



# SUBMARINE RESCUE SYSTEMS

A trusted, proven and reliable partner for Submarine Rescue globally

[jfdglobal.com](http://jfdglobal.com)









## OUR PEDIGREE

For over four decades, JFD has been at the forefront of submarine rescue, pioneering solutions that safeguard the lives of those who work beneath the waves. Our history is rich with innovation, proven expertise and a dedication to excellence, positioning us as trusted leaders in this critical domain.

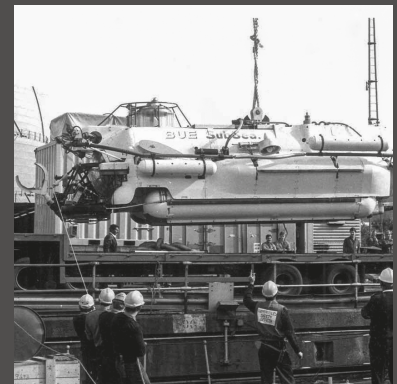


# OUR HISTORY

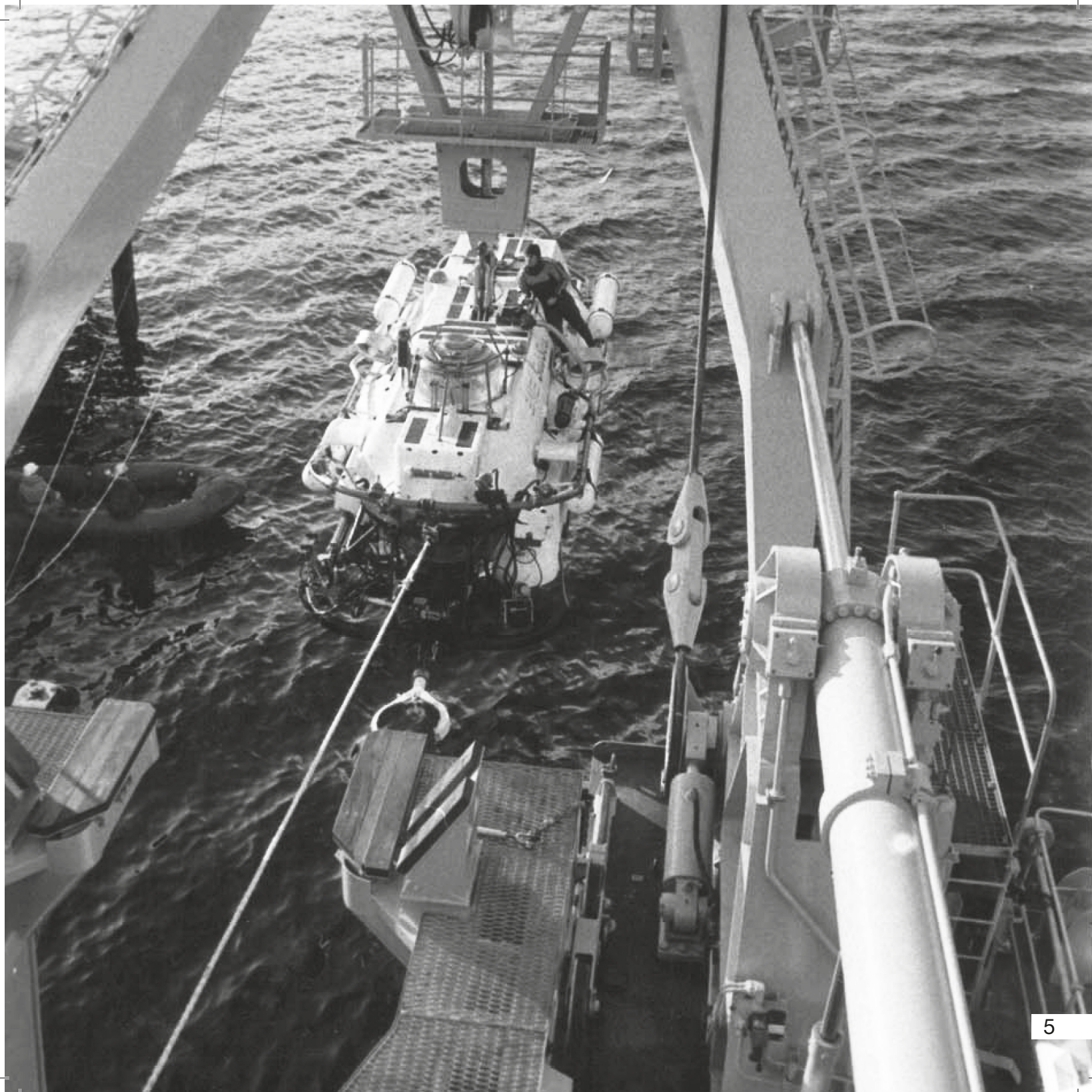
JFD Submarine Rescue origins can be traced back to 1973 following a submarine incident which saw Roger Chapman and Roger Mallinson being trapped on the sea bed for more than 76 hours with fewer than 20 minutes of life-support remaining.

