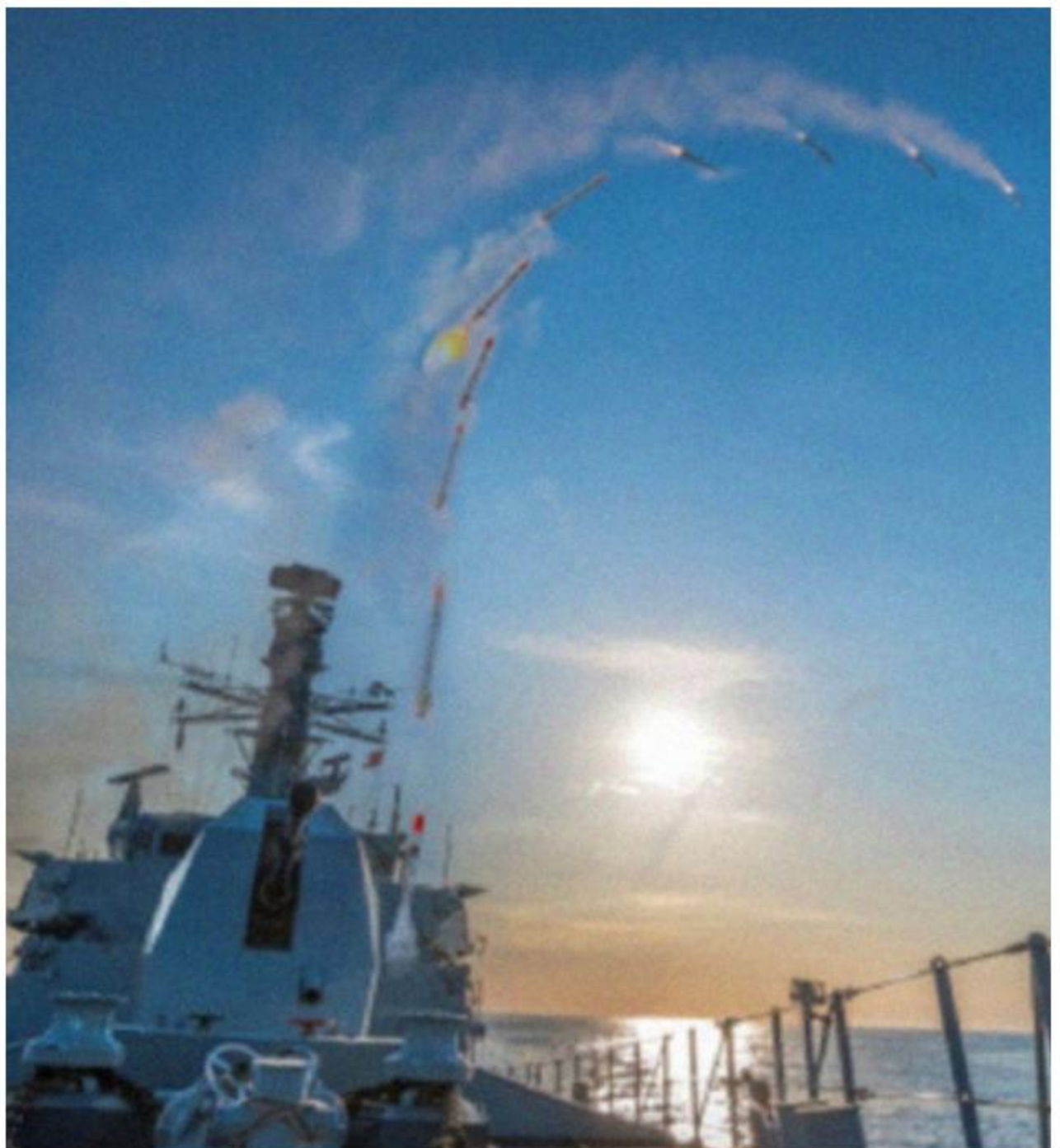
Through this contract, Marshall ADG will deliver Canisters as a semi-installed unit to MBDA. In addition to the £13.5m contract award, further options exist for future Camm requirements plus the potential for a Camm Extended Range Canister currently in development.

The contract will be fulfilled from Marshall ADG's Advanced Composites base in Kirkbymoorside, North Yorkshire where Marshall ADG has invested over £7.5m in composite manufacturing facilities, engineering capabilities and training since 2013 to support the growing demand for innovative advanced composite technologies.

Marshall ADG also supports the Land Ceptor programme through its design, manufacture and integration of sub-systems equipment for the Land Ceptor Fire Unit Support Vehicle (FUSV).

Alistair McPhee, CEO of Marshall ADG said *"MBDA have placed trust in us to support them for over five years, and to be part of the team delivering the most modern air defence system of its type in the world, is something we all feel very proud of; it affirms our ability to deliver and be a trusted supplier to MBDA and continue to support and protect Armed Forces around the world."*

Dave Armstrong, Managing Director of MBDA in the UK said *"MBDA has had a long and positive relationship with Marshall ADG. Having Marshall ADG as part of the Camm team is great news as their proven ability to deliver will ensure the success of Sea Ceptor and Land Ceptor for the UK Ministry of Defence and our international customers."*



Texelis Gears Up for Production of Canadian MSVS 8x8 Axles

Production of Volvo designed axles for the Kerax 8x8 logistic support vehicle being supplied to the Canadian Defence Forces by Mack Defense, a subsidiary of Renault Trucks Defense, is starting at the Texelis facility in Limoges, France.

Texelis, who won the order to supply the axles in 2016 will be providing 6,000 axle units over the next 18 months to be fitted to 1,500 8x8 chassis being assembled by Renault Trucks Defense for the Canadian Department of National Defence's

Medium Support Vehicle System (MSVS) Standard Military pattern (SMP) truck.

"To produce 6,000 axles in only 18 months has required our project management team to work hard to ensure not only that the factory is laid out to maximise production but also to work closely with our supply chain to arrange delivery of parts on time and to the high levels of quality that we require," said Jean Vandel, Business Development Director at Texelis.

Prior to embarking on production

Texelis has produced a number of axles for testing and certification over the last 12 months. During this period, the company has had to demonstrate quality and reliability for military off-road load carrying vehicles.

The Mack Defense Kerax 8x8 is a rigid chassis logistic tactical truck available with or without an armoured cab. The twin steer front axles provide a tight turning radius and high performance with superior ride quality. The Kerax 8x8 has a maximum payload of 32 tonnes, can climb a 60% incline, ford through up to 1.2m and a maximum road speed of 110 km/h.



