

# MILITARY SYSTEMS

TECHNOLOGY

## EOD SOLUTIONS LTD

Complex Problems Simple Solutions

## SAVOX COMMUNICATIONS LTD

Professional Radio Accessories and  
Communications Equipment

## STEATITE LIMITED

Rugged Mobile Computing Platforms  
and Integrated Battery Solutions



**PLUS...**

**BREAKING NEWS FROM...**

TRELLCHEM  
BCB INTERNATIONAL LTD  
BRÜEL & KJÆR  
RUBB BUILDINGS LTD  
RUD CHAINS LTD  
SOLDIER SURVIVABILITY

Image Courtesy of Steatite Limited

**SHOWTRAX INTERNATIONAL'S**

# **TEAR-OFF WINDSCREEN FILM**

**Protecting expensive windshields and saving millions of pounds**



Tear-Off layered Windscreen Protection Film is now used extensively throughout the world to protect Military Vehicles from screen damage. It has already saved millions of pounds in replacement windshields and 'downtime'.

Available in single layer, two layer or four layer pre-laminated templated film.

The film can be installed in minutes both inside and outside the vehicle and is designed to stop stone chips and cracks from occurring. It also stops screens from becoming delaminated in hot, bright conditions. Showtrax International supply boxed kits of everything that is required to apply the film, with full instructions. Each piece of film has been templated to fit the screen.

The world wide patented multi-layered film is optically clear and is the same as supplied by us to the motorsport world for protecting both screens and helmet visors.

To find out more please go to  
<http://showtrax.net/products/military-tear-offs>

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## Welcome to this edition of the Military Systems & Technology newsletter.

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.

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# COMPLEX PROBLEMS SIMPLE SOLUTIONS

EOD Solutions Ltd is a company specifically created to undertake ammunition and weapons stockpile destruction. The company employs retired Ammunition Technical Officers and Ammunition Technicians trained at the Army School of Ammunition in the UK to undertake the logistical destruction of ammunition. Understanding how ammunition and weapons function is a prime consideration when dealing with the destruction and reverse engineering of these dangerous items.

EOD Solutions Ltd has undertaken reverse engineering projects where the company teamed with factories in country or other organisations that allowed the work to be undertaken in a safe and secure manner. Environmental issues are now of high importance when disposing of ammunition and EOD Solutions Ltd is working with environmentalists in this area.

## Demilitarisation in Afghanistan

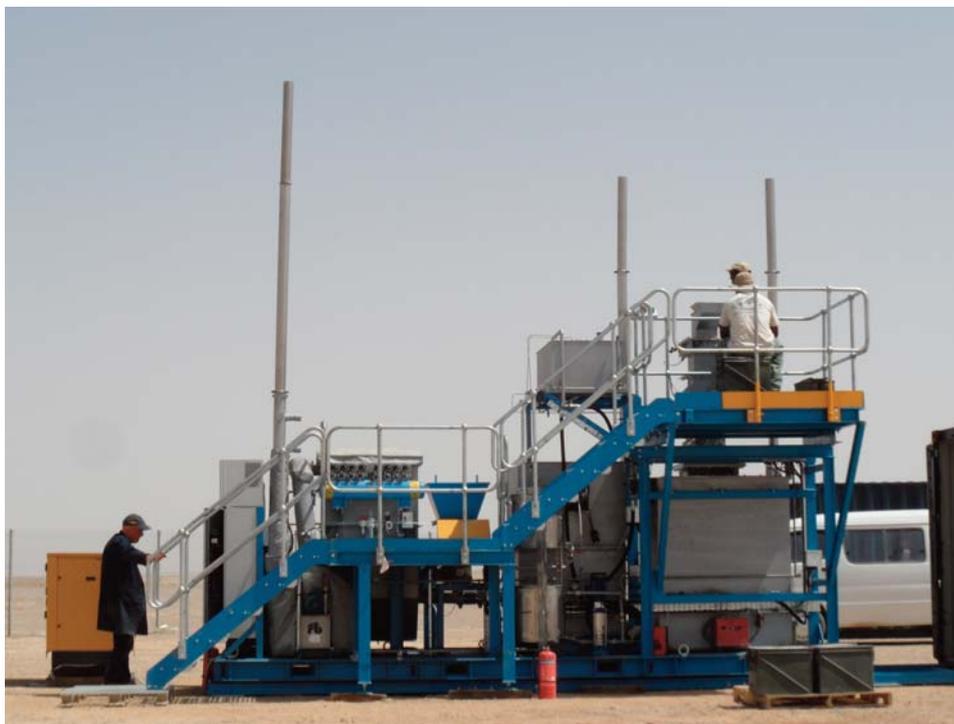
## Transportable Ammunition Destruction System (TRADS)

The installation of the Transportable Ammunition Destruction System (TRADS) at Camp Bastion under contract to DESWpns DGM to destroy small arms ammunition in an environmentally benign manner. The TRADS incinerates up to 45000 rounds per hour depending on the type of ammunition which equates to one ton all up weight of ammunition per hour on a normal working day and was designed



and built by the company in association with Caldo Engineering with whom the company has a long and trusted relationship.

