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JFD acquires Cowan Manufacturing

JFD is delighted to have diving and recompression specialist, Cowan Manufacturing, as part of the company. The acquisition of the Newcastle-based business is a significant step in JFD's plan to expand our advanced manufacturing base and enhance our offering in Australia.

Cowan Manufacturing, a family business since 1973 which currently employs 25 staff, has an impressive and proven track record and is recognised worldwide for its design and manufacture of lifesaving recompression and hyperbaric chambers.

"Our core business has always been to make the world's best products using Australian steel and aluminium and employing highly-skilled local tradespeople," said Bob Cowan, Managing Director of Cowan Manufacturing.

Events and exhibitions

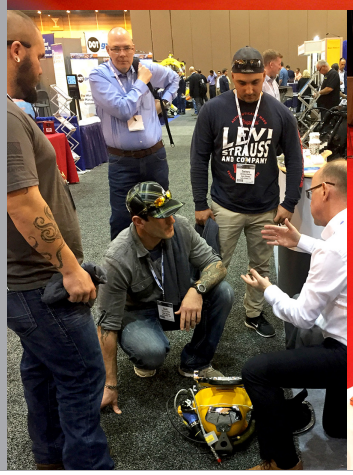
JFD has already completed over 14 global exhibitions this year across both its Commercial and Defence diving sectors.

JFD has increased its presence at a number of events in order to best represent the business in some key target locations.

For the first time, we exhibited collaboratively alongside other James Fisher and Sons group companies at this year's Subsea EXPO in Aberdeen from the 6th – 8th February. We hope to follow this format for a number of other upcoming exhibitions including OSEA in November, in order to best display the vast capabilities and encompassing services the group can offer.

We are looking forward to an equally action-packed second half to 2018 with a number of events scheduled around the world.

Keep up to date with our exhibition schedule by visiting: **https://www.jfdglobal.com/about/events-and-exhibitions-calendar/**



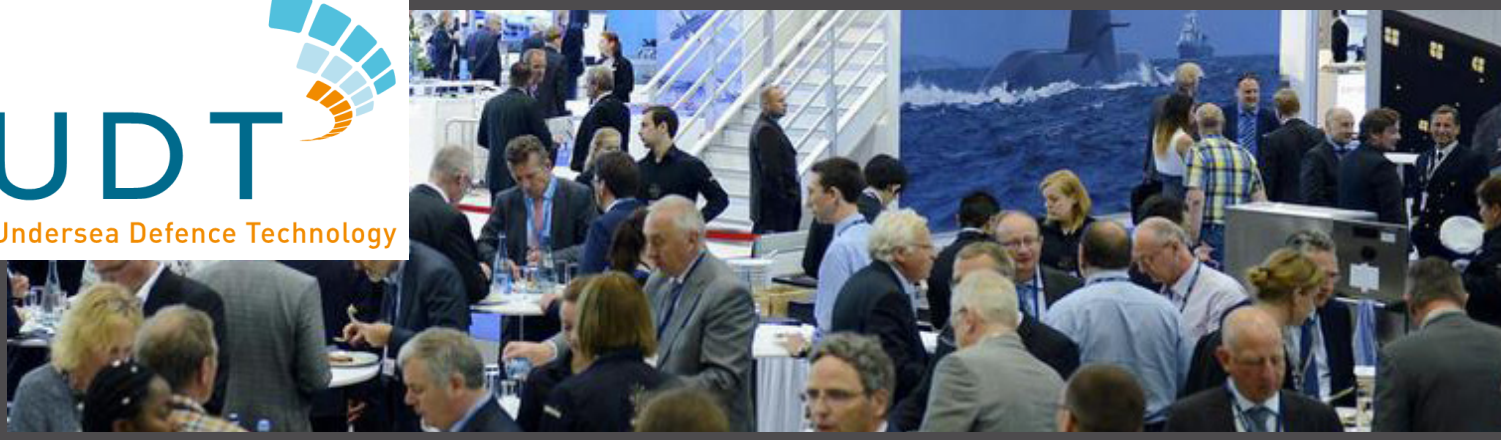


Image credit to Clarion Defence & Security

Success at UDT

JFD exhibited at the recent UDT exhibition held in Glasgow 26 – 28 June. The Torpedo SEAL stealth combat swimmer delivery vehicle (SDV) was on display at the stand, accompanied by a Stealth Clearance Diver's Life Support Equipment (CDLSE) rebreather apparatus.