WEW expands remote military refuelling capabilities

WEW, a THIELMANN company, has developed a new self-contained Fuel Storage and Dispensing (FSD) system for the remote refueling of land vehicles during deployed operations.

The 'drop and go' mobile filling station system has already been delivered to a military customer in the Middle East, where it is now providing stand-alone fuel station capabilities for military vehicles of all sizes.

Developed under an extensive collaboration between WEW and customer land forces, the bespoke system stores and dispenses up to 46,000 litres of diesel or petrol fuel direct to military vehicles from a self-bunded stainless steel tank. The

system is based on standard ISO container dimensions, and is fitted with high-capacity loading/discharge pump, twin dispensers, water storage and a fully air conditioned crew area. It can be powered by an integrated heavy-duty generator or external power as required.

The FSD has been designed from the outset to operate in extremely harsh conditions and to resist sand and water accumulation. Transportable by road and sea, the system requires minimal ground preparation at the deployment site, and is designed to be dispensing fuel shortly after its arrival. With a modular design, the FSD can be tailored to suit individual customer requirements, and variations are currently under development for the refueling of rotary and fixed wing aircraft, as well as bulk water storage, purification and distribution.

'We were tasked with filling a critical operational gap: to provide a system with medium mobility designed to serve as a stand-alone fuel station with crew accommodation in the most remote areas,' Björn Stolz, CEO, WEW Container Systems, said. **'We capitalised on our knowledge of producing multi-modal refueling systems, bringing our unique knowledge of transportable fuel dispensing systems to deliver the solution to the customer in a matter of months.'**

The FSD is CSC approved, making it transportable in any civilian supply chain, and the tank itself complies with European fuel storage requirements.

www.thielmann.com





TSS International

received approval from Lloyds Register Netherlands B.V. for the quality management norm ISO 9001:2015.

This approval replaces ISO 9001:2008, for which TSS was already certified for many years.

With the early implementation of this updated quality management system, we hope to be able to continue to serve our relations - customers and suppliers - as a high quality and reliable partner. The High Level Structure, characterising the 2015-norm, also allows easier integration of other management systems (for example with regard to environment), should this later prove to be important and necessary for us and our partners.

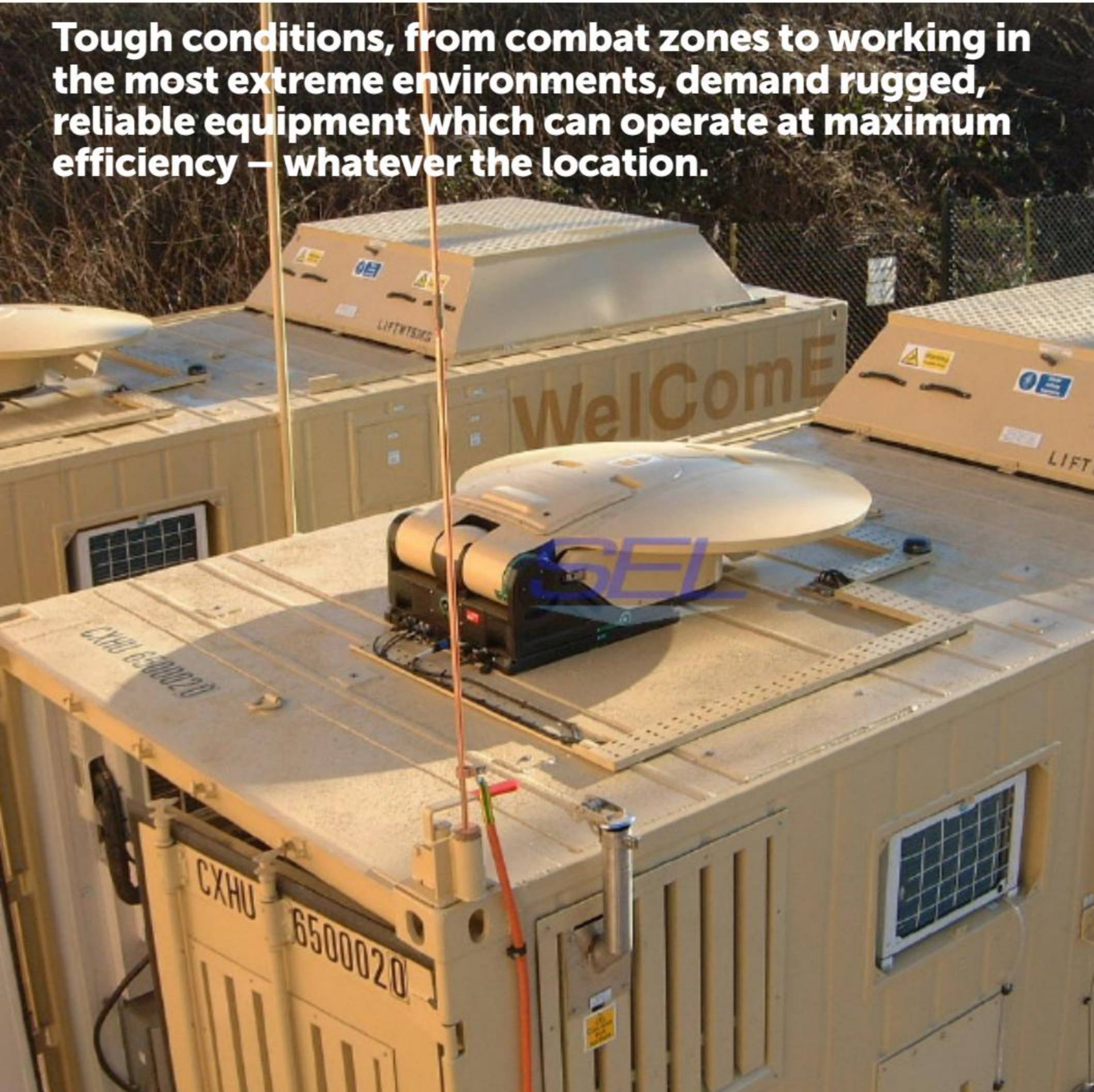
If you need a copy of our certificate for your administration, please let us know at the e-mail address sales@tssh.com.

We are at your disposal for further questions.



Engineering Excellence in the Harshes Enviro

Tough conditions, from combat zones to working in the most extreme environments, demand rugged, reliable equipment which can operate at maximum efficiency – whatever the location.



