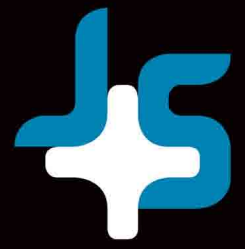


Complete engineering and equipment **support** solutions



J+S Limited



J + S Limited

We are a broad-based engineering and support company with more than 50 years track record of supplying specialist equipment and services to the military. Our expertise lies in providing holistic engineering solutions to a range of customer requirements, the low volume manufacture of specialist products and the support of in-service equipment.

The UK Ministry of Defence and the major prime contractors that supply it have been our principle customers for many years but today we are also increasingly involved in overseas markets.



www.jands.co.uk



Introduction

At J+S we have been providing production and equipment support services to the Royal Navy for over 50 years.

From our roots in the support of sonar sensing equipment for both the submarine and surface fleet, we have broadened our capability into the development and support of Combat Management Systems, Weapons Handling and Discharge Systems and Electro Optical Systems. Our expertise in these areas is second to none.

In recent times, the Ministry of Defence has sought to change its procurement processes for support services from being task and activity orientated to a fixed fee based model, whereby the contractor takes on the asset availability requirement. This is known as Contracting for Availability (CFA) and gives the MoD certainty of spend profile and their required cost reductions. At J+S, we have been at the forefront of adopting this model of service provision and now provide the vast majority of our sonar support services on a CFA basis.

For close to 30 years, we have been the Design Authority for the Combat System Highway fitted widely throughout the surface fleet. We have recently completed a major upgrade programme for the Highway in support of the Type 23 Ship Life Extension Programme and are working on innovative solutions to significantly enhance the available bandwidth of the Highway in order to allow other data networks to utilise the existing infrastructure.

In the last few years, we have expanded our business successfully overseas. Initially, our export drive has been targeted at ex-Royal Navy refit programmes, particularly in Canada (Upholder Class Submarines) and Chile and Brazil (Type 22 and 23 Frigates).

More recently, we have entered other export markets not consequent on the Royal Naval fleet disposal programme and have designed and supplied the hull mounted sonar sensors for the Dutch and Belgium 'M' Class Frigate Refit programme.

We supply our range of miniaturised sonar sensors to the NATO Research Centre in Italy.

In Weapons Handling and Discharge Systems, we are the support provider for the Magazine Torpedo Launch System (MTLS) fitted to the Type 23 fleet and the NATO Sea Gnat Decoy Launch System deployed extensively throughout the surface fleet.

As a Small and Medium Size Enterprise (SME), J+S has a strong pedigree and reputation in our chosen markets. We aim to be innovative, responsive and agile in meeting our customers' challenges. We work effectively with both the MoD and prime contractors. Amongst the latter group our customers include BAE Systems, Ultra, Atlas and Thales with whom we have recently completed a major sub-contract programme for the design and build of cabinets as part of their Scorpion programme.

We are a company owned by the Directors and Managers. We have an outstanding 50-year track record in the provision of defence equipment and support services. Our mission is to continue to provide a first class service to our customers for the next 50 years.



David Jeffries, Managing Director



J+S Head Office

Supporting UK and International Navies

Combat System Equipment Interfaces

Combat System Data
Networks

Counter Measure Deck
Launcher Systems

Torpedo Launch
Systems

EW and Weapon
System Cabinets



Underwater
Telephone

Hull Mounted
Sonars

Towed Array

Hydrographic
Equipment

Echo Sounders



Magazine Torpedo Launch System

In Service Support

Supporting naval equipment lies at the heart of our business and over the years we have developed our service to meet the evolving priorities of our customers. From traditional Post Design Services (PDS), spares and repairs contracts, to availability based Contracting for Availability arrangements; we can tailor our support offering to match the customers' specific requirements. We deploy experienced engineers, working within a mature support infrastructure to ensure the operational availability of complex equipment.

We support a wide variety of equipment types including; sonar and acoustic systems, data highways, deck mounted torpedo and decoy launch systems, flight deck landing aids, cameras and optical systems, specialist oceanographic and geophysical sensors, submarine weapon interface systems, pressure hull penetrators and glands as well as a broad range of miscellaneous electro-mechanical and hydraulic sub-systems.