Over the three day event, JFD's experts were on hand to discuss the company's full suite of defence products.

Our speakers

Alongside the exhibition, JFD presented at the Military Divers Conference, which was held on Wednesday 27 June.

Mini Nambiar (JFD Project Manager – Research and Development) presented on the Combat Diver Navigation Module (CDNM) which JFD has produced in collaboration with the US Navy. The product is fitted to a standard divers half mask and provides compass, depth and dive time display. It replaces existing tactical swim boards which the diver holds in front of them to navigate, providing a hands-free capability and a step change in diving technology.

Andy Brunton (JFD Defence & PILS Manager) provided a presentation on issues and challenges in marine Special Forces equipment today, as well as looking at future operational requirements. Andy discussed one current development which combines JFD's Shadow rebreather range with the SnigelDesign Combat Vest facilitating clip on / clip off capability with a scalable 'add-on' harness providing a solution to meet operational tasking.

Open evenings at Inchinnan

As UDT was being held in Glasgow we took the opportunity to host open evenings at our Inchinnan facility. Currently in build at the Inchinnan workshop is the second of our 3rd Generation DSRV. Guests were able to take advantage of this brilliant and rare opportunity to see such a complex build in progress and network with a variety of personnel.

A presentation on JFD's 3rd Generation Submarine Rescue system and it's capabilities was provided and local food and beverage suppliers ensured an enjoyable evening for all.

R&D update

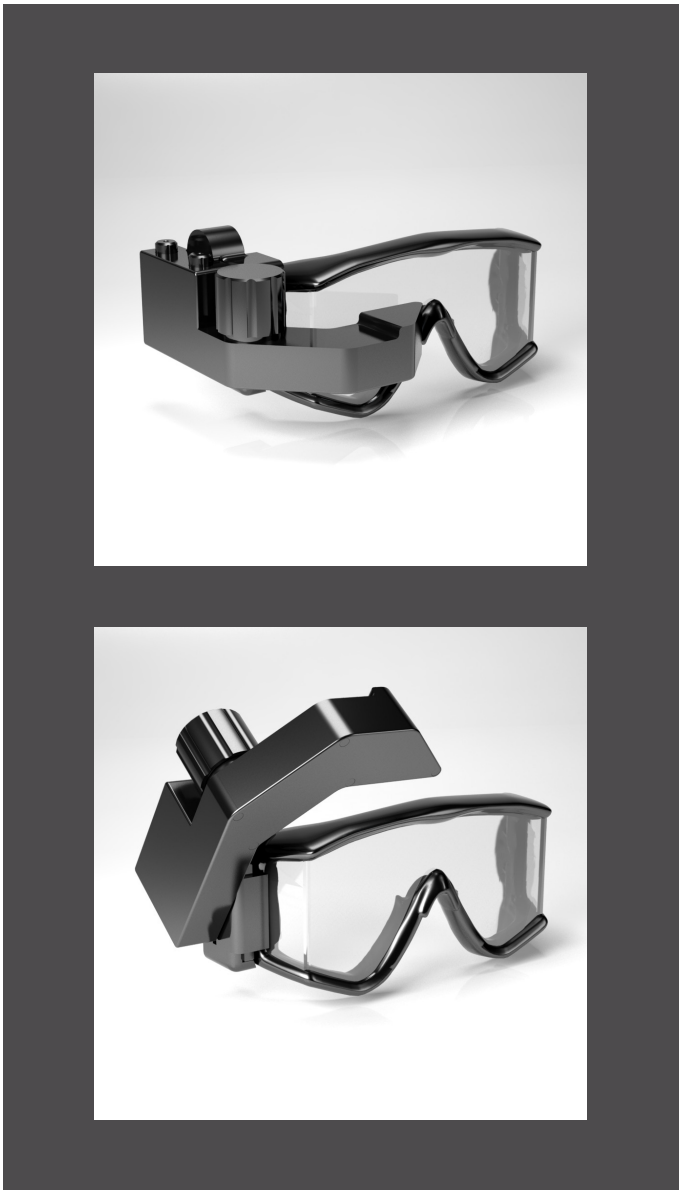
Our latest R&D project - **Combat Diver Navigation Module (CDNM) Head Up Display** was awarded 2018 Excellence in Technology Transfer Award from Federal Laboratory Consortium (FLC) for Technology Transfer. Our nomination was selected from among 300 plus Federal laboratories supported by FLC, an indication that our nomination was of the highest calibre.