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STONEHAVEN ENGINEERING LTD

Stonehaven Engineering have been acknowledged leaders in this field for almost two decades. We offer a range of tailor-made, custom-built products for the defence and other industries to meet the most challenging specifications – from container-built laboratories for Antarctica to rapid-deployment field camp, ablutions, laundries, medical support and accommodation for battlefield support in the desert.

Stonehaven is a flexible, progressive company. Our skills in the design, construction and fit out of rugged modular containers for the defence industry can be applied to many other projects, however large or small.

Our success has grown from our ability to produce the highest quality products at competitive prices. Our reputation is further enhanced by our ability to deliver to schedule, with rapid reaction times. With many projects, we measure design, production and delivery times in hours and days – not weeks and months.

Every project we handle is tackled with the same high degree of efficiency, innovation and flexibility. Every client receives the support they seek in finding the right solutions. This is the hallmark of our leadership in our field of engineering.

About Stonehaven Engineering Limited

Stonehaven Engineering Limited was founded in 1991. The Scottish Registered, private limited company was created to meet the requirements for a flexible, specialist service to the defence and other industries. One of our very first projects was to design and construct refrigerated containers

for use at the British Army camp at Belize airport in Central America.

These were specifically designed and built as a temporary freezer/chill store to meet the extremes of temperature found in Central America. It is a measure of the unit's robustness that the stores are still in use today – almost twenty years after it was delivered and installed as a temporary stop-gap.

This led to the British Antarctic Survey's choice of Stonehaven Engineering as the best company to provide custom-built laboratories which could be easily shipped and installed at their site in some of the most extreme conditions to be found anywhere in the world.

We have built on these early successes, tackling a very wide range of projects and successfully achieving some of the most demanding specifications and design, build and fit out delivery schedules.

Stonehaven Military Modular Containers

Our acknowledged expertise in the design and construction of tailor-made military modular containers has made Stonehaven Engineering the first choice for a range of clients including the Ministry of Defence.

These containers are designed in close co-operation with both our clients and component suppliers, working as a team to meet the highest specifications across a very wide number of applications in both hazardous and safe areas.

These highly versatile, easily deployable ISO and varied size containers can be fitted out for the

widest possible spectrum of uses across the globe.

Typical applications include:
Military Accommodation Units,
Containers and Shelters

Accommodation shelter with on board power generation, mapping area, sleeping and eating facilities.

Temperature Controlled Refrigeration / Freezer Containers

Temperature controlled dual function refrigeration / freezer containers with multi-use adaptable stowage racking and pallet lashing, rugged military use, operable via on-board plant engine or alternative electric operation as deployment demands.

Modular Linked Containerised Complex

Modular linked containerised complex of crew room, command post briefing area with kitchen, toilet facilities and changing area.

Temperature Controlled Hazardous Goods Storage

Hazardous goods storage area with temperature controlled conditioning and monitoring / charting system, within a 20ft ISO footprint with ramp access, internal bunding and chemical resistant materials.



Temperature Controlled Hazardous Goods Storage

Other Typical applications include:

- Laboratories
- Medical units
- Showers and toilets
- Kitchens
- Refrigeration units, chill and freeze
- Ambient units
- Laundries
- Locker rooms
- Sleeping accommodation
- Battery charging facilities
- Transportable parts stores
- Plant rooms
- Safe shelters
- Radar and communications

offices

- Command posts
- Recreation and mess rooms

These are just some examples – it is not an exhaustive list. We are constantly called in to design and build containers and other assemblies like tented, rapid erection ablution facilities for temporary deployment for different uses and our design team are always on hand to face fresh challenges – and always find the right solution. At the right price and on time.

"We engineer to suit every individual application, meet each client's specifications and provide solutions for each project's requirements – however demanding."



Engineering Skills in Field Camp and Temporary Deployable Accommodation – TDA.

The Stonehaven Engineering team has all the necessary engineering and project management skills to see complex camp infrastructure contracts through from start to finish – down to the smallest detail. Our TDA products are currently in service in many regions across the world, including Bosnia and Kosova, Iraq and other Middle East countries and Afghanistan.

Products & Applications Include:

- Purpose-built ISO containers
- Military shelters
- Integrated hook-lift container systems
- Expeditionary camp infrastructure
- High specification mobile units

Fully built-in services available to provide:

- Ablutions
- Catering
- Laundry
- Washing
- Ambient storage
- Frozen storage
- Water and power distribution

On site testing

The rough-and-tumble of action in the defence field and extreme environments leaves no room for weaknesses in equipment. We know that from years of experience and carry out the most rigorous testing programmes and procedures to ensure that our equipment can be installed rapidly and works efficiently and effectively – whatever the location and whatever the scenario.

Every component and unit we produce undergoes the fullest range of tests at Stonehaven before commissioning, despatch and delivery.

And, for peace of mind, a full test manual is provided with every one of our products so that the customer can carry out their own tests following identical procedures to ensure that the unit will do its job as and when it is needed.

Military Rapid Deployment Shelter Design Expertise

Our design team use the latest CAD systems at the design stage to ensure that every product will meet its individual requirements. It's a completely flexible service which can tackle projects ranging from rapid deployment shelters for desert conditions to converting a surplus fuel tanker into a mobile police command post.

The designs take into account a very wide range of factors governing the unit's use including ambience, temperature, humidity, weather conditions, air conditioning, heating, internal drainage and the storage with recycling of water.

Containers can be designed for transport by sea, land or air, with the option of fixed, mobile or re-locatable usage. Versatility is built into many of our product designs so that the same unit can be re-located from high temperature environments like the Middle East to the Falkland Islands with no modification.

Designs also take into account local power sources to ensure that once the unit is set up on location, it can interface with the defined power source immediately.

Defence is a dynamic, rapidly changing industry, and our innovative approach makes it possible for us to respond to these changes swiftly. For example, we have met the growing demand for DROPS – Demountable Rack Off-loading Pick-up Systems products - and produced containers for this application.

These are specifically designed for rapid deployment so they can be loaded and unloaded in a matter of minutes and put into service immediately. A number of Stonehaven DROPS units have seen service in the recent Iraq conflict and the desert operations which followed.

The Best Components

We source the best available components with a proven record of reliability. These range from major



items like refrigeration units and heavy-duty washing machines to the smallest details – down to the best taps and showerheads for use in shower facilities for combat conditions. Tenders include comprehensive spares packages.

