



# Special Operations



## About JFD

JFD is the world leading underwater capability provider facilitating the commercial and defence diving industries by offering innovative diving, submarine rescue and subsurface technical solutions.

JFD offers a range of defence diving apparatus, apparel and ancillaries providing a full capability to meet the demands of today's Special Forces Operator. The JFD range of closed and semi-closed circuit Oxygen and mixed gas rebreathers can be constructed to meet the required specifications.

As capability providers, JFD can facilitate your requirements from enquiry through to production and delivery and cater for a through-life package which ensures your equipment is always mission ready.

JFD's products and services have been delivered to a large number of countries across all continents and continue to set the industry standard for quality and reliability. With in-service support established in many of these locations and tailored ILS packages, JFD is able to achieve high equipment availability for their customers.

Operating worldwide, JFD has in its portfolio a comprehensive range of products, services and aftercare solutions to the defence industry, including Special Forces, law enforcement, counter-terrorism, maritime protection and mine countermeasures.





## Why choose JFD?

As a result of the sustained engagement with militaries worldwide, JFD has identified the most effective and sustainable in-service support model which has evolved over many years. This service is managed and delivered by a dedicated defence Integrated Logistics Support (ILS) department and can be fully adapted to individual requirements.

The ILS department has project managers, technical authors, training officers, commodities management and engineering support.

To meet the additional challenges of supporting more complex equipment types, JFD has embedded first line maintenance facilities within defence establishments, with the primary objective of providing immediate technical support to the equipment.

JFD offers through life support for all equipment up to, and including, full safety case management and associated activities.

JFD is currently under contract with a selection of navies with a full ILS capability by offering exceptionally high rates of equipment availability of purchased kit; 24 hours a day, 365 days of the year.

### Documentation

JFD has the capability to manage a number of documents to make up an ILS package. All documents can be maintained and updated throughout the life of the equipment. JFD is able to control every document related to our equipment.

### Tailored training

JFD delivers training to clients for all defence equipment.

### Equipment safety

Full safety cases can be prepared for the equipment and can be maintained and reviewed on a regular basis.

### Spares and repairs

JFD offers a full spares and repairs service for all equipment. JFD maintains an efficient level of spares and replacement units in order to ensure all ILS contract terms are met.



Documentation



Training



Equipment safety



Spares and repairs



## Tailored training

JFD provides training support to defence, Special Forces and law enforcement agencies and to those with a specific responsibility in the maritime security domain. Training can be in the form of practical courses in the set-up, operation and ongoing maintenance of closed and semi-closed circuit rebreather systems.

Specialist training is a key area of our expertise, our instructional staff draw upon extensive operational defence diving experience to deliver customer established training packages to the equipment's operators and maintainers.

This tailored training is accredited and can be delivered at the customers own facilities or at JFD training facilities throughout the world.

As part of the procurement process a training needs analysis (TNA) will ensure that the training delivered is of the correct level to enable the safe operation and maintenance of all delivered equipment to the customer.

JFD can arrange product demonstrations, please contact us for more information.





## Special Operations equipment

JFD has a comprehensive range of defence diving apparatus, vehicles, apparel and ancillaries to meet the varied requirements and operational demands of today's Special Forces diver.

JFD's capability offerings allows the customer to pick a package which best suits their requirements. Full training can be given to customers to allow them the confidence and knowledge to maintain their equipment fully in-house if required. Alternatively JFD can offer a full support package in which JFD maintains and services all equipment to ensure they are always dive ready for the customer.

JFD's Special Operations offering comprises of rebreathers, vehicles and ancillary dive gear along with capability packages tailored to customer requirements. This offering is designed to allow the diver to approach their target in a covert manner without causing the diver unnecessary fatigue.

The JFD SDV range allows the diver a variety of insertion methods dependent upon their target while the rebreather range can provide a greater duration and increased depth to allow final insertion to be undetected.





## Shadow rebreather range

The Shadow range of rebreathers has been designed for the combat diver to operate from 0 - 24msw. It allows exceptional breathing performance and is simple and quick to assemble.