In line with JFD's aim to keep those working underwater safe, this latest development from R&D will provide military divers conducting dangerous underwater navigation missions significantly increased accuracy, safety, and situational awareness through the CDNM. The receipt of this award is a great opportunity for JFD showcasing our capability of supporting client requirements.

FLC™
Federal Laboratory Consortium for Technology Transfer

About the product

The low cost **Combat Diver Navigation Module Head Up Display (CDNM)** has been developed in collaboration with the US Navy (Naval Surface Warfare Centre Panama City Division, NSWCPCD) with the scope to develop the prototype CDNM system invented by NSWCPCD into production build standard under Cooperative Research and Development Agreement (CRADA). The CDNM technology invented by NSWCPCD was transferred for manufacture via a Patent License Agreement to JFD last year. The CDNM provides a clear visual display of a combat diver's compass heading, depth, and time, even in zero visibility conditions. The tiny micro display, unique custom optical system, and electronics are integrated into a module that mounts to the side of a low-volume dive mask. It includes a small lithium battery providing 20+ hours of operation.



The diver can flip the display up and down, turn the system on and off, adjust the display brightness level, and use the special NAVLOK software feature. When the NAVLOK button is pressed, the selected compass heading is boxed and navigation alignment icons appear to assist the diver with maintaining an accurate navigation course. The screen displays compass heading, diver depth (in either feet or metres), and time in minutes and seconds using low-light red characters to reduce light signature and preserve divers' night vision. There is also a remaining battery life icon.

The first production ready version of the CDNM is currently under build and has undergone in-water trials with the US Navy and MoD UK. Final qualification testing followed by product launch is planned for completion Q4 2018.

Australia's safest ever submarine rescue system goes into service

In July the Royal Australian Navy (RAN) and the Australian Government granted the licence to operate new $A19.7 million (£11.05m) hyperbaric equipment which was delivered by JFD, as part of an existing Escape and Rescue contract, to the RAN in April.

The kit – a hyperbaric equipment suite and a transfer under pressure chamber – was launched at a ceremony at JFD Australia's advanced manufacturing headquarters at Bibra Lake in April, meaning that for the first time, the whole crew of an Australian submarine can be treated at once.

Toff Idrus, General Manager JFD in Australia stated: **"Achieving acceptance and global certification from Lloyds Register is a very rigorous and demanding procedure and what it means for submariners is extremely significant as up to 88 people can now receive life-saving medical treatment in the hyperbaric equipment suite and pressurised transfer chamber at any one time. When you consider that a Collins-class submarine has a crew of 48 - 60, this new capability is very significant and represents an important milestone for submarine rescue in Australia."**

The new hyperbaric equipment suite helps submariners rescued from a disabled submarine to overcome the life-threatening effects of being rescued in pressurised waters.

It is also the final step during a submarine rescue which begins with rescuing the crew from the disabled submarine into a JFD free-swimming rescue vehicle, carrying them to the surface and safely on to the deck of a rescue ship.

