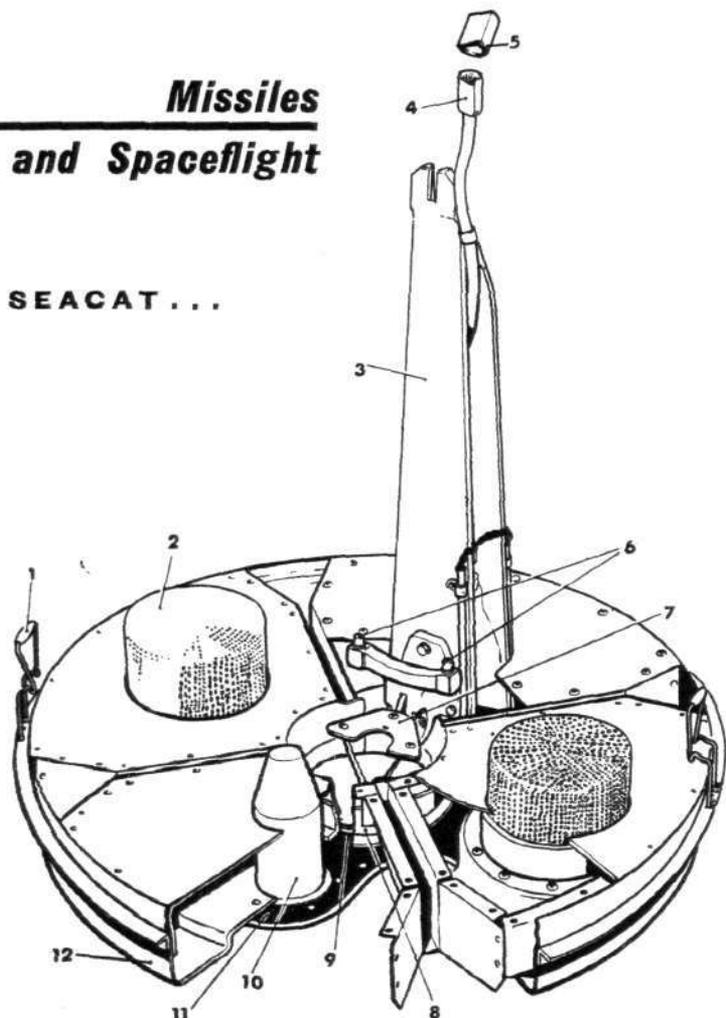
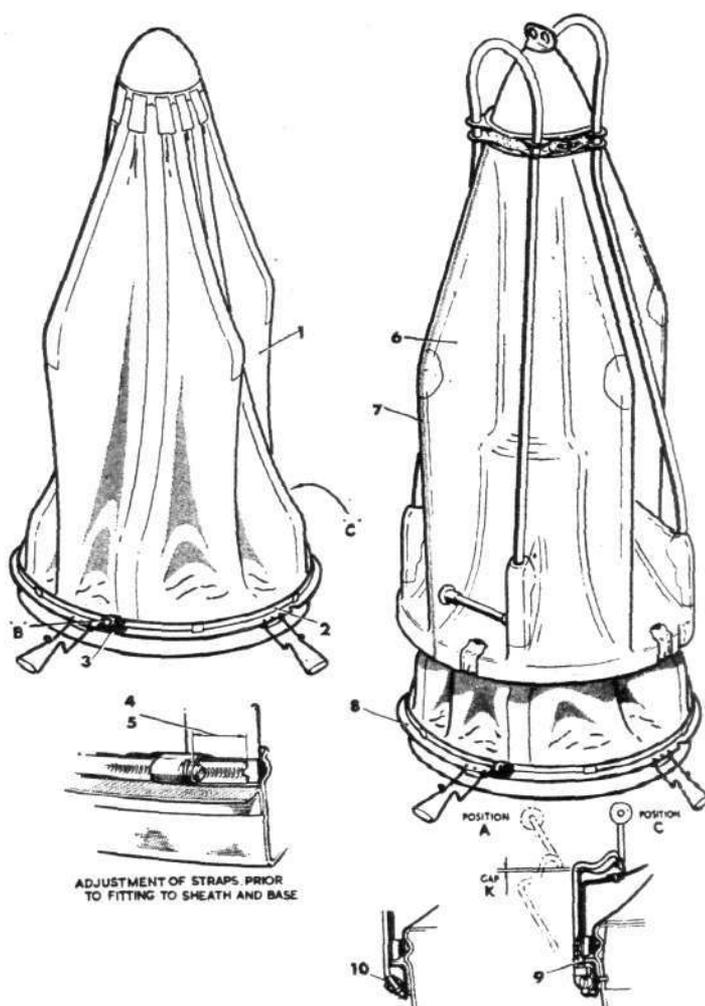