Thankfully they were successfully rescued and Roger Chapman went on to dedicate his life to the safety of those who spend their lives subsea by founding Rumic, the company which would become JFD.

His passion and dedication remains the heart of JFD operations today, Roger's legacy is a 200-strong team for whom submarine rescue is more than just a day-job; for many it is their passion and it is in their DNA.









# REQUIREMENT

Submarine Rescue is one of the most complex and challenging operations in maritime defence; it is not just a contingency, it is a life-saving necessity.

In the event of a submarine incident, submariners may find themselves trapped deep beneath the ocean with limited oxygen, rising carbon dioxide levels, and extreme temperatures. Without an immediate and effective rescue plan, these brave men and women face a dire situation.

## Historic incidents: Lessons Learned

Tragic incidents like the sinking of the Russian submarine Kursk in 2000 and the loss of the Argentine submarine ARA San Juan in 2017 have underscored the critical need for international collaboration in submarine rescue. These events, which became global rescue endeavours, highlight the importance of preparedness and the ability to mobilise rapidly across borders.

JFD has first-hand experience of real-life emergency scenarios having been called out to respond to:

- Sinking of Russian Submarine Kursk
- Trapped Russian Submarine AS-28 Priz
- Missing Indonesian Submarine KRI Nanggala S402

In addition

- Missing Air Asia Flight
- Missing Malaysian Airlines flight MH370





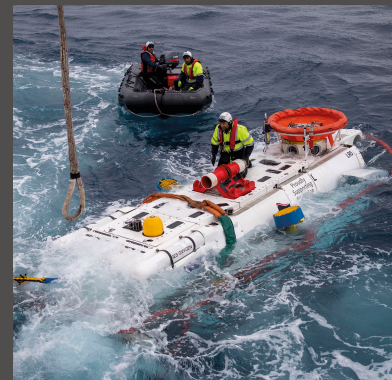
# A COMPLEX ENVIRONMENT

As oxygen depletes and CO<sub>2</sub> levels rise, the window for a successful rescue narrows dramatically requiring immediate and coordinated action. The complexity of a rescue operation is compounded further by factors including: extreme depths, remote geographical locations, communication barriers, weather conditions and the physical constraints of mating angles between a rescue vehicle and the submarine's hatch.

## A Plan for Every Submariner

For navies worldwide, ensuring the safety of their submariners means having a comprehensive and effective rescue plan in place. This includes not only the availability of advanced rescue systems but also the training, coordination, and international agreements needed to execute a rescue operation swiftly and successfully.

**At JFD, we understand these demands. We believe that a robust, reliable, and well-practiced rescue capability is not just an option - it's an obligation.**





## OUR SOLUTIONS

As an established provider to 42 navies, JFD delivers innovative and technically advanced submarine escape and rescue solutions that improve safety and preserve life in the event of a submarine incident.

Our end-to-end capability spans the entire life cycle of submarine rescue systems - from design, manufacture, and integration, to installation, operation, maintenance, training and in-service support. JFD has incomparable experience within this challenging environment.

- Submarine Escape
- Submarine Abandonment
- Intervention Systems
- Submarine Rescue Systems
- Transfer Under Pressure Systems

## TAILORED SOLUTIONS STRATEGIC PARTNERSHIPS

We are a trusted partner, committed to enhancing safety and capability for naval forces worldwide, delivering customised solutions that meet specific operational needs.

Our bespoke approach ensures that each solution is perfectly aligned with requirements, bringing unmatched value to our partnerships.



### 1ST GENERATION RESCUE SYSTEM

In 1999, JFD transformed LR5 into a steel-hulled, Transfer Under Pressure (TUP) capable submarine rescue vehicle. The design for the new LR5, known internally as DSAR-1, formed the basis for future generation SRVs.