From here, the submariners are moved through the transfer under pressure chamber, with doctors on hand to monitor their wellbeing as they move into the hyperbaric equipment suite for further recovery.

The new equipment took two years to build using JFD's highly skilled workforce of some 100 personnel who will now conduct further naval testing and evaluation of the new equipment in August, culminating in the annual Black Carillon naval exercises in November 2018.

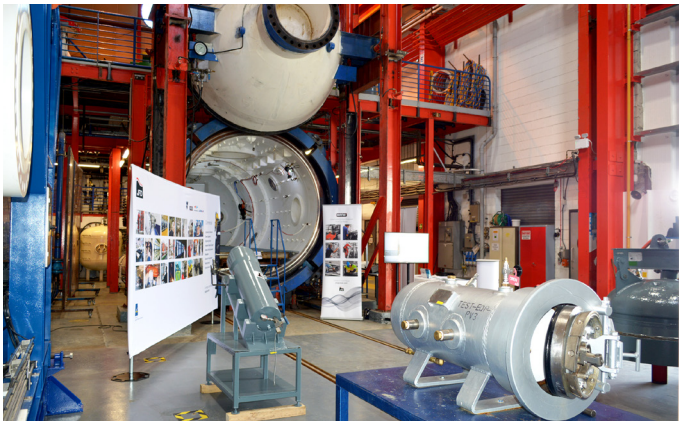
Open day success

JFD hosted an open day on Friday 18th of June showcasing its pressure testing facilities to a number of key clients.

JFD houses some of the largest and most capable pressure testing facilities in the UK at its National Hyperbaric Centre facility in Aberdeen and our technicians have vast experience in this area. Our large Work Chamber is capable of simulating depths of up to 1000msw in wet or dry environments and is connected to an 18-man saturation diving system enabling both manned and unmanned trials. We also house a number of other smaller pressure testing chambers enabling testing up to 8000msw.

Guests enjoyed a sunny afternoon of networking, stone baked pizzas and craft beer.

We would like to thank everyone who made it along!



Laura Stewart presents at IMCA North America regional meeting

JFD Head of Sales, Commercial Services, Laura Stewart, travelled to Houston on the 1st February 2018 to present a paper on Hyperbaric Rescue to IMCA members attending the annual North America Regional Meeting. IMCA (International Marine Contractors Association) holds regular regional meetings which include updates on global work, opportunities, topics of local interest and progression within the industry. JFD has been an active IMCA member for a number of years and continues to offer support to this important industry body by contributing at all suitable opportunities.

The IMCA North America committee was delighted for JFD to deliver a paper on hyperbaric rescue, its importance, progression over the years and current industry status as this is a growing interest in this region. Alongside regular IMCA members, they were a number of representatives from local Coast Guard services who were keen to learn about the complex process of recovering a hyperbaric lifeboat which would assist them in their role.

JFD is a global leader in the field of Hyperbaric Rescue having maintained one of the most comprehensive land-based Hyperbaric Reception Facilities (HRFs) at its National Hyperbaric Centre in Aberdeen for over 30 years, so was an obvious choice for the presentation.

Building upon the comprehensive service offered to diving contractors working in the North Sea, considerable investment has been made over the past few years by JFD. JFD is passionate about improving the standard of subsea safety globally and hopes to develop a hyperbaric rescue solution which can be offered to customers globally. Last year we accepted the delivery of an 18-man portable HRF and a field study is currently underway to investigate the option of a global hyperbaric rescue service which could glean expertise and experience from our proven submarine rescue service.

JFD completes first phase of open sea trials

Indian Navy Deep Search and Rescue Vehicle

JFD has successfully completed the first open sea launch, dive and recovery of the deep search and rescue vehicle (DSRV) for the first of two 3rd Generation Submarine Rescue Systems being delivered to the Indian Navy.

The DSRV completed a full launch deployment, dive and recovery in open sea, replicating the operating conditions of a real submarine rescue operation. The completion of this phase of open sea trials represents a significant milestone in the ongoing delivery and acceptance of the 3rd Generation Submarine Rescue System, which is grounded in a rigorous trials and testing process that ensures the highest safety standards are upheld.