## Missiles and Spaceflight

### SEACAT...



Canister base: 1, quick-release latch; 2, desiccant container; 3, support beam; 4, pull-off plug; 5, dust cap; 6, missile-support pins; 7, latch plate; 8, efflux deflector cone; 9, blow-out blast plate; 10, torque location-pin socket; 11, reinforcing plate; 12, base pressing



Sheath and canister cover: 1, flexible sheath; 2, adjusting strap; 3, location marker; 4, joint "B" dimension  $0.50 \pm 0.10$  in; 5, joint "C" dimension  $1.05 \pm 0.10$  in; 6, rigid cover; 7, red marker strip; 8, base; 9, locating spigot; 10, latch-retaining thimble

The reported liveliness was found to have little or no effect on miss-distances, and it is significant that after one or two live firings aimers agreed that the simulator had been very representative of actual flight conditions.

It is appreciated that, with any radar system, it is still possible for an aircraft to approach at extremely low altitudes and escape detection until it comes within a range which permits little time for long firing sequences. Seacat, with its instant readiness, obviates this difficulty. It has been possible to integrate Seacat with British and foreign blind-fire directors with conspicuous success. On ships of the Royal Swedish Navy, for example, Seacat is integrated with a derivative of the M4 radar fire-control system manufactured by Hollandse Signaalapparaten.

The M4 equipment, which is used by several NATO countries, was developed by the Dutch company for the control of anti-aircraft gunnery systems. Seacat is designed to replace the existing standard weapon, the 40mm gun, and a conversion of the existing fire-control system into the Seacat M4 system offers no major problems in ship fitting. Navies already fitted with 40mm guns can thus convert their installation to Seacats, thereby increasing considerably the effectiveness of their close-range defence, with little modification to existing ship equipment.

#### Tigercat—a Land-based Variant

Tigercat is a land-based variant of Seacat, with the same attributes of simplicity and cheapness. It is instantly ready for defence against low-level attacks—or for use against surface targets if need be—and is particularly suitable for the defence of small tactical targets such as important bridges, fuel dumps and HQ sites. The missile itself is identical with Seacat.

Tigercat is capable of integration with various radar systems, but good optical visibility is usually required for an aircraft to make low-level attacks on ground targets—a condition which favours a

purely visual command-link system. In general it can be said that the use of radar could provide acquisition information and tracking capabilities beyond that of a purely visual system, but in many cases the local terrain is such that it is doubtful whether radar would be of any assistance.

After studying numerous alternative arrangements, Short and Harland have designed the basic Tigercat system as a three-missile launcher and a director, each mounted on a two-wheeled trailer chassis. Several methods of transporting both missiles and personnel are possible, a typical arrangement being a Land-Rover vehicle for each trailer. The size of the crew depends on the type of operation and particular tactical situation; only one man need be in action at any one time, but two additional men are required for reloading.

The Tigercat director chassis can be stabilized by three jacks. The aimer is stationed in the director on a seat which he can rotate and lock on any bearing. Attached to the seat is a structure with binoculars, firing button and thumb-operated joystick, and a fixed transmitting aerial for the guidance system. Bearing and elevation information from the binoculars is transmitted to the launcher via a simple computer. The latter inserts corrections to allow for separation of director and launcher, gravity drop, wind speed and direction, thus ensuring that the missile will enter the aimer's field of view shortly after launch. The launcher then moves in bearing and elevation so that when the missile is fired it will enter the aimer's field of view. The guidance transmitter is situated at the rear of the director trailer.

The Tigercat launcher trailer is likewise stabilized when in action, by four jacks, and incorporates an electro-hydraulic system which moves it to the correct bearing and elevation as determined by the aimer's sight. As with Seacat, the emphasis throughout the Tigercat system is on simple, high-reliability units with the minimum of complication.