By choosing and working with the best suppliers, we ensure that clients benefit from our suppliers' worldwide product support networks.

Meeting the Specification

Our containers and other assemblies can be designed to meet the highest specification standards of fire ratings, acoustic levels, radio frequency

interference (RFI), and pressurised for protection against nuclear, biological and chemical contaminations (NBC).

On Site Construction

Each container or assembly is constructed and fitted out at our Stonehaven facility. The construction techniques and materials used for the main 'outer shell' of our containers can vary from mild steel, stainless steel, aluminium skin, armour plating, glass reinforced plastic, composite or sandwich panels. All units are generally constructed to withstand the varying climatic and environmental conditions which can occur in multi-location operations.



MEET US AT: CBRNE CONVERGENCE
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NEW

**DETK AND LETK.
THE POWER OF SIMPLICITY.**



Threat Detection Technologies

DETK (Dry Explosive Test Kit)

DETK is a single use colorimetric-based test kit for the presumptive identification of military grade explosives and precursors used in the manufacture of improvised explosives.



Threat Detection Technologies

LETK (Liquid Explosive Test kit)

LETK is an colorimetric-based test kit for detecting liquid explosive threats that meets the ECAC performance requirements of Standard 2 for equipment for the screening of Liquids, Aerosols, and Gels.

Contact: info@bbidetection.com

Go to: www.bbidetection.com

Both DETK and LETK offer:

- Wide range of explosive threat detection
- Rapid results
- Low training burden
- No power requirements
- Kits contain no glass vials or hazardous liquids



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PlastPackDefence

PlastPack Defence PPD

Development and production of lightweight packaging solutions

PPD is an innovative Danish company, serving the defence industry and specializing in the development and production of lightweight packaging solutions for military transportation, handling and storage of hazardous, high valuable and fragile goods according to military requirements.

PPD is active within two main areas:

Ammunition boxes, Lightweight plastic boxes/cases /containers for:

- Ammunition (small, medium and large-arms)
- Hunting
- Fishing

- General Outdoor Purposes
- Pyrotechnics
- Explosives
- Countermeasures, Flares, etc...
- Weapons, etc...

Packaging solutions for Transportation, Handling and Storage of:

- Electronics
- IT equipment
- EO equipment
- Radar systems
- Spare parts
- Mechanical parts
- Aerospace parts, etc.

All products are tested according to relevant environmental standards such as, but not limited to: MIL-STD, STANAG / MOPI, DEF-STAN and the UN ADR convention.

Light Weight Ammunition Cases (LWAC®)

Logistical and Tactical Lightweight Plastic Ammunition cases for: Ammunition (small, medium and large-arms), Pyrotechnics, Explosives, Countermeasures, Flares, and Weapons, etc...

PPD's new innovative Light Weight Ammunition Cases (LWAC®) are based on PPD's newly patented design ideas and PPD's specially developed raw-material resins. PPD Light Weight Ammunition Cases (LWAC®) are designed as a full drop-in replacement for existing systems, and accordingly to all military requirements and standards.

The development and design has been performed in close co-operation with end-users and the ammunition industry.

The advantages are numerous however, the most important is the direct cost savings over the full life cycle due to:

- **Reduced weight, more than 68% lower than existing steel boxes. E.g. Packaging weight for 1.000.000 rounds 12.7(0.50 cal.) will be reduced by 16,5 tons!**
- **Improved stacking capability which allowing cross stacking both 90° and vertical stacking**
- **Improved thermal capability, with reduced heat transfer**
- **Prepared for built-in RFID tags for tracking and controlling**
- **Low noise during handling and contact with steel surfaces**
- **No risk of sparks**
- **Fully compatible with existing steel boxes**
- **Tested according to all applicable MIL-STD, STANAG / MOPI and DEF-STAN requirements**



- **UN- Approved, UN 4H2/21.5/S/15/DK/ETi-15003/PPD regulations (ADR convention) for safe land, air and sea transportation of hazardous goods**
- **Fully recyclable / reusable**
- **Multiple color choice, e.g. color code according to ammunition type.**

Shipping and Storage Containers

Packaging solutions for Transportation, Handling and Storage of: Electronics, IT equipment's, EO Equipment's, Radar systems, Spare parts, Aerospace parts, Mechanical parts etc...

Complete range from 5.5–400+ Litres (60+ different models)

PPD is a specialist company supplying packaging equipment for transportation, handling and storage of goods accordingly to defence standards, such as MIL-STD 20-73, STANAG / MOPI 4280 and DEF-STAN 81-41.

PPD Packaging Concept

PPD has developed a packaging concept that can serve the defence industry with the correct type of packaging for every need.

PPD's concept is based on durable and ruggedized plastic cases and containers with options for foam inserts. The concept covers both one-way shipment of light and controlled transports, and fully ruggedized round trip shipment under extreme conditions, and up to 20 years of storage.

PPD is the exclusive Nordic representative of ZERO's product line:

- **TRANSITAINERS**
- **VAL-AN CASES**
- **MODULAR CONTAINERS**

Meets DEF-STAN packaging level P, N and J, MIL-STD level A and B, STANAG / MOPI level 1, 2, 3 and 4.

Contact PPD for an informal discussion about how we can best meet your needs.

VHF & UHF ground-to-air communication solutions

NORTHROP GRUMMAN

ATC Communication Systems

Northrop Grumman Park Air Systems is the world's leading provider of VHF and UHF ground-to-air communication solutions. Park Air has a full service offering in civil and defence environments.

Northrop Grumman Park Air Systems - Park Air Building
ATC Communication Systems - Factory

Dedicated research and design teams guarantee Park Air communication solutions are tailored to the individual customer's requirements ensuring flexible and dependable performance.

An installed base across over 180 countries gives Park Air Systems a global presence and local expertise.



Civil Ground-to-air Communication Systems

Park Air is dedicated to the provision of ground-to-air communications. Over 30,000 radios are deployed around the globe, delivering dependable communication with aircraft the world over.

Park Air T6 features and benefits:

Reduced whole life costs. Efficiency is increased and power consumption is decreased, reducing the initial and ongoing costs of power and air conditioning. The combination of up to a ten-year service interval and fifteen-year service lifetime also brings down cost of ownership.

Better environmental performance. The reduced power consumption is a result of our ongoing work to improve environmental standards. No materials specified in the Restriction of Hazardous Substances (RoHS 2) directive are used in the manufacture of the T6 Radio.