Following the delivery of the first system to the Indian Navy in April this year, JFD deployed a team of 30 expert personnel to India's west coast to support the mobilisation followed by a period of rigorous sea trials, working in close partnership with the Indian Navy who provided the commercial mothership and associated trials consort vessels. The Indian Navy west coast based rescue team, who will operate the system when in service, were active participants throughout this phase of the trials.

Speaking on the development, Ben Sharples, India DSRV Project Director at JFD said: **"The completion of this phase of open sea trials for the first DSRV is a significant milestone in the delivery of the first of two highly advanced 3rd Generation Submarine Rescue Systems. The System was tested in the harsh environment presented by the seas off Mumbai pre-monsoon, an entirely different set of challenges compared to those experienced during harbour trials in Scotland earlier this year.**

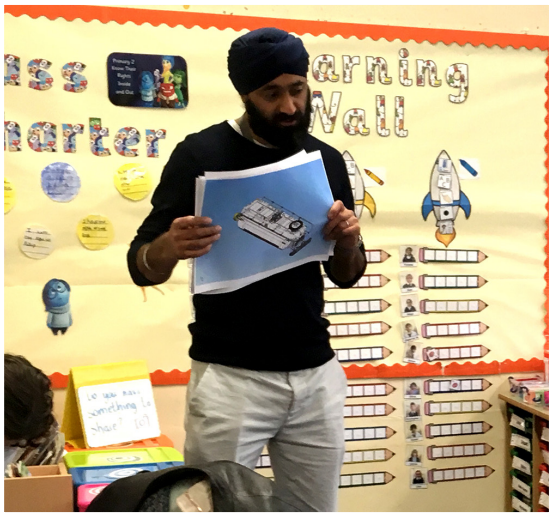
"Additionally, sea trials afford the opportunity for the team to experience the operation of the equipment in a real setting, ensuring they are equipped with the necessary skills to conduct a safe and successful submarine rescue operation."

JFD's 3rd Generation DSRV marks a pioneering step-change in real-world submarine rescue capability. It is weight optimised for maximum payload and optimum transportability and is capable of operating at greater depths than most submarine rescue vehicles. The 3rd Generation DSRV has been specifically designed to optimise speed and manoeuvrability, both crucial factors in conducting a successful rescue operation, and the vehicle has the capability to mate with any submarine, even those that might be subject to inclination on the seabed.

The 3rd Generation Submarine Rescue Systems incorporate an innovative new system design and tightly integrated components to ensure time-to-first-rescue (TTFR) - the time measured between system deployment and commencement of the rescue - is minimised. In the event of an accident, this maximises the chances of a successful rescue, which is crucial in protecting the lives of submariners.

‘Andy Warhol’ SPHLs delivered

The “Andy Warhol” SPHLs have completed sea trials and have been delivered. The SPHLs are now ready for installation and commissioning. The SPHLs are the second batch of the 18-man lifeboats which form part of the multi-million pound contract to design and manufacture six SPHLs; four 18-man and two 24-man, as part of the in-built Saturation Diving Systems onboard a new fleet of DSVs for Ultra Deep Solutions, the “Van Gogh”, the “Andy Warhol” and the “Ultra Deep Matisse”.



JFD engineer inspires next generation

JFD Senior Mechanical Engineer, Harmeet Saggu has been working with the ‘Primary Engineer’ initiative which aims to inspire children, pupils and teachers through interactions with industry professionals. The initiative has been delivering engineering teacher training and classroom projects all over the UK since 2005.

Young people cannot aspire to something they didn’t know existed, so bringing engineers into the classroom to work alongside teachers, children and pupils is a major part of the programme. A hands on approach to learning helps inspire children at this age and with the help of experienced Engineers, teachers can get some new ideas which translate directly to the working world.