Post Design Services, Spares, Repairs

We provide a cost effective post design and repair service to assure the long term availability of naval equipment. Offering obsolescence management and resolution, technology insertion, reverse engineering, equipment re-design and incremental upgrades to maintain capability.

Inventory Management

Through careful analysis of usage rates and equipment failures we ensure that appropriate holdings of spare parts are maintained.

Waterfront and Technical Support

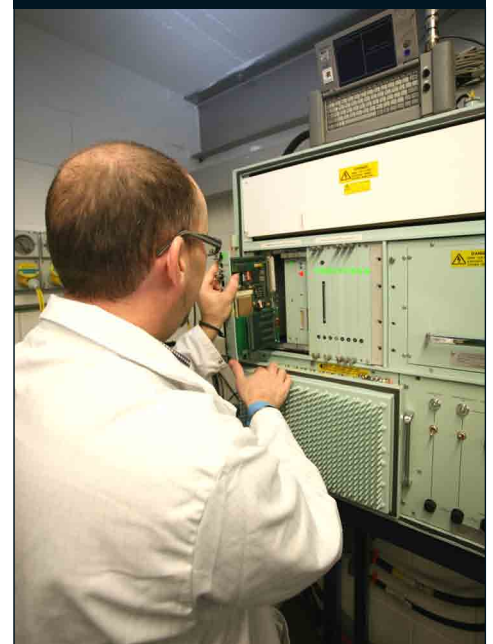
We offer 24-hour technical advice as part of our global support service and our mobile engineering team is available at short notice to provide waterfront assistance to dockyard and naval personnel.

Contracting for Availability

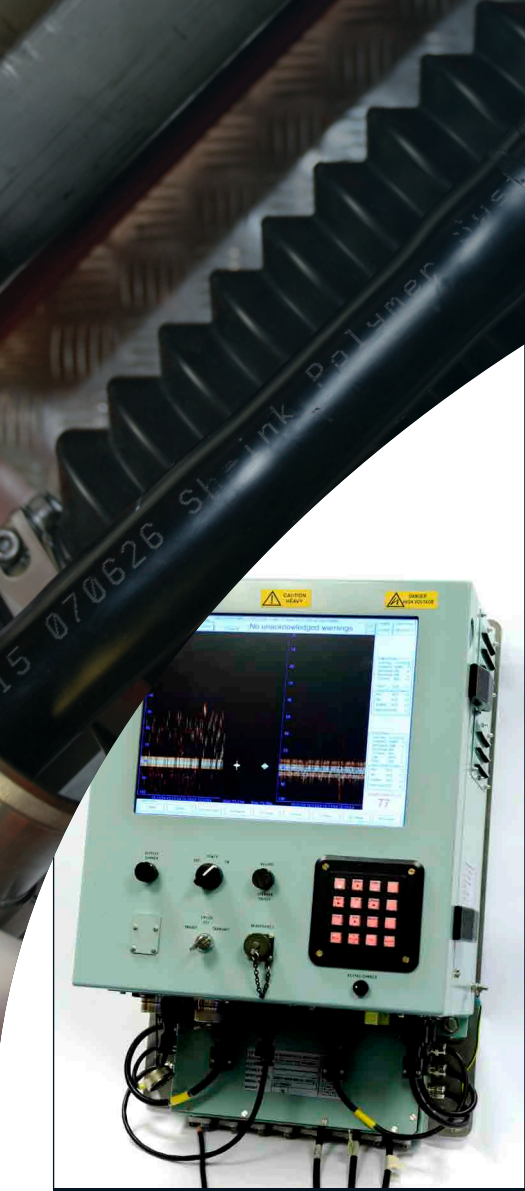
J+S Ltd is experienced in Contracting for Availability where we accept responsibility for the operational availability of key systems. We take a long term view of equipment reliability issues, make measured investments in improvements and ensure that optimum inventory levels are maintained.



Sea Gnat Reference Site



Sea Gnat Reference Site



GSA8 Camera

Equipment Upgrades and Improvements

We offer a 'one-stop service' for equipment design, development and production. Our in-house engineers provide turn-key solutions to hardware, software, electromechanical and integrated engineering challenges.