### NSRS, NATO

In January 2015 JFD was awarded the contract for the provision of the NATO submarine rescue system under an eight year GOCO agreement.



# JFD RESCUE SYSTEMS



**ROKN DSRV-II, KOREA**  
In December 2006, JFD was awarded a contract to deliver a 2nd Generation DSAR Class submarine rescue vehicle to Korea. The contract included a multi-year in-service support period.



**SWIFT RESCUE, SINGAPORE**  
In January 2007, JFD and partners ST Marine were selected for the provision of a 2nd Generation submarine rescue capability under a 20 year COCO arrangement; the first of its kind.



**JFSRS, AUSTRALIA**  
In December 2008, JFD was contracted by the Commonwealth for the provision of the JFSRS on a COCO basis. In 2020, the contract was extended for a minimum further 4 years.



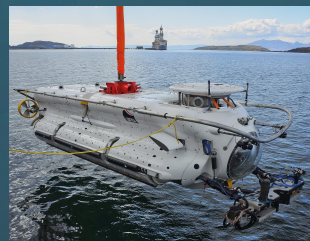
**URF MKII, SWEDEN**  
In May 2011, JFD carried out the complete refurbishment of the Swedish Navy's URF SRV. URF benefits from pull-through of 2nd Generation technologies. A period of in-service support followed.



**ISRS, INDIA**  
In March 2016, JFD was selected to provide two 3rd Generation submarine rescue systems to the Indian Navy alongside a 25 year support contract.



**ASR-II, KOREA**  
In 2019 JFD was selected to provide a new moonpool launched DSRV for the Republic of Korea Navy's (RoKN's) new submarine rescue ship ASR-II.



**3 SRV BUILDS**  
In 2020 JFD conducted the first simultaneous Submarine Rescue Vehicle build completing three consecutive vehicles for global clients while navigating the challenges presented by the COVID-19 pandemic.



**3ISS**  
2022, JFD wins Third In Service Support contract continuing seven years of safety critical operational assurance services to the NATO Submarine Rescue System (NSRS).



# JFD LONG TERM AVAILABILITY CONTRACTS

We manage a variety of in-service support contracts globally, ensuring operational readiness and extending the life of critical assets. We have developed a comprehensive global submarine rescue infrastructure with local capability, expertise, manufacture and testing capabilities across all our 'Home Market' locations which ensures we can provide robust and effective dedicated services to support all local requirements. Our solutions are not just systems; they are lifelines, rigorously maintained and always ready.



SINGAPORE



NSRS

(since)

2010

2018

2009

2015



AUSTRALIA



INDIA X2



## A DEPTH OF EXPERTISE

Our truly global infrastructure not only ensures we are able to respond timely and efficiently across the world, but our clients also benefit from a unique depth of knowledge and strength gained from access to the support of a diverse global team.

We have been able to develop processes, procedures and best practice based on real experience leveraging our global network to effect knowledge sharing, lessons learnt and effective team management and training pathways.

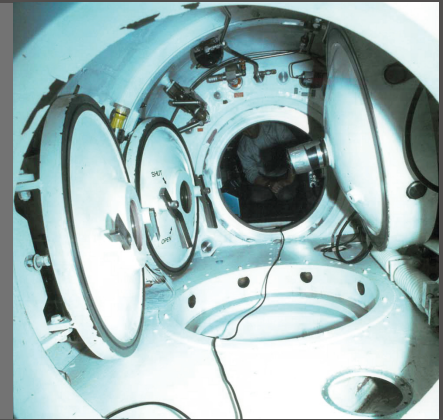
A rigorous set of management systems and processes and an unblemished safety record ensure that the company delivers high quality services around the clock, around the world. JFD continues to set new benchmarks and standards for submarine escape and rescue, this continuous improvement is the hallmark of how we deliver long-term value to all our customers.





## 1973 Origins

Our journey began with our First-Generation Submarine Rescue vehicle, designed, built, operated and maintained by JFD for the UK, and latterly, Australia. The JFSRS still serves the Royal Australian Navy and has changed and adapted as technology, understanding and requirements evolved. Continuous improvement means that the First Generation JFSRS remains one of the most capable flyaway systems in operation today.