The TRADS (which is built into a forty foot container) comes complete with all infrastructures so that the user can place the system on the ground and within three days have the system working destroying ammunition. The system has wind down legs as well as lifting points that enable the system to be jacked up from the delivery vehicle without the need for a crane or it can be craned if the user requires. This is especially desirable in the present position in Afghanistan where the system is a standalone operation outside the ammunition storage facility in an area where there is no infrastructure. See video EOD Solutions Ltd is currently building a smaller batch type furnace for EOD Technologies in the United States for deployment in Afghanistan in support of US troops in other areas of the province. The picture shows the build nearing completion ready to ship to Afghanistan.



## Explosion Aftermath Clearance

The company is currently working with the International Trust Fund (ITF) undertaking a clearance operation in Gerdec, Albania where four explosions at an ammunition unpacking facility killed 26 people and injured hundreds more.

Over two hundred houses were damaged or had to be demolished. In all a total of 90 acres of land is to be remediated before being returned to the Government of Albania. This is a difficult and demanding process as it is in the centre of a residential area. This limits operations considerably due to the proximity of the local population.

This year will see the conclusion of this task that has made EOD Solutions Ltd well equipped to undertake future operations of this kind. The pictures show the problems and the successes EOD Solutions Ltd has accomplished over the four year clearance process.

## Weapons Destruction

EOD Solutions Ltd has undertaken weapons destruction programmes that reduce the weapons to scrap to prevent use or sale to organisations that lean towards terrorism and criminal activities. So far 175000 have been destroyed in Albania and another 10000 in Senegal by the company. The weapons are destroyed using methods that totally destroy any part of the weapon from being used for its intended purpose.

## Quality, Safety and the Environment

EOD Solutions Ltd has strict safety quality and environmental guidelines that are in line with US and UK governmental regulations. These guidelines are employed irrespective of which country operations are undertaken. Demilitarisation procedures are also allied to the NATO and UK regulations regarding ammunition and weapons safety and disposal.



# PROFESSIONAL RADIO ACCESSORIES AND COMMUNICATIONS EQUIPMENT



Savox Communications is focused on providing professional radio accessories and communications equipment that improves the performance of individuals working in highly demanding environments around the globe.

Savox Communications has a unique combination of in-house design, engineering and manufacturing resources which in addition to its own range of branded products, it applies to making radio accessory products for many of the leading Radio and Personal Protection Equipment manufacturers in the world. Serving the Police, Security, Fire, Search, Rescue, Defence, Maritime and Industrial sectors, Savox caters for the needs of the total spectrum of professional radio user. With offices in the United Kingdom, Germany, France, Finland, Luxembourg,

USA, and a network of experienced distributors, Savox provides global support to you and your customers, wherever you are.

## Military Intercoms THE SAVOX 'IMP' IP BASED MOBILE PLATFORM INTERCOM

'ImP' from Savox is the next generation military platform intercom system offering a lightweight IP based digital intercom solution where the man is the communication interface. ImP's unique features include the Personal Communications Unit (PCU) user interface. This is a lightweight and ergonomic voice prompted unit providing control of intercom functions and instant access to 2 tactical radios.

### FEATURES

- Simple and Intuitive to use
- Easily scalable for multi user/radio configurations
- Full duplex wireless extension option
- High speed data transfer option
- Compatible with a variety of headset options including ANR
- Easy to install and maintain



## Military Radio Controllers THE URIC UNIVERSAL RADIO CONTROLLER

With voice guided menu controls, respirator voice projection mode and an interface to smart mobile phones, The Universal Radio Interface Controller (URIC) from Savox is a tactical speaker microphone which allows multi radio & intercom connectivity. Fitted with a variety of radio controls and in ear headset connectivity (HC150-300). The C-C633 is a very versatile tactical speaker microphone with an optional wireless controller capability.



## FEATURES

- Up to 2 radio and intercom connectivity
- Supports dual net radio connectivity and a further tactical radio inputs
- Can be operated with SAVOX headsets, including in ear headsets
- Built in 'SICR' - system (SAVOX Intelligent Cable Recognition System) which automatically configures radio and headset input/outputs
- Integrated digital processor with software upgradable capability
- Rugged and reliable operation
- URIC to URIC connection providing local intercom capability
- Connection to mobile phones

## Military Noise Protection Headsets

### THE SAVOX HP150 EARPAC IN EAR HEADSET WITH NOISE PROTECTION AND BOOM MICROPHONE

An in ear hearing protection headset with small boom microphone for improved radio speech intelligibility, impulse (gun fire) hearing protection and ambient peripheral awareness. Ideal for tactical firearms use and users operating around medium noise vehicles.

## FEATURES

- Slim line boom with noise cancelling boom Mic
- Dual radio speakers for binaural radio inputs
- Foam and custom moulded eartips options
- Dual peripheral awareness microphones and speakers
- Kelvar lined cable for added strength and durability
- Compatible with most military tactical radios

## The Savox HP300 EarPAC in Ear Headset with Noise Protection

An in ear hearing protection headset with impulse (gun fire) hearing protection, fitted with an in ear radio microphone to maintain peripheral awareness. Ideal for tactical firearms use.



## FEATURES

- In ear radio microphone for radio speech
- Dual radio speakers for binaural radio inputs
- Dual peripheral awareness microphones and speakers
- Kelvar lined cable for added strength and durability
- Compatible with most military tactical radios

## Military Tactical Headsets

### THE SAVOX HP200 ASSAULT COMMUNICATION HEADSET

A headset with hearing protection, peripheral awareness and ambient talk through. Designed for harsh environments including driving rain and also available in a fully waterproof variant.