Delivering incremental upgrades that reduce Through Life Costs, take advantage of new COTS technologies and improve system reliability. We aim to deliver long-term operational capability at a fraction of the cost of introducing brand new, 'next generation' systems.

Engineering Skills

Development programmes are lead by an experienced Systems Engineer with overall design ownership. He/she can call on Electrical and Electronic Engineers, Software Developers and Mechanical Engineers to execute specific work packages. Our robust systems approach is supported by industry standard tools such as DOORS and Solidworks. Recent projects have included the design of missile test stands, electronic equipment enclosures and transducers.

Obsolescence Management

We identify and assess obsolescence issues and then offer low-cost practical solutions to resolve them. Typically, our solutions follow an open architecture approach, incorporate COTS components and are modular in design. Recent examples of this approach include the refurbishment of deck launched torpedo systems, gun control cameras and data networks.

Acoustic Engineering

With a comprehensive transducer modeling, design and manufacture capability we specialise in thin line arrays, miniature integrated acoustic components and digital sensors. We supply and maintain hull mounted and towed array systems to the Navies of the world.



Echosounder 800



CU Mk III Data Network Board



MTLS Obsolescence Upgrade



Specialist Manufacturing Capabilities

We focus on high-variety, low volume or specialist production. Working with electronic, mechanical, cable and acoustic assemblies, we have a history of complex repair work and new manufacture.

Our test and manufacturing facilities, coupled with our design skills and process ensure our solutions are fit for purpose. We are a responsive and cost effective "one-stop shop" for customers with demanding or bespoke engineering requirements.

Recent 'products' supplied by us include:

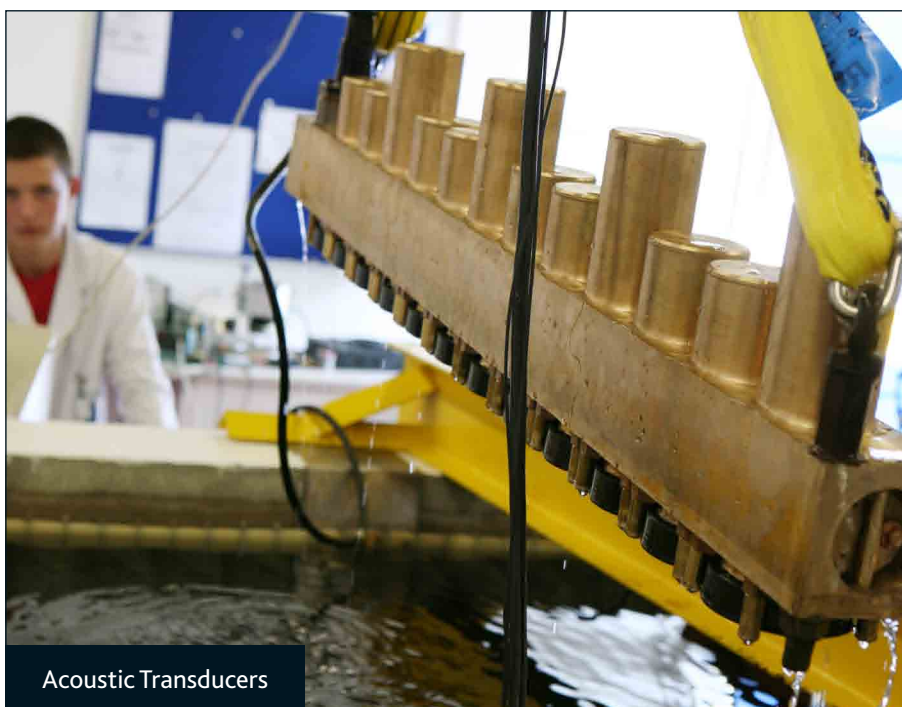
- Transducers and Hydrophones for all Sonar Systems
- HVME Hydrophones
- Submarine and surface ship echosounders
- Miniature integrated acoustic components
- Towed Arrays
- Thin Line Arrays
- Electronic Cabinet enclosures
- Pressure Hull Penetrators for Submarines
- Military Data Networks
- Bespoke Cable Harnesses
- Deck Mounted Launchers