The unique multi-mission of the Shadow range offers operational and logistical features including:

- > Extremely low work of breathing and tested to EN 14143
- > Rugged design based upon field proven technology that is in-service worldwide
- > Rapid and simple pre-post dive procedures with crucial components colour coded for safety
- > Common components with other rebreathers within the Shadow range
- > A low magnetic signature
- > Minimum maintenance and can be operated without the need for any tools
- > Designed for ease of use
- > Easily filled using hospital systems





# Shadow rebreather range

## Shadow / Shadow Excursion rebreather

Shadow is a shallow-water, underwater breathing apparatus (UBA) which supplies Oxygen from either a 200 or 300 bar cylinder monitored by an easily accessible pressure gauge. An automatic demand valve regulates the flow of Oxygen and also doubles as a manual bypass facility.

For diving operations beyond the safe depth of Oxygen, Shadow may be quickly upgraded to Shadow Excursion. The Shadow Excursion upgrade enables the UBA to perform as a semi-closed circuit Nitrox UBA, or as a combined Oxygen / Nitrox UBA.

Shadow's unique design offers maritime Special Operations Forces unparalleled performance and mission flexibility whilst minimising size and weight.



24msw depth  
(Shadow Excursion mode)



4-10 hours duration



Semi-closed circuit  
(with Nitrox module)



Lightweight



Low work of breathing



Shadow



Shadow



Shadow



Shadow Excursion



## Shadow rebreather range

### Shadow Enforcer rebreather (under development)

As a closed circuit Oxygen rebreather, Shadow Enforcer is ideally suited for shallow water insertion dives, ship hull inspection activities, improvised explosive device searches, crime scene investigation and for lock in, lock out submarine swimmer delivery operations to 6msw.

The use of pre-packaged ExtendAir® cartridges ensures consistent CO<sub>2</sub> scrubbing performance and reduces the requirement for divers to pack granules manually, improving diver safety. They also provide the lowest work of breathing possible from a canister and is more tolerant to the presence of water in the breathing circuit, thereby reducing diver fatigue.

Shadow Enforcer is a lightweight, easily maintainable and rapidly deployable underwater breathing apparatus (UBA).



9msw depth



2-3 hours duration



Closed circuit



Lightweight



Low work of breathing





## JFD swimmer delivery vehicles

JFD has a range of Swimmer Delivery Vehicles (SDVs) available. The primary function of these vehicles is to facilitate the insertion and extraction of Special Operations forces and their equipment.

JFD SDVs deliver the payload (operators) safely to their intended point of insertion at a high level of readiness for their mission and not fatigued. In all JFD SDVs the operators are shielded from the water stream enabling them to retain warmth reducing the cold water temperature exchange rate.

Development, testing and trials of JFD SDVs has taken place in Stockholm archipelago, the Baltic Sea, Portland Harbour and the waters off the west coast of Scotland. The vehicles combine the Swedish commitment to safety-led design and the ship-building heritage of the Clyde; all underpinned by a unique operational pedigree with operator input at all stages of this process.

### SEAL Carrier

The Seal Carrier enables an independent, over the horizon capability. It combines a fast surface boat for the transit to and from the operation area with an underwater vehicle that can operate in the operation area undetected. During approach, the vehicle may submerge to remain concealed.

### Sub SEAL

Sub SEAL is primarily deployed from a host submarine carrying personnel and equipment. They remain fully submerged throughout the entirety of their mission.

### Torpedo SEAL

Deployed from a host submarine or any surface or subsurface vessel, Torpedo SEAL is rapidly deployable, easy to operate and extremely cost effective.



SEAL Carrier



SEAL Carrier



Sub SEAL



Torpedo SEAL



# JFD swimmer delivery vehicles

## SEAL Carrier

SEAL Carrier is an 8-man swimmer delivery vehicle designed for the covert insertion and extraction of combat diver units. It operates in three modes; surface, semi-submerged and submerged.

SEAL Carrier vehicles transit at speeds of up to 30kts on the surface before switching to submerged mode for a covert final approach.

On board sensors and navigation systems work together to provide safe transit and accurate positioning day and night, above or below the surface of the water, regardless of vehicle speed or environmental conditions.

In addition to divers and their personal equipment, SEAL Carrier can accommodate additional mission equipment such as sensor and radio equipment, ammunition and explosives, survival equipment and supplies. For operations requiring extended range, the craft can carry additional fuel stored in a separate fuel tank or additional battery packs.