Class-leading RF performance. A step-change improvement in the radio RF design has resulted in better interface and co-site performance in the increasingly crowded radio spectrum, reducing the need for external filtering and, in many cases, eliminating it completely.

Flexible main/standby features. These include integral RF/line changeover and software programmable interfaces for controlling external changeover units. Independent AC and DC power options provide additional redundancy.



Advanced temperature control. Digital power management and computer controlled airflow ensure that the radios run cool. This extends component life and reduces the risk of failures.

Intelligent built-in-test. The T6 Radio continually monitors its own environment and performance. If any issues are detected, the radio enters a 'reduced service' state, decreasing the power output and alerting the operator with diagnostic information before failure occurs.

Automatic simultaneous call transmission detection. The Park Air SCT technology alerts the operator to the possibility of call blocking and the loss of vital communications between pilot and the ground.

Our most secure radio ever. In addition to front panel screen and interface port locks, there is also support for the latest secure web protocols. These include SNMP v3 with enhanced encryption and authentication, and a secure webserver interface with HTTPS and IPv6/IPv4 compliance.

Designed for future networks and systems. The crucial parameters of network connectivity, environmental sustainability and long service life have all been central to design and specification decisions.

Three independently addressable IP ports are available: two on the rear for autonomous network connectivity and one on the front for easy browser access to the built-in maintenance web-server.

Software defined waveforms. As well as traditional AM-Voice, a number of data waveform options are also available, anticipating the continued growth in data-link services. These include ACARS, VDL-M2 and Wideband AM Data.

Remote firmware upgrade. The ability to update radio firmware from a remote location reduces the need for radio site visits. Connection to an IP network is all that's required.

IPv6 core capability. IP connectivity, both for VoIP audio and 'monitor and control' data is based on IPv6 (and also works on IPv4), ensuring compatibility with latest-generation networks and systems.

The T6 Radio is half the size and weight of previous models. You can house more channels in your available cabinet space. A innovative mounting system means that no tools are required for cabinet installation.

Intuitive user interface. A high resolution OLED graphical display is supplemented by a main rotary input control, context-specific soft buttons and indicator icons. There are visual indications of radio activity to accompany the audio.

Loudspeaker to monitor voice transmissions. All T6 Radio models (transmitter, receiver and transceiver) provide a loudspeaker so that voice transmissions can be monitored locally when necessary.

NORTHROP GRUMMAN

Military VHF/UHF Radios

M7 VHF/UHF range of radios is designed for defence forces fulfilling a comprehensive range of demanding communication needs in the fixed, maritime, deployable applications.

The software defined architecture of the M7 provides voice, data, secure speech, electronic protection measures (EPM) and a wide range of ancillary equipment to facilitate system integration.

Park Air M7 features:

- High RF power: 50W AM, 100W FM
- Multimode software defined radio
- Electronic protection measures (EPM) including NATO: HaveQuick and Saturn, Non-NATO Talon
- Modular construction
- Continuous AM and FM coverage from 100MHz - 400MHz
- Integrated Power Supply
- Optimised auto-tune filters and multi-couplers
- Rugged, fit-for-purpose design with interface to military-type hardware
- Integrated encryption is available

Control, Monitoring and Ancillaries

Park Air Systems offer an extensive range of monitor, control and ancillary products, including:

- **MARC Server- An advance Remote Control and Monitoring System (RCMS) for ATC applications and can be used in both airport and wide area applications**

Training and Services

- **Modular courses with building blocks– the right multi-media course for every level of knowledge, in our Park Air Academy – a new purpose-built facility, which allows for comfortable and uninterrupted learning in a pleasant environment.**
- **Park Air Customer Portal - Easy, around-the-clock password protected access on the webpage for all your enquiries from project start to finish and beyond for ongoing support.**

For CBRN protective textiles, trust the leaders in the field

Chemviron Carbon is the world's leading manufacturer of superior 100% activated carbon cloth (ACC) - the vital CBRN protective layer in clothing for defence and security personnel worldwide.

Key advantages and applications of Chemviron Carbon ACC include:

- Lightweight and breathable for very low physiological burden
- Very rapid adsorption of a wide range of CBRN molecules
- Suitable for protective clothing, first responder masks and escape masks
- Used in CBRN filtration and decontamination wipes



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Chemviron

For further information please contact Chemviron Carbon today

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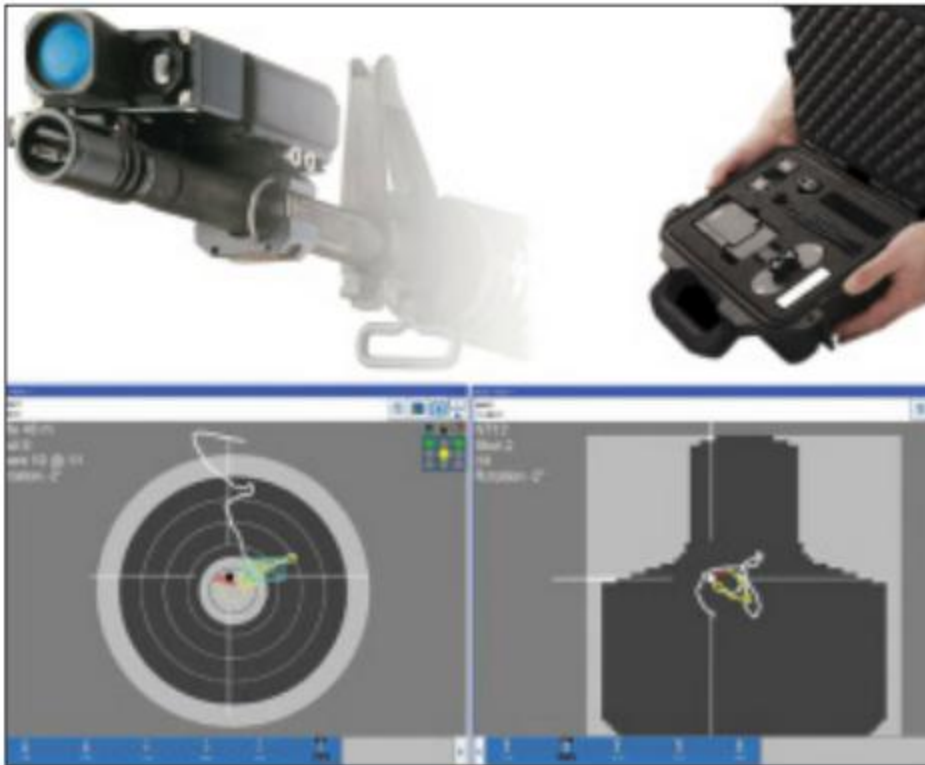
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Noptel

Development & manufacture of innovative applied optoelectronic solutions

Founded in Oulu (Finland) in 1982, the NOPTEL Company specializes in the development and manufacture of innovative applied optoelectronic solutions. Noptel's product line encompasses two major areas: Laser rangefinders and optical alignment and displacement measurement products.