## FEATURES

- Provides optimum protection with high amplification electronic talk through
  - Can be worn with most ballistic helmets
  - Both earmuffs are shaped to suit both right-handed and left-handed shooters
  - Boom Mic versions available, which can be fitted on left or right earcup
  - Two separate, well-shielded microphones for optimum stereo effect and spatial awareness
  - High amplification and natural sound reproduction without "chopping"
  - Aux input for connecting external audio sources
  - Watertight battery compartment
- The Savox HC700D Dual Sided Headset with Boom Microphone

A general purpose lightweight dual sided tactical headset with boom microphone.

## FEATURES

- Dual earphones
- Flexible boom microphone
- User replaceable ear cushions
- Rugged and reliable

## THE SAVOX HC700 SINGLE SIDED LIGHTWEIGHT TACTICAL HEADSET

A general purpose lightweight single sided tactical headset with boom microphone.

## FEATURES

- Single earphone
- Flexible boom microphone
- User replaceable ear cushions
- Rugged and reliable
- Can be fitted to SAVOX PTT's

## Military CBRNe Communications Equipment

Suitable for Crowd control, HazMat, Decontamination, Military, Police and Medical teams - Savox has a range of 'in suit' and mask communication accessory solutions to ensure the safety of your people and the success of your operation.

Savox manufacture a variety of rugged voice communication accessories that can be worn in conjunction with respirators and encapsulated suits. These include, remote speaker mic, throat microphones and bone microphones, lightweight headsets and voice amplifiers to name but a few. Savox communication accessories are rugged and designed to operate in extreme situations while providing clear communication that saves time and could save lives.

## The Benefits

- Provide clear communication when used under masks and respirators
  - Ergonomic design
  - Rugged design for use in the most demanding environments
  - Modular 'Plug and Play' design
  - IP rated and Mil Spec products are available
  - Intrinsically safe versions available
- Savox accessories work with all the leading radios used by the emergency services

For more information – visit [www.savox.com](http://www.savox.com)



# STEATITE

Steatite Limited



## RUGGED MOBILE COMPUTING PLATFORMS AND INTEGRATED BATTERY SOLUTIONS

Steatite are a market leader in the supply of Industrial and Rugged Mobile computing platforms and integrated Battery solutions for customers who demand high performance and reliability in mission critical and environmentally challenging situations.

As a Windows Embedded gold partner with ISO 9001: 2008 certification and working within the SC21 framework, Steatite has a strong engineering and

design capability with an in depth knowledge of CE, UK DEF STAN, American MIL-STD, NATO STANAG and UK, European and American TEMPEST requirements. This allows Steatite to offer the additional services of prototype design and development (COTS modification), custom enclosure design, Post Design Services (PDS), pre-compliance testing and through life support (15+ year support contacts).

### Rugged Mobile Military Computers

Steatite specialises in Military Rugged Mobile and handheld computing solutions. This capability covers a basic hardware platform solution to a fully integrated installation, supported by custom software design and build. Steatite supplies a range of Military-Off-The Shelf (MOTS) and Commercial-Off-The-Shelf (COTS) products into defence and security markets across Europe. These include rugged laptop computers, rugged tablets, rugged workstations and rugged pda's.

Over the last 25 years Steatite has developed a clear understanding of demanding operational environments, user requirements and procurement cycles. This knowledge has enabled Steatite to successfully design, manufacture and deliver hardware solutions into applications like Testing Equipment, Man Machine Interfacing, Data Collection and Communications terminals.

#### Typical Features

- MIL-STD-810G
- MIL-STD-461F
- IP65 – IP67
- In-Vehicle Computers





- Specialist Encryption
- Custom Modification
- Mobile Electronic Forms
- Custom OS Design – Microsoft Gold Partner

## Military Comms

Steatite is a primary European distributor of ViaSat and Persistent Systems military communications products and specialise in designing custom solutions to meet your specific requirements. Products available range from "true" mobile ad-hoc networking systems (MANET), Mesh Radios, UHF SATCOM terminals and amplifiers, VUHF and L Band Communications System (VULC) as well as other innovative satellite and digital communication products that enable fast, secure, and efficient communications to any location.

### Typical Features

- Scalability
- Cost Effective Solution
- High Performance and Speed
- Rapid Network Deployment / Flexible Deployment
- Fault Tolerant

Rugged Military Switches and Routers

- Typical Features
- Rugged Switches with IP ratings
- Wide Operating Temperatures
- Rack, Wall & DIN Rail mounting options
- Redundant Ring Technology

## Rack Mount Computers

Steatite design and build military rack mount computers to suit specific programme requirements. Using high quality components throughout and employing strict build controls, we can guarantee the quality of every system we ship. Steatite offers a full design service including custom chassis, PCBs and cable assemblies, helping us to meet our customer's exact requirements.