## Second Generation

In response to the Kursk and Priz incidents (2000 / 2005), larger and predominantly nuclear-powered navies desired a dramatic increase in rescue capability. Requirements calling for higher capacity rescue and decompression assets would drive the development of Second Generation Submarine Rescue Systems.

Second Generation Submarine Rescue System designed, built and maintained by JFD for the Republic of Korea and the Republic of Singapore operating from a dedicated mothership. JFD also manufactured the NSRS Transfer Under Pressure (TUP) Decompression System.



## Third Generation

JFD's Third Generation submarine rescue system brought a renewed focus on efficient design optimising Time to First Rescue, offering a significant step-change in real-world capability. Providing no lesser capability, whilst minimising the support required by unpredictable and variable external assets (aircraft and trucks, vessels of opportunity, dockside support). JFD delivered two full Submarine Rescue Systems to the Indian Navy in 2018 and successfully navigated the manufacture and delivery of three consecutive SRVs amidst the Covid 19 pandemic in 2021.



## INNOVATION FOR THE FUTURE

At JFD, innovation is the cornerstone of our mission to enhance submarine rescue capability. Submarine Rescue is perceived as both a political and humanitarian tool, but it exists for one purpose; to save life following a submarine incident. With each new generation of rescue system, there is an obligation to improve.





# INTRODUCING THE 4th GENERATION: AGILE

Building on this legacy, our 4th Generation Submarine Rescue System - Agile - optimising transportability, modular configuration and simplified vessel interface flexibility and the complexity of these core mobilisation operations in order to reduce TTFR. These improvements also drastically improve system maintainability and resistance to obsolescence, enhancing assured availability and the ability for navies to ensure they are always 'rescue ready'.

For the first time, a full SRS can be transported via commercial aircraft; drastically increasing the range of air transport options in comparison to current systems, which rely solely on large, limited availability military aircraft. This ensures the Rescue System can, as quickly as possible, get to the DISSUB location within the 72 hours' Time to First Rescue (TTFR) window; a challenge long faced particularly by nations with a large coastal footprint or vast submarine range.

In addition, road transport and mobilisation challenges benefit from JFD's SRS optimised footprint and flexible, containerised configuration adaptable to suit a wide variety of rescue scenarios. The number of available Vessels of Opportunity (VOOs) is increased, which, combined with concurrent sub-assembly, reduced system interfaces and optimised process implementation enables the rescue team to mobilise quickly and efficiently.

The design is optimised for modularity enabling the incorporation of future technology advances including automation, adaptable to suit any navy now and into the future.



Designed  
through  
experience



Modular &  
Containerised  
system



A profound  
improvement in  
transportability



Rapid Mobilisation  
to Vessels of  
Opportunity (VOO)



Rapid Mobilisation  
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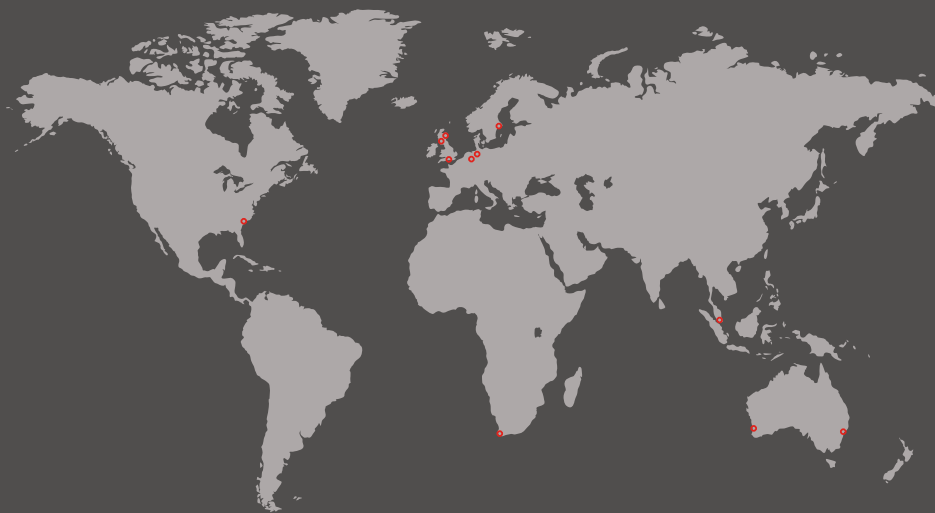


Simplification

**AGILE**







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



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