NOPTEL employs thirty persons and has been a subsidiary of the Belgium-based FN HERSTAL since 2011. Today, NOPTEL's expertise as a key player in developing military qualified and military proven optoelectronic applications is well established.

Noptel Shooting Training Device

The Noptel Expert is an optical shooting training device for shooting skills training. It is used indoors with scaled-down targets and simulated shooting distances, or at shooting range with life-size targets and longer shooting distances. It measures rifle movement, detects the shot, shows the location of both the hit and miss, and analyses the shooter's performance. The Expert software shows the rifle movement during the aiming and triggering, and the score right after the shot.



- **Fully portable: training anywhere and anytime**
- **Ready to use in minutes**
- **Mounting to most rifles**
- **Immediate shot analysis and feedback by Noptel Expert software**
- **Wireless operation**
- **Rugged Construction, indoor and outdoor use**
- **Training at simulated distances**
- **Training at long distances (shooting range)**
- **Always safe: no life ammunition**
- **Noptel Long Distance Range Finding**

The compact, eye safe and highly integrated laser rangefinders can be used as OEM products in different applications.

- **Airborne, land, maritime and naval systems**
- **Vehicle mounted reconnaissance systems**
- **Observation and surveillance systems**
- **Handheld targeting systems**
- **Future soldier program equipment**
- **Fire control systems**
- **Mobile range finding**
- **Location measurement**

Noptel rangefinders can be delivered as open modules or in nitrogen-filled, watertight casings enabling flawless operation under harsh environmental conditions. The robust hand held devices measure distances beyond 10 km.

www.noptel.fi

Northrop Grumman to Provide Air-to-Ground Voice and Data Capability for Airline and Civil Aviation Communications.

Northrop Grumman Corporation's (NYSE: NOC) U.K.-based air traffic management subsidiary, Park Air Systems, is providing next-generation VHF radios to Rockwell Collins for its air-to-ground voice and data link services supplied to airlines and air navigation service providers.

Under the contract, Park Air will provide its latest T6 radio from the Sapphire family of products for Rockwell Collins' growing air-to-ground voice and data link network that delivers airline and civil aviation communications worldwide.

The Park Air T6 radio supports the two key data communication standards – aircraft communications addressing and reporting system, and VHF Data Link Mode 2. This will enable the communication of aeronautical operational control messages and ATC data link programmes such as Controller Pilot Data Link Communication.

These data links form a critical part of the FAA's Data Communications Programme, under the NextGen initiative, which seeks to reduce delays, improve controller and pilot efficiency, and enhance safety through an advanced data communications infrastructure.

"Our latest T6 radio builds upon many years of experience. It is now one of the most advanced products of its type in the world, with an installed base of users growing significantly each day," said Danny Milligan,

managing director, Northrop Grumman Park Air Systems.

The new T6 radio delivers industry leading performance while also being smaller and lighter than comparable products, allowing Rockwell Collins to install multiple radio channels in half the space of their current radio.

"Rockwell Collins is proactively addressing the growth in air traffic and more data being generated by modern aircraft by expanding the number of VHF ground stations in our network," said Chris Mackey, director of Aviation Datalink Services. **"These radios will help support that initiative by providing additional network capacity for our airline customers."**

The T6 radio is designed to meet stringent environmental demands which, as an added benefit, reduces

life-cycle operating costs. Significantly lower power consumption not only cuts electricity usage but also allows the use of lower cost on-site power systems. The radio is designed to contain no hazardous material, meaning lower end-of-life disposal costs.

Northrop Grumman's Park Air Systems supplies communication systems for airspace operations worldwide. Park Air radios can be found in airports in 200 countries around the world.

Northrop Grumman is a leading global security company providing innovative systems, products and solutions in autonomous systems, cyber, C4ISR, strike, and logistics and modernization to customers worldwide. Please visit news.northropgrumman.com and follow us on Twitter, @NGCNews, for more information.