So far, Harmeet has presented at both schools showing the children the work JFD has done in relation to the development of the 3rd Generation Submarine Rescue System and has been sending the class regular updates via social media as the first build neared completion. The children loved hearing all about submarines and rescue systems!

Lise McCaffery, Regional Director for Primary Engineer said: **“Many thanks to JFD for the support - it was great having an engineer to provide context to the learning for the pupils and they loved hearing directly from and working with Harmeet.”**

Diver Medic training course delivered in Jakarta

Stuart Sloan, JFD Medical Operations Supervisor and experienced medical trainer, recently delivered an IMCA Diver Medic Technician (DMT) course for Advanced Offshore staff at their premises in Jakarta.

JFD is a long-standing and renowned provider of quality IMCA approved DMT courses and hosts approximately six courses per year at its facility at the National Hyperbaric Centre in Aberdeen alongside regular refresher courses.

JFD was approached by repeat client, Advanced Offshore, a leading services provider to offshore subsea contractors in the Middle East, India and Asia Pacific regions, to deliver a full DMT to 12 of its diving personnel. Advanced Offshore offer air, mixed gas and saturation diving capabilities for a variety of applications to a wide range of customers so having fully qualified divers is essential to enhance the safety of their operations and provide greater assurance to their clients.

The course was tailored to align with Advanced Offshore's requirements and the schedule ran over 10 days at the company's facility in Jakarta. Stuart was able to make use of equipment at the facility during practical elements of the course which was beneficial to the delegates who could apply their training directly within the chambers they use on a daily basis.

All delegates successfully passed the course and JFD received extremely positive feedback in regards to the relevance, importance, delivery and content of the course.

JFD is dedicated to enhancing the global standard of subsea safety and its training department are committed to offering high quality courses to clients worldwide offering bespoke solutions to suit requirements and make vital training more accessible.

JFD presents to Marine students

JFD in Singapore was once again invited by the Singapore Institute of Technology to conduct an industry guest lecture to final year students of Marine degree programmes at Newcastle University.

JFD was invited to share on the latest and future technologies related to: Saturation Diving Systems, Life Support Equipment, Diver Gas Reclaim and Pressure Vessels for Human Occupancy (PVHO) particularly on the viewports where sample calculations and analysis were shown.

Singapore Institute of Technology (SIT) is Singapore's university of applied learning.

COBRA completes first North Sea dive for Bibby Offshore

JFD's compact bailout rebreather apparatus (COBRA) has completed its first North Sea dives with Bibby Offshore. In March 2018, JFD delivered six of the rebreather sets to Bibby Offshore in order to enhance diver safety within their saturation diving teams by providing up to 20 minutes of bailout gas at depths of 300msw therefore; greatly improving the chances of survival.

Over a two-week period, the COBRA sets were operated from the Bibby Topaz at a water depth of 110 metres. In all, over 30 bell runs were safely and successfully completed during the course of the operation.

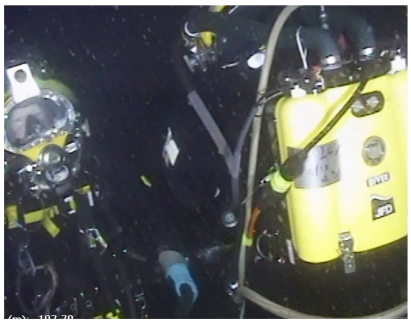
Bibby Offshore is already commencing its second North Sea dive with the COBRA sets. This new project will see the apparatus tested further, with a diving depth of 130 metres.

Allan Nairn, Director of Diving at Bibby Offshore, commented: **"The entirety of our dive team responded positively towards the introduction of the COBRA rebreathers onto the Bibby Topaz. In particular, they emphasised that the benefits of additional breathing duration, the ability to test the COBRA at any time and the apparatus' ease of use with regards to weight all made them feel safer in conducting their dives."**

JFD worked closely alongside Bibby Offshore personnel in the research, development and testing phases of the system, gaining invaluable feedback which has driven the inclusion of some of the main functionality and safety features.