### Typical Features

- Dual and Single Xeon rack mounts with Military approvals (0035, 49-41 & 461F)
- Micro technology
- 1, 2, 3 & 4U Systems – Custom and COTS (0035, 49-41 & 461F)
- Support for all windows operating systems
- Custom chassis design
- Wide operating temperatures
- Special configurations, modular platforms, turn-key systems and custom design capabilities
- Custom OS Design – Microsoft Gold Partner

## Portable Military Power Solutions

Steatite is an approved supplier to the UK MoD and other Government authorities, providing a wide range of battery packs and cells for use in demanding operations. Steatite is familiar with working to the latest Defence Standards and highest quality controls. We are experienced at designing battery packs and systems for Land, Air and Sea operations. Military operations are conducted with critical equipment and in some of the world's harshest environments. Using world class cell manufacturers, our customized battery and power solutions help ensure success, mission after mission.

### Typical Features

- Custom Battery Pack Design & Manufacture
- Batteries for Mobile Asset Tracking
- Military Communications Battery Packs for the UK MoD
- Portable power packs used for surveillance and communications
- Electrochem lithium primary cells used in data communications

## Rugged Military Printers

Utilising Commercial-Off-The-Shelf (COTS) print engines and mounting them into custom-made protective enclosures, rugged printing solutions from Steatite have seen action on Navy vessels, been used in aircraft ground support, under canvas and outdoors.

Steatite has the benefit of having their own test laboratories for Heat, Cold, Humidity, Shock and Vibration. The company also

has its own in-house design team using 'solid works' 3D design software. This enables the company to design, prototype and test at our Oxford facility, to meet standards such as MIL-STD-810, MIL-STD-461 and a given IP rating.

A bespoke range of rugged printers and mobile printing solutions are available.

### Typical Features

- Custom enclosure design
- Free standing or hard mounted
- Internally isolated from shock and vibration
- Custom mounting solutions
- UK designed and manufactured
- Fully protected (810) and shielded (461) whilst in operation
- Low cost of ownership

## Rugged Military Displays

Steatite offer a range of rugged displays that are specifically engineered to withstand harsh environments experienced in military, marine, industrial and transportation applications.

When working in extreme shock, vibration and specifically salt fog environments, rugged displays provide a reliable solution for any military, nautical or offshore application, these displays can be highly customised to suit any application or operational environment by specification, colour, finish and format.

Several levels of EMC protection are available as options, providing reliable data protection in the field of operations. Further upgradeable options are available for secure desk, console or rack mounted environments.

Steatite also offers KVM Switches, giving the ability to switch Keyboard, Video and Mouse between multiple computers.

### Typical Features

- Available in a range of sizes, from 3.5" to 57"
- Panel Mount, Rack Mount or Vehicle Mount options
- 19" Rack mount monitors with keyboards
- MIL-STD-810 / MIL-STD-461 Approved
- Custom Rugged KVM design



EXPERT IN SURVIVABILITY™

## K9 ARMOUR SYSTEM

- Side plates provide AK-47 protection
- Soft amour system provides NIJ level I spike protection
- Modular carrier system
- Accomodates panels of different ballistic threats
- Provides attachment points for equipment and food
- Multiple sizes to accommodate three sizes of animals (14-23kg, 23-32kg, 32-41kg)
- Overall system weight 10% of the canine's weight.



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# Ansell Protective Solutions AB

Ansell Announces that TRELLECHEM® Super Gastight Chemical Protective Suit has been Approved for use in Explosive Environments



Ansell, a global leader in protection solutions, today announces the Trellechেম Super gastight chemical protective suit has been tested to and fulfills the requirements of the ATEX Directive 94/9/EC for equipment to be used in

potentially explosive atmospheres.

Trellechেম Super has been on the market nearly 30 years and has an extensive track record of satisfied customers all around the world. It holds certificates to the

highest standards in Europe and is popular in various industrial applications.

“Since it is a requirement within most chemical industries to wear antistatic protective clothing, we are very happy to

announce that the Trelchem Super now also fulfills this requirement”, says Thomas Draskovics, President and General Manager Ansell Specialty Markets. “Ansell’s commitment to innovation is reflected in the design of this product, and we are proud to make it available to our customers.”

The Trelchem Super garment material has been upgraded by adding conductive carbon black in one of the rubber layers, thereby achieving new antistatic properties. Already well-known for its outstanding durability in combination with

excellent resistance to a variety of chemical substances, this new antistatic property will add to the list of positive properties and guarantee its position on the market for a number of years ahead.

Explosive environments (atmospheres) are classified in different Zones, depending on how high the risk of an explosion is. Also, chemicals are classified into Explosion groups depending on how explosive they are. Trelchem Super is approved for use in Zone 0, 1, 2 (gas)/20, 21, 22 (dust) and Group IIA, IIB, IIC, i.e. within environments with the highest explosive risk.

<http://protective.ansell.com/Products/Trelchem/>

Trelchem Super is available in both fully encapsulating and non-encapsulating design and can be fitted with boots or socks, a variety of gloves, airline pass-through, pockets, loops etc. to fit each customer’s specific needs. It holds certificates to EN 943-2/ET, EN 943-1, EN 1073-2 (Protection against radioactive particles) and EN 14126 (Protection against Infective agents).

**TRELLCHEM®**



# CAMO CREAM FOR UNSEEN HEROES.



Available at



[www.survivalaids.com](http://www.survivalaids.com)

  
**Goodkit**.CO.UK



[www.cadetdirect.com](http://www.cadetdirect.com)



[www.bcb.in.com](http://www.bcb.in.com)

# High Hopes for Hand Sized Drone at Home Office Show



A new Unmanned Aerial Vehicle (UAV) created by a British Company that fits in the palm of a hand and can be operated remotely by troops sitting in a control room thousands of miles away is set to be a hit at this year's Home Office Security Exhibition, Security and Policing.