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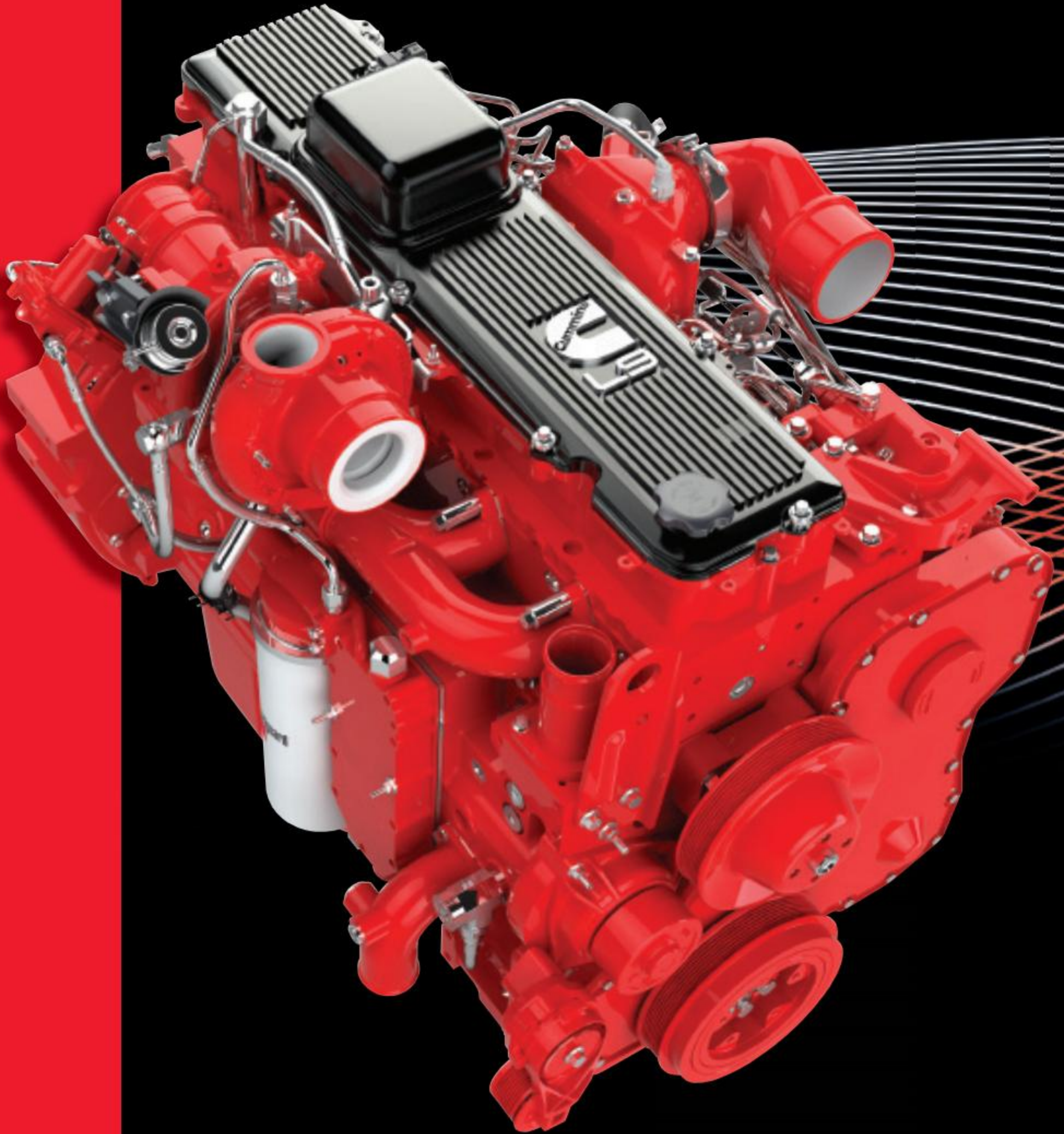
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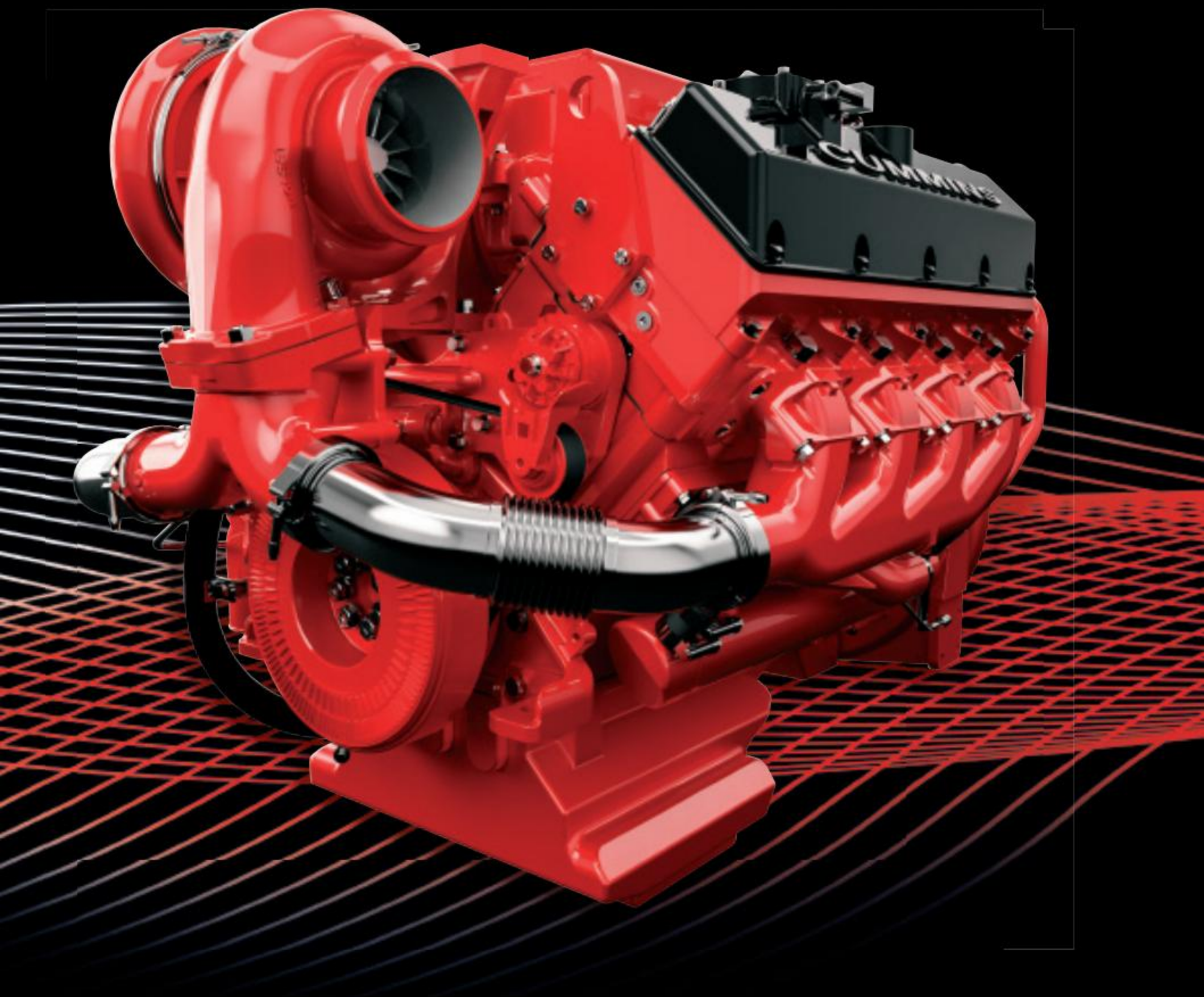
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Flexzorb™



Defence

Flexzorb™ Activated Carbon Cloth for the Defence Sector

Flexzorb™. The flexible, lightweight protective textile.

Flexzorb™ is widely used by many of the world's leading defence vendors, making us the leading provider of activated carbon cloth for defence applications.

Lightweight and breathable, Flexzorb is used in a range of defence applications, including:

- **Personal protective equipment (PPE)**, as a lightweight, protective layer against CBRN agents
- **CBRN filtration media**
- **Decontamination wipes.**

Consisting purely of activated carbon, Flexzorb is lighter and adsorbs more quickly and effectively than other, carbon-loaded materials, which contain less activated carbon.

Customised to your needs

Flexzorb is available in woven and knitted formats, which have different attributes appropriate to specific applications:



- **Flexzorb knitted cloth** is a stretchable fabric and well suited to applications demanding high freedom of movement.