Example applications for a SEAL Carrier include:

- > Delivery of 6-man combat team
- > Host platform for autonomous underwater vehicles
- > Remotely operated weapons platform
- > Harbour patrol vessel
- > Rapid-response anti-piracy craft
- > A built in breathing system adds extra safety for the divers and enables an extended underwater range
- > Several quick mounts for a variety of weapon systems transforms the craft in to a combat craft



SEAL Carrier



10.45 metres  
length



4300kg  
weight



8 crew  
(2 pilots 6 divers)



Mode  
(surface  
semi-submerged  
submerged)



30+ kts  
surface speed



5 kts  
submerged  
speed



40msw max  
depth



# JFD swimmer delivery vehicles

## Sub SEAL

Sub SEAL vehicles are primarily launched from a hangar attached to the casing of a submarine and are released whilst fully submerged, at depths up to 30msw. Sub SEAL vehicles may also be deployed by surface craft or rotary-wing aircraft.

Once launched, Sub SEAL remains submerged for the entire mission. Typically, Sub SEAL carries 8 personnel. The vehicles may approach, or break the surface for communication or reconnaissance purposes.

Sub SEAL has been designed for rapid mission-specific reconfiguration through the change-out of modular sections.

Power is provided by lithium polymer batteries and a vectored-thruster arrangement, affording sprint speeds of greater than 7kts and a range of 50nm.

Example applications for a Sub SEAL include:

- > Delivery of 6-man combat team
- > Host platform for littoral survey package
- > Electronic warfare or reconnaissance platform
- > Port and estuary security



7.4 metres  
length



3500kg  
weight



8 crew  
(2 pilots 6 divers)



Mode  
(submerged)



7+ kts  
submerged  
speed



29  
30  
31  
30msw max  
depth



## JFD swimmer delivery vehicles

### Torpedo SEAL

The Torpedo Seal's hydro dynamic shape and internal space enables 2 divers with combat gear and mission essential equipment to be transported inside the hull protected from the streaming water. It is then able to transport 2 divers and equipment, fully submerged, over a range of 10nm.

Torpedo SEAL may also be easily stowed within the multi-purpose tubes being designed into future submarine designs, or beneath the outer casing of the submarine.

Torpedo SEAL is controlled by a single pilot. It also accommodates 1 passenger and equipment.

Example applications for a Torpedo SEAL include:

- > Extend the operating range of a combat team
- > Underwater survey and reconnaissance
- > Delivery of explosive ordnance
- > Counter-narcotics and harbour patrol



2.6m stowed length  
4.2m deployed length



110kg weight



2 crew  
(2 additional divers can be towed)



