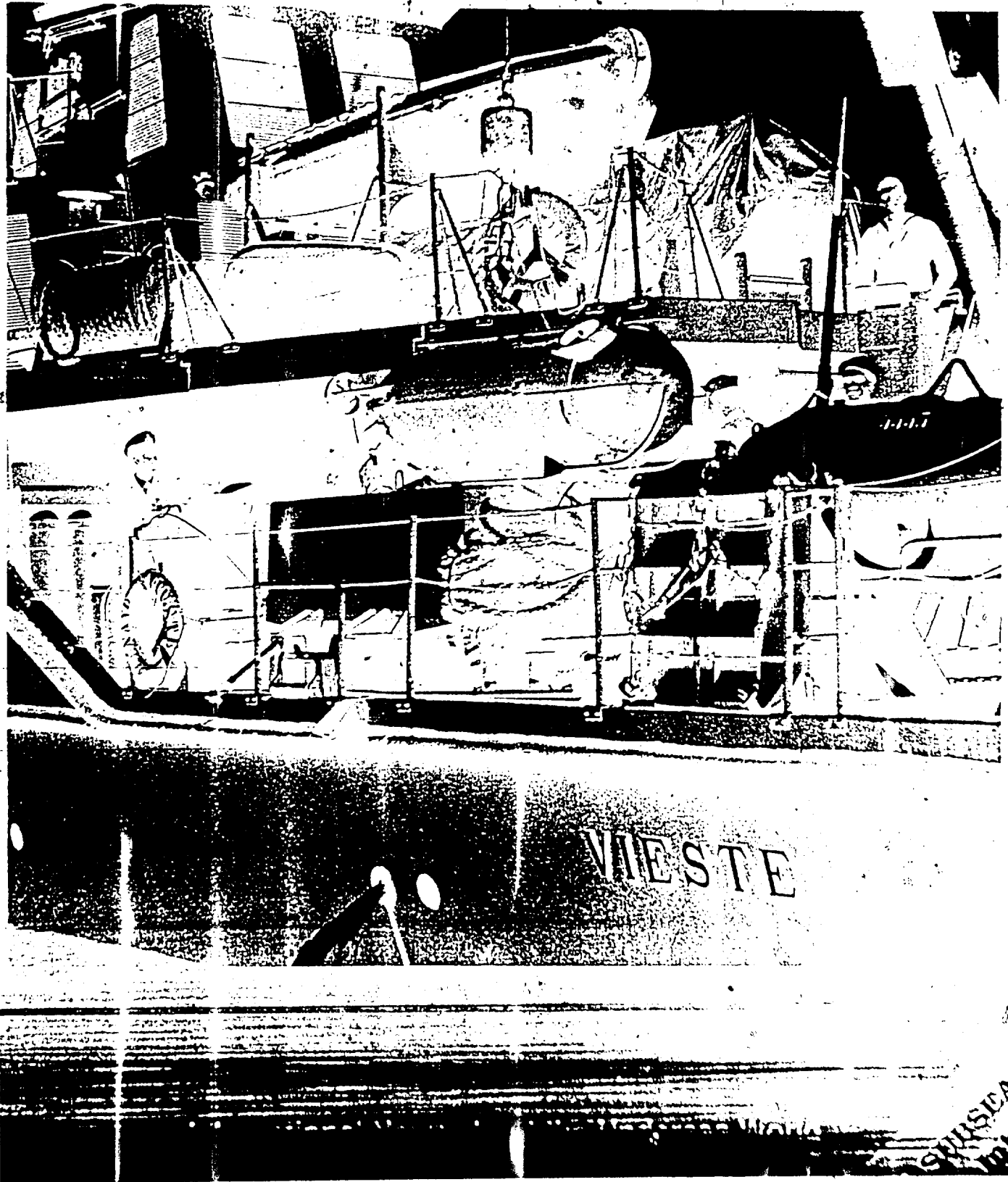


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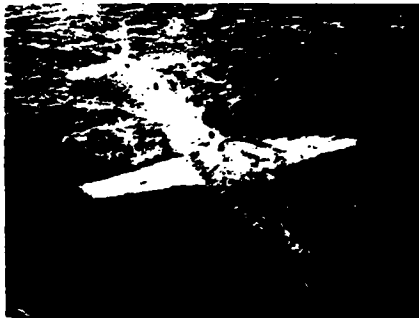
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EUROPEAN DEFENSE  
Information  
Inside