JFD Managing Director Giovanni Corbetta said: **"Enhancing the standard of subsea safety is JFD's main driver. We have a longstanding reputation of producing the world's most innovative, capable and proven diving equipment and technologies. By working closely alongside companies like Bibby Offshore who share the same values, we can ensure our products are developed in direct response to user requirements. After a lot of hard work, time and dedication from the JFD team throughout the development and testing phases, it's a huge triumph to deliver COBRA to one of our most valued clients."**

COBRA is expected to be adopted by a number of other North Sea contractors as the requirement for safer practice increases. JFD has also attracted interest from overseas customers who are recognising the benefits the system offers.





JFD sees influx in commercial training as North Sea recovery progresses

The department kicked off the year with a positive influx of training delegates and has experienced over 75% capacity on most of its courses.

JFD runs a range of courses across the subsea, medical and diving sector from its locations at National Hyperbaric Centre and Westhill. Delegates travel far and wide in order to attend our renowned courses to boost their skills and competence.

Clients choose JFD for our pedigree, market knowledge and long-standing experience. We have the benefit of having access to an incredible range of skills and experience within our company upon which our courses can evolve, putting us firmly ahead of our competition.

The department has faced some challenges during the oil and gas downturn, however has continually promoted the importance of subsea safety. We have encouraged operators to ensure this remains a firm focus even when market conditions are tough in order to maintain high standards so they can quickly respond when they start to recover. This approach has proved to resonate with operators and delegates as they have continued to rely on JFD to deliver steady training programmes.

Through continual development alongside industry regulations and requirements, and the inclusion of lessons learnt, JFD believes its training portfolio is now stronger than ever.

We hope this incredibly busy start to 2018 is a reflection of the momentum which is gradually returning to the oil and gas sector. We are delighted to see this sudden boost, and believe it is testament to the department's determination to remain relevant and at the front of our clients minds by adapting our courses to suit their requirements and offering a portfolio of truly beneficial courses.

With purse strings tightened, it has been essential that our courses remain relevant in order to provide delegates with a valuable learning experience. To do this, the department continually focusses on a number of things:

- **IMPROVEMENTS TO COURSE CONTENT**
  JFD makes continual investments to all its course content, not only ensuring they are kept up to date, but expanding their relevance and practical application within the industry.

- **MAKING TRAINING MORE ACCESSIBLE**
  Benefitting from JFD's global bases, we can offer training courses around the world which makes our courses cheaper and easier for delegates to attend.

- **INCORPORATING LESSONS LEARNT**
  A big focus for JFD when developing course content is to include information and evidence from lessons learnt. JFD wants to help the industry learn from past experiences and identify gaps in training and safety procedures which could be corrected. If the industry does successfully learn its lessons, the risk of serious incidents reoccurring will be significantly reduced. And with much of the older generation now retiring, JFD feels strongly that the importance of passing good practice and knowledge down through the generations cannot be underestimated.

Cowan supplies transportable recompression chambers to the US Navy

Cowan Manufacturing, specialist diving and recompression company based in Australia and part of JFD, has delivered its first set of transportable recompression chambers (TRCS) to the US Navy for the support of special forces, navy seals and marines in the Asia Pacific region.

The chambers were certified by the US Defence Department (NAVSEA) for acceptance as part of a visit to Cowan in June 2018. The contract comes as part of a long-standing relationship between Cowan and NAVSEA which has resulted in contracts of over USD $40m.

For the last 30 years Cowan have been the preferred supplier for recompression chambers for the Royal Australian Navy and US Navy as well as supplying vessels to many other navies worldwide.

Training provided to United Sterling

JFD welcomed agent United Sterling to their base in Westhill, United Kingdom to undertake some key training in our proprietary products.

Colin Bosher and K.F. Chan of United Sterling, who are based in Hong Kong, spent a week at JFD learning about our new bailout rebreather COBRA and our Shadow range of defence rebreathers.

The training provided them with a detailed understand of how the equipment operates and can be maintained allowing them the expertise to discuss these products with potential clients in their region.