- **Flexzorb woven cloth** offers higher air permeability, especially suitable for warmer climates.

Flexzorb can also be:

- impregnated with various chemistries for added sensitivity to adsorbing inorganic molecules
- treated to repel liquid agent, water and oil, and to prevent sweat affecting performance
- laminated to custom backing textiles for specific applications
- produced in pre-cut shapes and different widths.

Flexzorb acts as an extremely effective high-purity filter, separation method, an antimicrobial, or a protective layer. Key to its very high adsorption* capacity and rapid adsorption speed are:

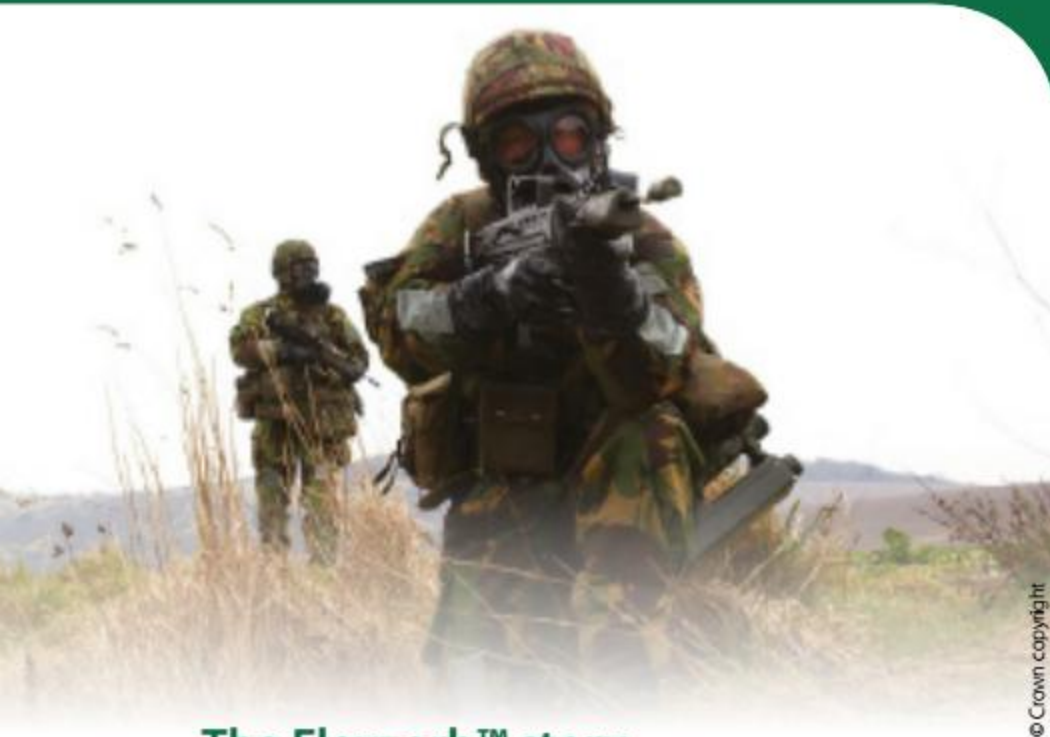
- **Electrostatic forces** which attract molecules from various gases, liquids and other environments such as clinical wounds, adsorbing them within a network of micropores..
- **A highly microporous structure.** This means that Flexzorb has a very large surface area. To put this in perspective, just 1g of Flexzorb has a surface area of around half the size of a soccer pitch.

The Flexzorb™ story

Flexzorb™ has its origins in the first activated carbon cloth (ACC), developed in the 1970s. It was initially used - and still is to this day - as a protective layer in military clothing and masks against chemical, biological, radioactive and nuclear (CBRN) agents.

Today, Flexzorb is the world's leading superior 100% activated carbon cloth, used globally in a wide range of applications by defence, medical and industrial sectors. These range from antimicrobial, anti-odour wound dressings to purification filters, among many others.

*Adsorption is the process of attracting molecules on to a surface, rather than into something. It is analogous to iron filings being attracted on to a magnet.



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Flexzorb™ Defence Applications

CBRN protection. Frontline effectiveness with comfort.

Deployed by defence and security forces worldwide, Flexzorb™ provides a lightweight, protective layer against CBRN agents in PPE, including combat suits, first responder suits and escape masks. This is how Flexzorb works:

- **CBRN agents trapped** by electrostatic forces that draw and trap CBRN gas, vapour and liquid molecules on its surface
- **Air permeability** enhances effectiveness and comfort
- **Superior comfort** thanks to low burden, lightweight Flexzorb 100% activated carbon cloth layer which keeps overall garment weight low.

We produce and supply Flexzorb in a variety of sizes and specifications. Flexzorb can be treated for added protection against liquid agent and to prevent human sweat interfering with its performance. Also, laminated composites are available to meet specific application needs.



Contact us

To find out more about Flexzorb™ or to discuss your specific defence applications, please contact us and we will be happy to help.

Tel: +44 (0) 191 584 6962 Fax: +44 (0) 191 584 6793
Email: info@calgoncarbon.com

Chemviron Cloth Division, Rainton Bridge Industrial Estate,
Houghton-le-Spring, Tyne & Wear DH4 5PP, UK

Chemviron is the European operation of  Calgon Carbon

Other CBRN defence applications

As well as PPE, Flexzorb™ can be used in other CBRN defence applications:

- **CBRN filtration media**, offering protection against CBRN agents at higher airflow rates than other media
- **CBRN decontamination wipes**, mitts and pads, for scratch-free cleaning - ideal for glass and sensitive equipment. They also prevent spreading or off-gassing of harmful agents, for easier disposal.

Other applications

Further uses of Flexzorb™ in military theatres of operation include:

- **Antimicrobial wound dressings for military use**, which are easy to apply, conformable to the body's contours, control odour and promote accelerated healing
- **Missile decoy media**, using the thermal properties of activated carbon
- **Phosphine gas adsorption media**, for capturing fugitive emissions from munitions.

About Chemviron Cloth Division

Flexzorb™ is produced in the UK by Chemviron Cloth Division, the world's leading manufacturer of 100% activated carbon cloth. Chemviron is the European operation of Calgon Carbon, the world leader in the production and development of activated carbon in granular and cloth forms. At our Innovation Hub, we continually research and develop new attributes of Flexzorb for ever-widening applications.



www.chemvironcarbon.com



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