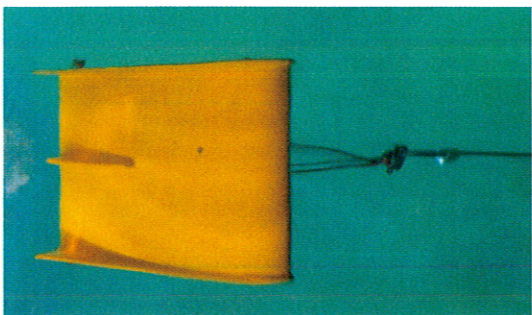


# Babcock completes trials of SSBN communications buoy

■ BY RICHARD SCOTT

Babcock Integrated Technology has completed towing tank trials of a new Very Low Frequency (VLF) submarine communications buoy (SCB) shape in support of the UK's Successor nuclear-powered ballistic missile submarine (SSBN) programme. The work constitutes one of four UK Ministry of Defence (MoD) studies won by the company to examine SCB requirements for a future SSBN.

Receive-only VLF communications are used by SSBNs while submerged to receive broadcasts from a shore-based operating authority. The buoy itself is towed behind the submarine and is required to be capable of receiving radio signals at any time and in all conditions. This means it must remain at a controlled depth be-



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■ Babcock has performed hydrodynamic testing for a new SCB.

low the surface, while remaining covert, and having the ability to respond and control its flight over a range of flow conditions.

The purpose of Babcock's recent series of tank test trials, which took place at QinetiQ's towing tank facility at Haslar, was to produce experimental data

that could be used to validate computer models used to simulate the complex flight dynamics of SCB designs. This is seen as an important step in ensuring that future enhanced SCB systems are designed and optimised with the aid of the latest computational models that are capable of accu-

dynamics. Tests are conducted across a wide range of tow speed and wave profiles to gather as much information as possible. Results are being compared with simulation results.

The recently-completed hydrodynamic tank tests form one of four contracts won by Babcock support of a new SCB design. The first was a concept design study, this being followed by a contract to mature the preferred concept further, specifically looking at underwater flight dynamics of the buoy. The third was a development and cost study to construct and commission an SCB system as part of a technology demonstrator programme. Finally, an integration study contract will investigate how the selected SCB could be installed into the submarine platform.

A contract for future design and development of the SCB is expected to be let to industry thereafter. A technology demonstrator should be fitted to a UK Royal Navy submarine within the next five years.

## Desman 'finger of death' aids French Tigre helicopter crews in Afghanistan

In response to an urgent operational requirement, French Army Tigre HAP attack helicopter crews deployed in Afghanistan are being equipped with glove-mounted infrared (IR) laser pointers developed by French company Desman SARL. The ultra-lightweight multi-function LD 120 H LA pointing system, which is strapped to the back of the pilot's gloved hand using Velcro, combines a diode laser pointer with ultraviolet (UV) and white-light sources, writes *Rupert Pengelley*.

The laser, strapped to the index finger, projects a variable-diameter IR beam that can be seen through night vision goggles over extended distances, and can be used for target indication and confirmation between airborne platforms and ground troops. Strapped to the middle finger is the UV/white-light LED unit to provide supplementary illumination of ground objects, power for both units being provided from a control unit with integral 3V battery power supply (two AA batteries) strapped to the user's

forearm. Total weight of the system, including batteries, is 280 g, and its operating temperature range is -10/+50 degrees Celsius.

The pointer is activated by pressing on a microcontact positioned between the wearer's index finger and thumb, such that the pilot can indicate a point on the ground while continuing to maintain a grip on the helicopter controls. Its Class 3B laser diode, which is used with a filter in training, has a 120 mW output with a minimum beam divergence of 0.28 mrad and an effective range of several kilometres. The intensity of the 0.5W LED lamp unit is governed by a potentiometer.

Coalition forces in Afghanistan commonly use (non-eyesafe) laser designators to achieve similar target hand-offs between air and/or ground units. This calls for specialist marked-target seeker/designators which are not carried by all units. The French Army, in particular, is not due to receive the upgraded HAD version of its Tigre attack helicopter, which will have a laser designator, before 2012.



■ Desman's 'finger of death', the LD 120 H LA multifunction target pointer, shows the laser emitter on the forefinger with its adjustable divergence for pointing and large-area illumination, and the LED UV/white-light lamp on the middle finger.

For operation with non-specialist troops, coalition forces have therefore in addition been using IR laser pointers, chief among which is the hand-held IZLID unit produced by Meyer in the US. However, the IZLID, introduced into service in the early 2000s, is considerably bulkier than the Desman LD 120 H LA, which in addition enables the

user to use his or her hand for other tasks at the same time.

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