## TOWTAXI

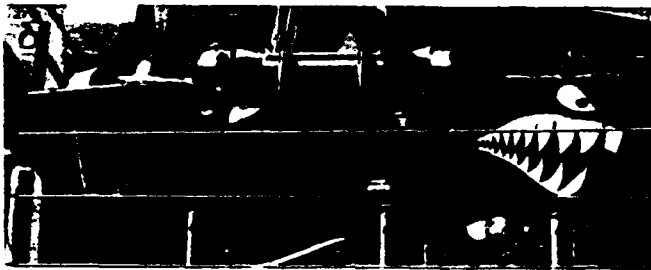
British Aerospace has designed Tow-taxi, a towed underwater vehicle that can be fitted with side scan sonar and other sensors and could have applications in mine countermeasures. Normal operating depth, say the designers, is 100 meters, but a maximum of 250 meters can be sustained. Towtaxi was developed under MoD/UK funds and it was recently delivered to ARE, Portland for further trials and operations. *More information by circling 134.*



Towtaxi

**MCM-1** is the designation for the U.S. Navy's newest mine countermeasures ship, the *USS Avenger*. Commissioned in September 1987, the ship is fitted with the GE An/SQQ-30 mine-hunting sonar, the Magnavoix AN/SSN-2 Precise Integrated Navigation System (PINS) and Honeywell's AN/SLQ-48 Mine Neutralization System. Two more *Avenger* class MCM ships are scheduled to join the fleet this year. A total build of 14 had been authorized but Congress cut three out of the budget. The MNS was prototyped by the Naval Ocean Systems Center, San Diego, in the mid-1970s.

*MNS vehicle (left)*  
*USS Avenger (below)*



## NEW SALVAGE TOOL DEVELOPED BY NOSC

Naval Ocean System Center, San Diego, has developed a lightweight, stainless steel tool that has applications for marine salvage operators. NOSC designers **Stan Hoard** and **Charlie Reader** based their design on the toggle bolt that is used to provide an anchored stud in a hollow wall. It is an enclosed eyelet with a threaded bolt attached to one end and a squared stud at the other. The threaded bolt has a nut with two-rounded studs welded on for holding the two spring-operated formed toggle wings. It can be operated underwater by a diver or by a manipulator. The device is inserted in a hole in the object to be recovered with the toggle wings compressed. Once fully inserted, the wings spring open. A hook or wire/rope line is then attached to the eyelet for recovery of the object.

NOSC has filed a patent application for the device which is formally called, "The Threaded Bolt Eyelet Retainer With Extended Toggle Wings." Guys, it just can't go through life with that name. Anyone care to suggest a better one? *ET*

## J/V CERAMICS COMPANY

Pyzotec Ltd is a joint venture company between Lodge Ceramics, Rugby, UK, and EDO Corporation, Western Division, Salt Lake City, Utah. It has been formed to manufacture in the UK the EDO range of Piezoelectric ceramic products for commercial and military

applications. Pyzotec is based at Lodge Ceramics' facility in Rugby and products for the European market will be manufactured there with special emphasis on exactly matching and controlling the quality of the raw materials and processes of EDO's U.S. operation.

**David Legg** is the Managing Director of Lodge Ceramics and Pyzotec. Both companies are subsidiaries of Smiths Industries Plc.

*For more information, circle 135.*

**SMITHS INDUSTRIES** is one of Britain's major defense contractors. Its Aerospace & Defence Group has over 5,000 employees and there are development and manufacturing centers in the USA and the UK.

SI has developed SNAPS, a combined navigation and tactical plotting system capable of plotting and updating 128 simultaneous moving or stationary targets. SNAPS has been selected by the Royal Navy as the navigational standard for surface ships and submarines. It is also being evaluated by the U.S. Navy. SI has also developed the Hi-Scan Sonar, a new electronic beam-forming sonar that can be used on ROVs and submersibles. *Circle 136.*

## DATA LOGGING DURING NAVAL EXERCISES

Qubit has now supplied a total of five TRAC HL portable data logging systems to the Admiralty Research Establishment of the Ministry of Defence (Navy). Using TRAC HL, navigation and other data are logged during naval exercises on 20 Mbyte removable Winchester Discs for subsequent analysis. The compact TRAC HL can bring advanced data logging to very small marine craft. Its rugged design means it can also be used for military vehicles and in helicopters.

## NAV-SCAN

Sonardyne Ltd, Fleet, England has developed the Nav-Scan system which integrates the Type 7404 Scanning Sonar with the Type 7408 Mini-ROVNAV. This provides integration of high-accuracy long baseline (LBL) positioning using intelligent transponders with high resolution scanning sonar. Acoustic transponders are