## The SQ-4 UAV Hand Sized Drone

BCB International Ltd, the Cardiff-based manufacturers of military survival and protective equipment, have developed the SQ-4 Recon, which is capable of performing a wide range of tasks ideal for military and security teams.

BCB International's Robotics Projects Manager, Barry Davies, said: "The SQ-4 takes surveillance to new heights. Its small size and light weight (290 grams) means that it can be carried and deployed with little additional strain.



"The drone can be flown remotely using a tablet, which also displays the video and stills transmitted by its high-resolution camera. Its small size coupled with its 10 ultrasonic sensors make it ideal for penetrating and searching buildings and narrow spaces. It can hover discreetly over a targeted area or 'perch and stare' using day or night vision.

"The SQ-4 provides soldiers with instant information about the enemy's movements, capabilities and any hidden dangers that may be lurking over a hill or inside a building without putting themselves in harm's way"



# ONERA Acquires Brüel & Kjær Wind Tunnel Test System

The French aerospace research centre, ONERA, has acquired a 200-channel Brüel & Kjær PULSE™ acoustic data acquisition system for wind tunnel testing.

## 200-Channel Brüel & Kjær PULSE™ Acoustic Data Acquisition System for Wind Tunnel Testing

The system's first use will be for scale-model, aero-acoustic measurements at the S1 large sonic wind tunnel in Modane, after which ONERA will use the system in a number of its other wind tunnels.

This system integrates with the wind-tunnel control system at the Modane facility, which can remotely control the data acquisition process. During data recording, process data is simultaneously displayed together with real-time acoustic data in the form of time/frequency plots. Based on Brüel & Kjær's standard PULSE LAN-XI Data Acquisition Hardware and analysis platform, the system provides a dedicated, streamlined workflow to handle the system setup, data recording and post-processing analysis - and is

suitably sized to handle the large data throughput.

Acoustic measurements in wind tunnel systems are categorised by the large number of channels needed, high data sampling frequencies, tight phase matching between channels and the high dynamic range of recorded levels.



**Brüel & Kjær** 



## Designers & Manufacturers of CBRN and TIC Filters

Working closely with the Defence Industry, EMCEL Filters Ltd design and manufacture CBRN filters to provide the high level of protection required in Fighting Vehicles, Ships, Buildings and Protective Shelters. CBRN Filter Elements and Housings can be of new design or produced to customer requirements.

EMCEL design and build combination HEPA/Carbon filter units for critical CBRN / TIC filtration in Laboratories, Government Forensic Departments, Testing Facilities, Experimental Chambers and at Decontamination Sites.

1957-2013 56 years of Air Filtration



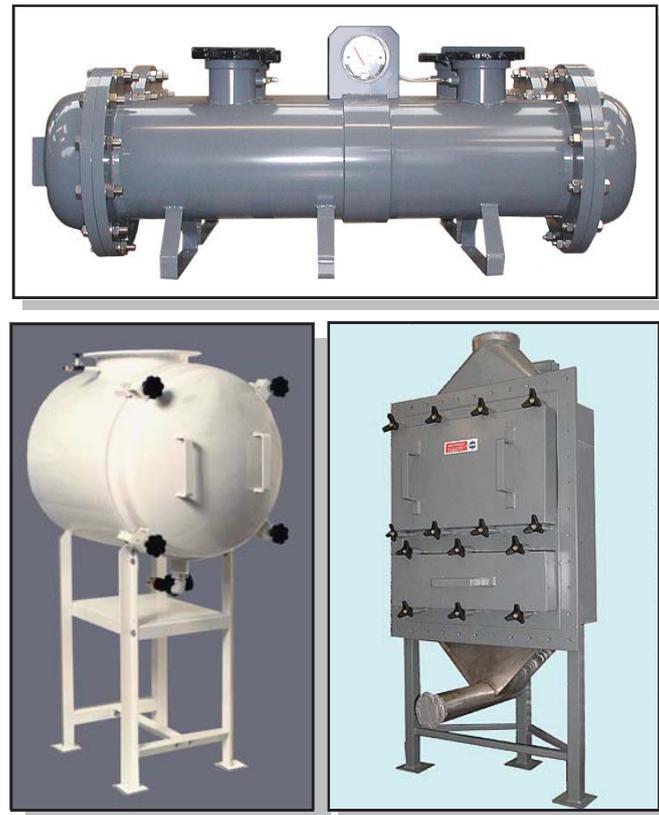
## Safe-Change Units for HEPA/Carbon & CBRN Air Filtration

Specifically designed and manufactured by EMCEL Filters Ltd for the Chemical, Pharmaceutical, Medical, Nuclear and Defence Industries, where critical air filtration of hazardous, possibly **CBRN** contaminants, is required.

EMCEL Filters Ltd offers Project Engineers and Consultants the complete design service from initial concept, to CAD drawings and to final production...  
...all completed in-house.

EMCEL manufacture air filtration units for many major Pharmaceutical Companies and Government Departments, with caseworks in a variety of materials. All filtration units are supplied complete with **our own** Pre-Filters, HEPA, Carbon, **CBRN** or **TIC** filter elements, plus spares as required.