Wiring and test function



Electronic Cabinet Enclosures



Acoustic Transducers



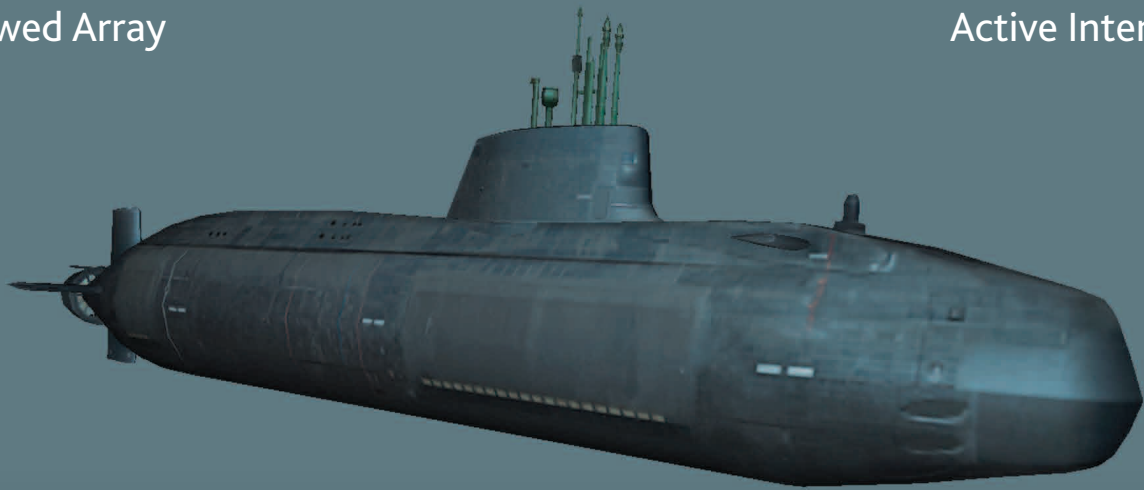
Supporting UK and International Navies

Echo Sounders

Underwater Telephone

Towed Array

Active Intercept



Hull Vibration and Monitoring Equipment

Cavitation Indicator



Underwater Technology

Acoustic Transducers

We offer an expanding range of acoustic transducer products that covers both traditional designs for established systems and innovative new products to meet the future demands of the acoustic sensing market.

Recent additions to the product range include miniature, low profile, low power and fully integrated sensor configurations. These miniaturised hydrophones and pre-amplifiers are either self encapsulated or embodied into a miniature bulkhead and provide key building blocks for systems that are small in size but high in acoustic performance.

Our integrated sensor products are already being used by international research organisations in applications such as mammal monitoring, harbour security and hull vibration monitoring.

Our new Low Profile Array (LPA) incorporates these low noise, low power components and the latest material technologies in a very small diameter array to deliver performance more usually associated with more cumbersome line array systems. With its lightweight and low-cost, the LPA is ideal for towed deployment from OPV's and autonomous vehicles and can also be deployed statically as an acoustic 'trip-wire'.

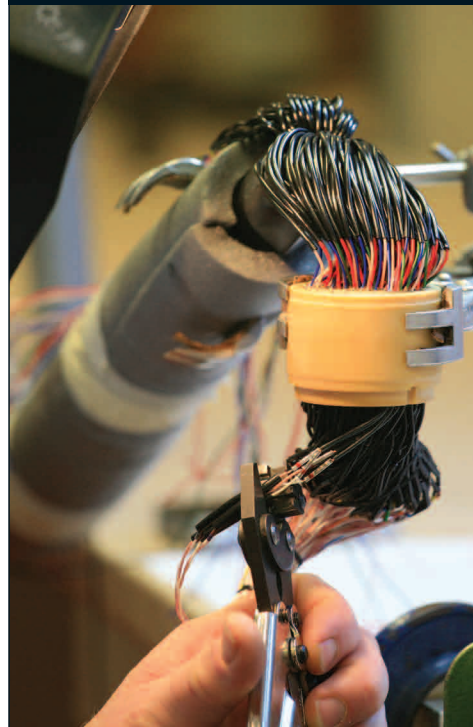
Penetrators, Glands and High Voltage

We provide a range of high integrity submarine pressure hull penetrators, cable glands, HV termination and breakout devices that ensure the reliability of sensitive sub-sea control, power and data transmission systems. Our understanding of the marine environment, the critical moulding processes and relevant material properties when subject to prolonged pressure are key to delivering bespoke and standard solutions.