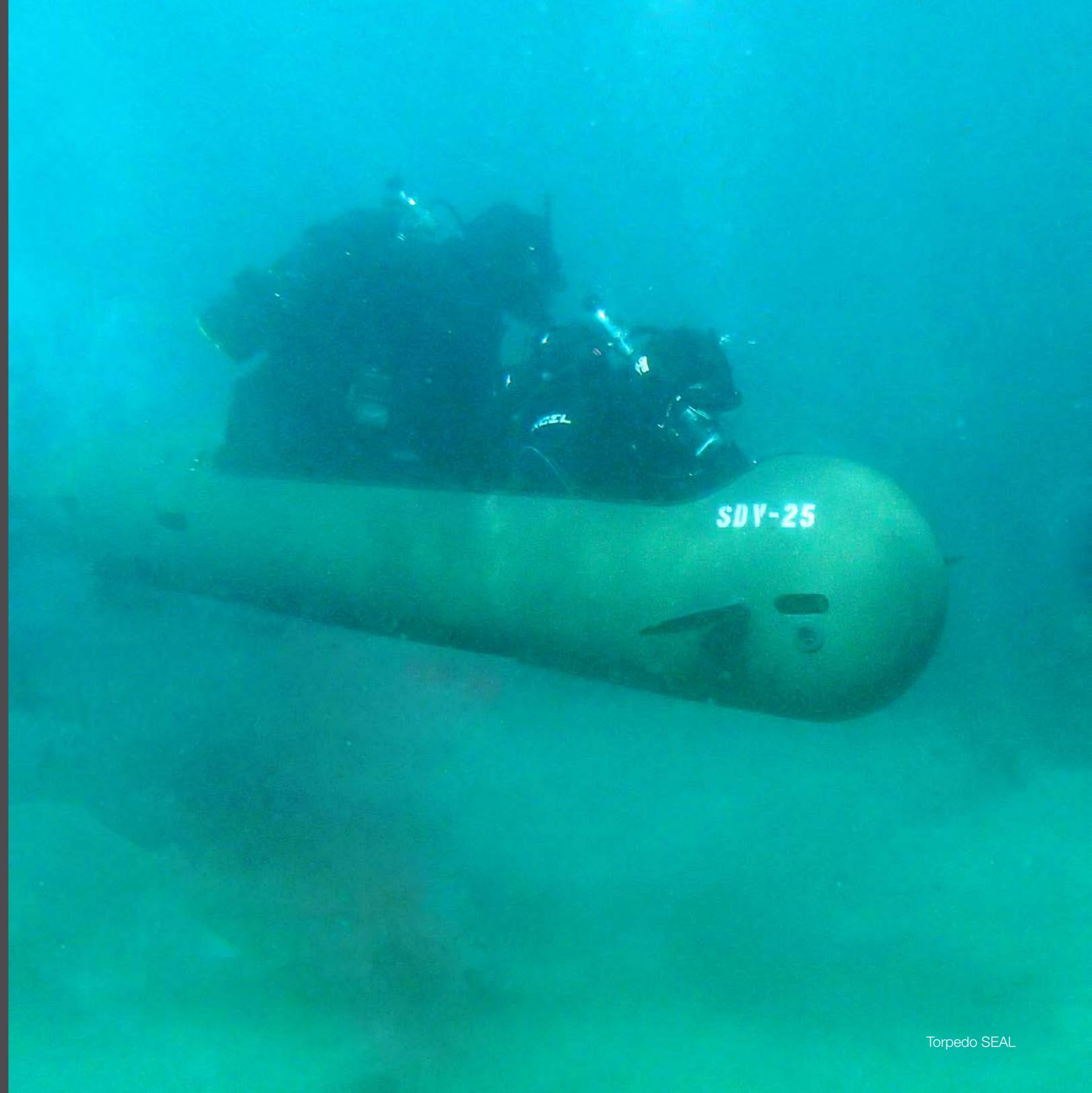
Mode  
(submerged)



4 kts submerged speed



40msw max depth





## Ancillary dive gear

JFD also has a comprehensive range of defence dive gear, featuring a proven low magnetic signature to complement its comprehensive range of defence diving equipment:

- > Shadow buoyancy jacket
- > Defence dive masks
- > Low magnetic underwater swimsuits
- > Low magnetic fins
- > Waterproof bags
- > Divers knives
- > Compasses and gauges
- > DTWC (DIGICOM)
- > Boarding equipment





## Quality with integrity - our commitment

We operate on a global basis and have a simple goal which applies wherever we operate - to avoid any harm to either people or the environment.

### Health and safety

Health and safety is an important factor in all activities we undertake. We carry out all of our work in a manner that shows consideration for our own employees, our clients, contractors and other parties. Our goal for health and safety is for no accidents, incidents or harm to come to people.

The management and control of risk, prevention of harm and compliance with legal and governmental requirements are essential to the success of our business.

Our Health and Safety System complies with the requirements of OHSAS 18001.

### Environment

We strive to minimise any impact we may have on the environment. We have an environmental policy in place to help reduce and eliminate potential harm to the environment from our work or employees. Our Environmental Management System complies with the requirements of ISO 14001.

### Continual innovation

Through continual innovation, we are fully committed to optimising the quality and safety of our products - and indeed the safety of our employees and clients. A HSEQ (Health, Safety, Environment and Quality) Management System operates throughout our business - and this has benefited the safety and efficiency of all who dedicate their lives to the underwater world. Our investment in an extensive test and development programme underpins and strengthens our reputation for innovation, the commitment of our people, and the quality of our support services.

### Quality assurance

Our Quality Management System is certified to ISO 9001.

Many of our products also meet the requirements of various independent directives, including Personal Protective Equipment (PPE), Medical Directive (MD), and Pressure Equipment Directive (PED). Certain JFD designs are also approved against particular codes or standards such as BS 5500 and ASME.

JFD is dedicated to mitigating the risks faced daily by those who spend their lives subsea through our commitments to quality and safety.





Aberdeen | Bremen | Cape Town | Glasgow | Perth  
Portsmouth | Rome | Singapore | Sydney | Vaxholm | Virginia