Extensive in-house test facilities enable EMCEL to fully certify filter efficiencies.



### EMCEL Filters Limited

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Octagon are pleased to announce the **BDS1** (Ballistic Defence System) is now fully certified. Wiltshire Ballistic Services Ltd carried out tests on Octagon's ballistic block to determine its ability to defeat 7.62x51 mm P80 AP (armour piercing) rounds to EN1 522/1523 threat level and to determine the V50 of the blocks against .50 calibre FSP's (fragment simulating projectiles) to STANAG 2920. Results can now be found on the Octagon Defence website go to:

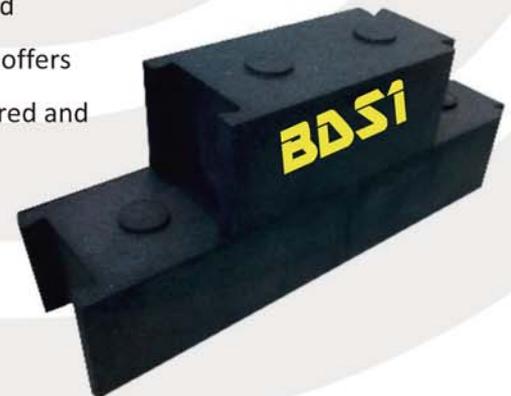
<http://www.octagondefence.com/page10.html>

#### **Live fire ranges and shoot-houses**

Due to the binding process used in manufacture, the finished blocks keep their elasticity and so remove the sting of live fire without crumbling - improving their longevity. This makes them extremely suitable for live ranges. Most live ranges require a product over 12" thick of binder rubber to encapsulate live fire and fixing a substantial defence wall of this nature can be challenging. The BDS 1's modular design means no messy, hazardous adhesives, allowing specific target areas to be easily removed and renewed. We also offer adhesive free ricochet matting.

Finally, to ensure the most professional and effective outcomes are achieved, Octagon offers range design and consultancy where required and an end of life recycle service.

We look forward to your enquiry.



Engineered Ballistic Impact Reduction  
using the latest in polymer technology



# New Horizons for Rubb

A respected UAE flight school has unveiled three new helicopter hangars to support its expanding business.



## EFASS Structures

Rubb Buildings Ltd won an order to provide three 23.4m x 36m steel and aluminium hybrid EFASS structures to Horizon Flight Academy.

Hareb Thani Hareb Al Dhaheri, Horizon Chief Executive Officer said: "We chose Rubb for their reputation in design, development and deployment of temporary hangars. The installation of our hangars was speedy and efficient, the project was completed on time and as promised."

The high flying academy is based at Al Ain International Airport and has been purpose built for flight training. It has set the benchmark for pilot training in the Middle East, offering fixed wing and helicopter pilot courses.

Its fleet includes Cessna 172SP, Diamond DA42, Bell 206 and Bell 407 aircraft and flight simulators. The hangars will be used

for the storage and maintenance of the fleet helicopters.

Horizon first viewed Rubb's state-of-the-art hangar system at IDEX 2011 in Abu Dhabi and the relationship grew from there. The Horizon team visited Rubb's manufacturing plant in Gateshead, UK, and personnel from Rubb travelled to Al Ain to assist with site assessments and oversee the installation of the structures.

The EFASS shelter system, which features hangars, sunshades and warehouses, is uniquely suitable for the storage and maintenance of aviation equipment and operations. The system is designed to be rapidly deployed and quickly erected anywhere in the world.

The main body of each Horizon hangar was constructed using a number of steel fabricated components together with uniquely designed steel roof and leg sections, that bolt together to form the span trusses. When assembled, high

strength robust PVC coated polyester fabric sheets were fitted between the aluminium capping sections of adjacent spans to form the shelter.

The gable ends feature the standard aluminium EFASS frame elements complete with PVC membrane and a 21.5m x 7m Heli-Door at the hangar entrance. Each hangar includes two personnel doors in the closed gable ends and a porch in each sidewall. One of the aviation buildings has been fitted with an overhead roof-mounted 2000kg gantry crane system to assist with internal maintenance procedures.

These shelters are the first Rubb EFAS Systems to feature an internal PVC membrane to provide additional thermal insulation – protecting valuable aircraft and personnel from the soaring temperatures outside.

Rubb adapted the EFASS Steel Variant (SV) design to include mostly steel framework

instead of aluminium to meet with stringent fire regulation codes in the UAE. The company worked with Al Futtaim Carillion during the construction of the aviation facilities and the installation was overseen by Rubb Erection Adviser Dave Cromarty.

The buildings were completed in six weeks.

Project Manager Andy Knox said: "It has been a challenge to launch the EFASS in the UAE because it was a completely new product and technology in that marketplace. But the team at Horizon really wanted this hangar system and have helped us to introduce this product range to the region. We are now looking forward to showcasing this project and our military

and aviation buildings further in the area."

**Specifications:**

Building Type EFASS

Span 23.4m

Length 36m

Area 842.4sq m

Eaves Height 3.2m

Overall Height 8m



# RUD Chains Ltd

## Leading Manufacturer and Supplier of Lifting Applications to the MOD

RUD Chains Ltd, a division of the RUD Group are experts in providing standard and specialist applications for the Armed Forces Worldwide ranging from lifting and load securing equipment to snow and traction chains.