Our electrical terminations include low and high (33kV) voltage and both copper and fibre connectivity.



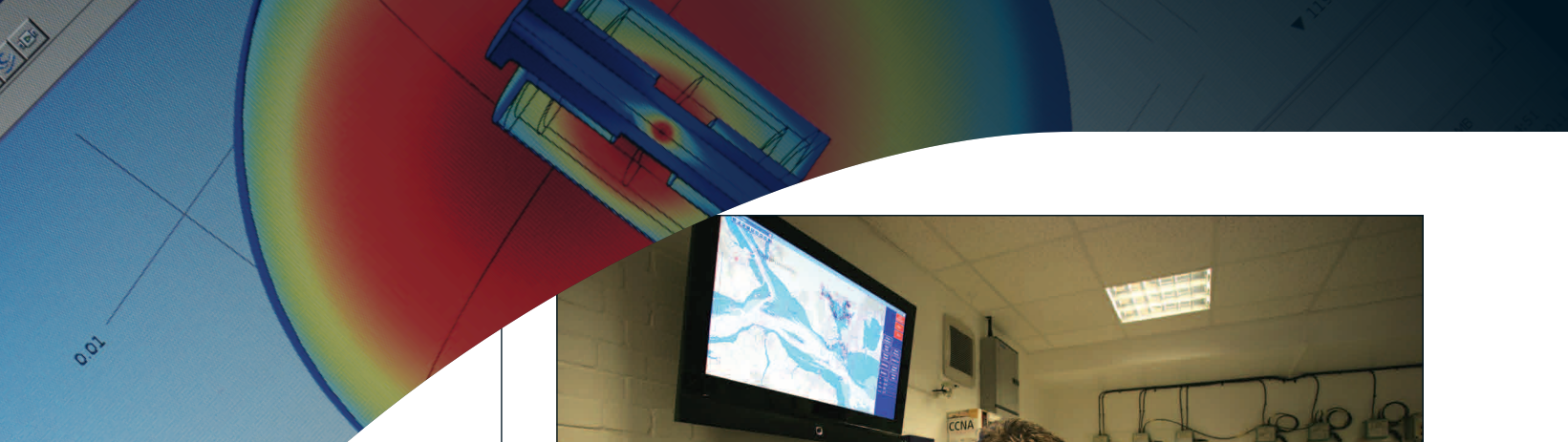
We provide a vast range of Transducers and Hydrophones



Pressure Hull Penetrator



Towed Array Section alongside Low Profile Array



Network Lab

Network Systems Technology

Modern warfare demands a reliable and robust network around which sensor, weapon, communications and spatial information can be rapidly distributed and exploited by the command team. Our expertise in open network architecture, high performance real-time embedded software and complex hardware interfaces has been crucial in developing and supporting the Combat System Highway (CSH) on the RN surface fleet for the last 25 years.

Our expertise also covers Combat System equipment, such as the Magazine Torpedo Launch System and intelligent interfaces for the Command Support System. We provide legacy equipment support as well as innovation using the latest technology to provide open and supportable network solutions and equipments for the future.

Recent innovations include dramatically increasing available bandwidth and running IP protocols on the CSH without affecting the existing CSH infrastructure. Additionally our open IP bridge allows equipment application programmes to run between the CSH and other LANs, with these applications de-coupled from the underlying network protocols.

Simulation and Stimulation Technology

Integration, acceptance and operator training associated with combat systems are expensive activities. Robust configurable simulators and stimulators provide a cost effective alternative.

Our range of simulators and stimulators for the CSH, radar, interrogator, weapon and command equipments provide user friendly graphical interfaces, configurable modelling parameters and flexible scenarios. These products meet stringent real-time performance criteria and are developed with re-useable modular design blocks to reduce risk and cost.



Combat Systems Highway CS2+



CSH Lab



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