### Military Lifting and Load Securing Equipment

Continuous research and development by the RUD group have enabled them not only to produce products meeting the highest expectations, but also meeting high quality standards. Experience, diligence, ambition and passion are the virtues RUD manifest in order to remain the best. RUD is ISO 9001 certified and is renowned for its expertise in heat treatment methods - delivering high performance chain products to suit the



most demanding military applications.

As a leading manufacturer of lifting devices RUD are proud to offer remarkable products for both standard and specialist solutions. Their chain technology enhances system weight, less transport space is needed due to flexible modular systems and most importantly their equipment is easy and safe to use due to the ergonomic design.

RUD's robust lifting devices work under harsh conditions up to - 60°C meaning work can always be done. All their components are marked with a tracking code (optional available with RFID). Their lifting applications offer a unique overload indicator which deforms before the lifting device becomes damaged offering an ultimate safety factor.

Safety is vital with RUD which is why all their products are produced to offer top quality and innovative designs. All lifting hooks are made with forged safety latches and the WLL (working load limit) is never reduced with the use of RUD shortening devices.

RUD Military Technology is meeting the specific needs of the world's defense



forces through high quality products, an innovative approach and unrivalled industry knowledge and experience.

RUD Delivering high performance chain products to suit the most demanding military applications.

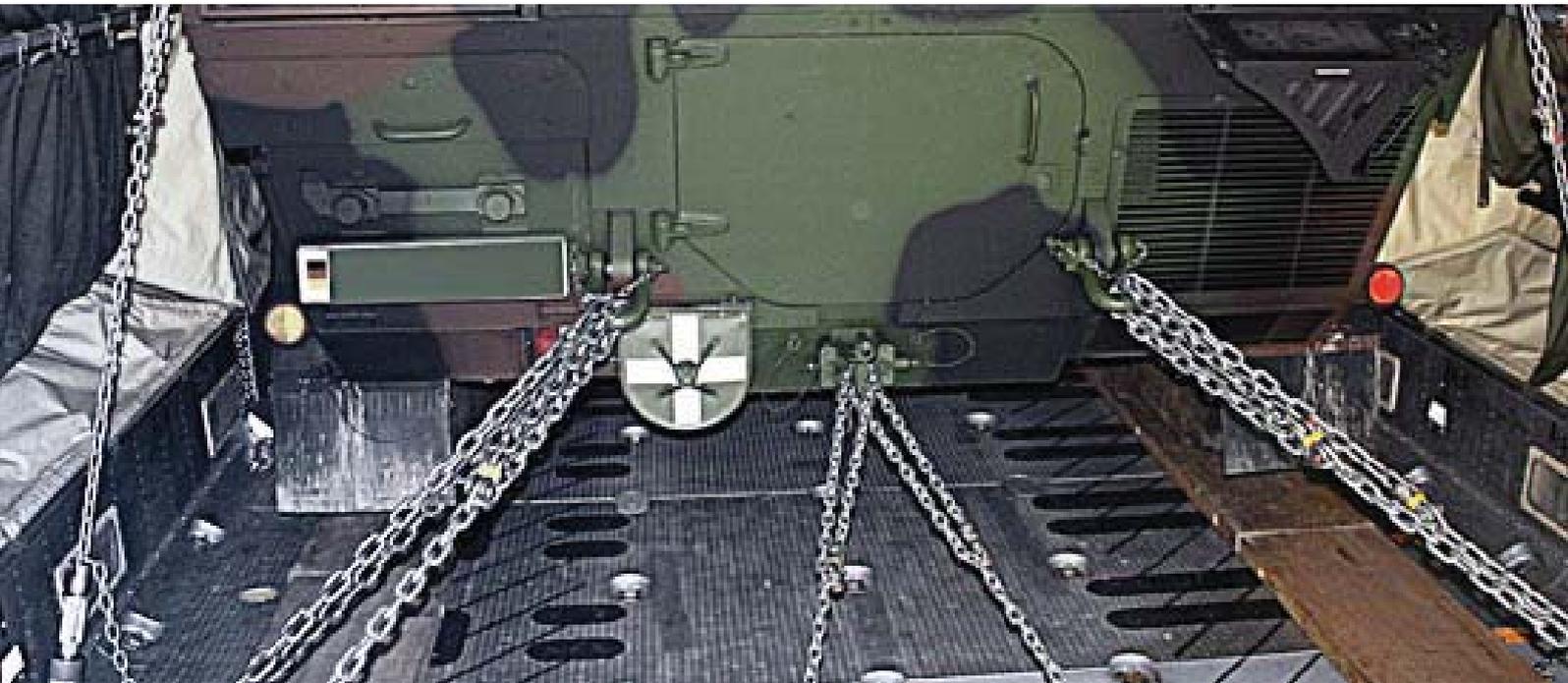
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Tradition in Dynamic Innovation



## RAISING STANDARDS WITH RUD



**RUD Chains Ltd is the UK-based specialist division of one of the world's largest manufacturers of round steel chains, components and systems for a range of markets and applications.**

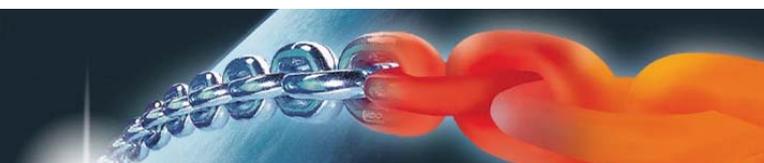
From its base in Whitstable, on the South East coast, the company has developed an enviable reputation for providing standard and bespoke service solutions to clients, including those operating in construction, logistics and transportation and the military. In particular RUD specialises in developing components, which meet the needs of extreme environments, such as harsh weather conditions, with variable temperatures and inhospitable terrain.

As part of its unique manufacturing capabilities, RUD has devised a number of solutions, which optimize modern chain technology,

resulting in durable, modular lifting devices that benefit from a unique RUD indicator, which acts responsively to weight, minimising the risk of damage to the lifting device. The RUD system also benefits from forged safety latches on each hook, resulting in safer transportation.

Imperative to military environments is the ability to transport heavy, mission critical items through rough terrain, on land, sea and air. This is where RUD load securing systems can help.

The company provides lashing systems for the transport of military equipment in accordance with European, International and military standards. Customers benefit from optimum load securing, based on bespoke requirements, using a coordinated



 **RUD**<sup>®</sup> SPECIALISTS IN  
CHAIN COMPONENTS & SYSTEMS

# Soldier Survivability

## Individual Protection Equipment and the Soldier System

For UK and US forces as well as their allies, conflict in Iraq and Afghanistan have forced substantial and rapid investment in individual protection systems - helmets and body armour. It has also brought rapid advancement in weapons, sights, day and night observation devices as well as radios and other communication systems. Together, these form what has become widely known as the Soldier System, and many armies are seeking to put in place procurement programmes to bring greater coherence to this mix of capabilities. The aspiration is not a new one and these programmes have existed in various guises in many countries but never yet come to fruition. The requirement to protect soldiers in combat is not unique to western nations, nor is the challenge of fielding the other capabilities in a form that is usable by the soldier and integrates with existing and future equipment. So what can be learned from this experience?

### **Combat soldiers must be equipped with effective individual protection equipment.**

Fighting in a high threat environment demands that soldiers are properly protected and advancements in helmet and body armour technology now mean that there is no excuse for soldiers not to be appropriately equipped. Whilst this statement may be obvious, procuring the right equipment is not simple. Defining the requirement is key and there are two critical aspects:

- *The user requirement must suit the intended purpose – this is driven by the concept of employment and the threat.*
- *The system requirement must be crafted to ensure that the supplier delivers the intended product to the right quality. This requires a deep understanding of the user requirement as well as the technical detail of the system to be procured.*

In the case of both body armour and helmets, there are many aspects which should manifest themselves in the specification. Notwithstanding quality,

shape and multiple-hit requirements, there is a need to specify the threats which must be defeated and the basic equation for body armour is, the higher the threat the heavier the plate. New materials and systems technologies such as those developed by NP Aerospace in the UK are making it possible to reduce mass significantly for a given performance but the equation remains true all the same.

For combat helmets, performance and weight are also closely related but there are more subtleties in the specification given that a helmet delivers multi-faceted protection which includes: impact, blast, fragmentation, debris, projectiles thrown in riots as well as ballistic threats. In fact, no combat helmet offers effective protection from typical assault rifle bullet at battle range velocity and so protection from the other threats is actually more important in optimising the system for weight and performance. Evidence from operations supports this case and British helmets have been particularly effective in mitigating the effects of fragment and impacts resulting from numerous IED strikes on vehicle and foot patrols.

But superior protection for soldiers does not come without penalty.

### **Reducing the burden is an ever present requirement.**

Parasitic weight, thermal loading and ergonomic stress all conspire to degrade soldier performance and hence drive the demand for new technologies and improved equipment. There are exciting developments in materials and system technologies which offer a weight-down route for both body armour and helmets but these must be combined with good system design to deliver the ergonomic performance necessary. The UK MOD is taking a sensible approach in this respect and seeking to combine the procurement of helmets, body armour plates, soft armour and load carriage. Given the complexity of the industrial base, even this is an adventurous strategy but it is essential to fully reduce the burden on the soldier and

it should be achievable.

### **In creating a system, the interfaces are more important than the equipment.**

Subsequent phases of the UK programme seek to integrate the other systems too. This is very ambitious and rather than seeking to align equipment, suppliers and contracts, defence customers might be better advised to focus on the interfaces. There will always be requirements for new technologies and equipments and in times of war the rate of acquisition will increase commensurate with the operational imperative. So rather than seeking to bring all elements together into an elegant technical vision, it makes more sense to ensure that the basic needs (load carriage, body armour and helmets) can accommodate current and future systems. This is actually about specifying generic interface requirements to the suppliers of all equipments. In doing this, the acquirer can be free to engage the industrial base as it actually exists and the user can be free to use the most appropriate systems for the mission. It also means that suppliers can focus on what they do best rather than worrying about position and alliances.

**Conclusion.** Few nations, if any, will have the luxury of re-equipping their soldiers with all components of the Soldier System in one hit. Legacy procurements, in-service equipments, technical readiness of future equipments, the industrial landscape and budgetary reality mean that capability management through incremental acquisition is a more realistic strategy. The defence customer should therefore focus on getting the basics right and this means load carriage, body armour and helmets. If these are well designed, effective and meet with the approval of the user then the other systems can be acquired to interface with them as and when they are required.

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