

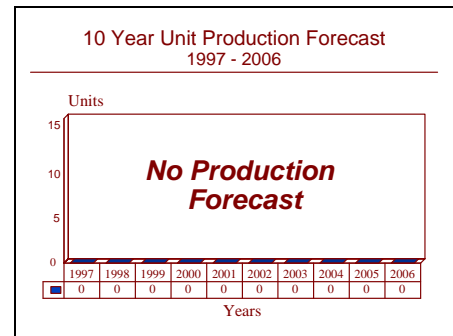
ARCHIVED REPORT

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Scimitar - Archived 4/98

Outlook

- In operational service
- No additional production is expected



Orientation

Description. Multimode jammer with multi-target handling capability tasked with countering missile guidance target and acquisition radars.

Sponsor

Racal Radar Defense Systems
(Formerly Thorn-EMI Sensors Division)
Manor Royal
Crawley

West Sussex RH10 2PZ
United Kingdom
Tel: +44 1293 528787

Contractors

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Tel: +44 1293 528787

Licensee. No production licenses have been granted.

Status. In service.

Total Produced. A total of 13 systems have been installed on warships. Allowing for a shore-based training system per customer, this gives a total of 18 known systems.

Application. The Scimitar jamming system has been installed on large surface ships including Type FS-1500 and MEKO-200 frigates and a cruiser.

Price Range. Based on the known costs of equivalent systems, a unit price of approximately US\$3.0 million is projected.

Technical Data

Characteristics

Frequency range:	I/J-Band (8-16 GHz)
Output pulse:	1.5 kW
Output continuous wave:	150 W
Frequency channel sensitivity:	-60 dbm
Antenna gain:	23 Db

Design Features. SCIMITAR stands for "System for Countering Interdiction Missiles and Target Acquisition Radars," a contorted acronym if ever there was one. The system was developed by Thorn-EMI as a complementary system to the Thorn-EMI RAPIDS and CANEWS ESM systems. It bears numerous similarities to the Ramses jammers and has been variously described as a NATO version or "export derivative" of Ramses. Scimitar can, however, be operated as a "stand-alone" system and is designed to cope with multiple threats, prioritizing and

dealing with new threats as the tactical situation develops. Full jamming capability is achieved using CW, programmed band and wide band noise, range gate pull-off, scan-rate and swept scan rate modulation, inverse scan gain and false target generation. The Scimitar system is capable of countering "smart" ECCM.

Operational Characteristics. Scimitar is configured in two cabinets, one ECM RF and one processing, with antennas providing 360-degree coverage.

Variants/Upgrades

There are no known variants of or upgrades applied to this system. It is, however closely related to the Ramses jamming system and is intended to be closely

complementary with the RAPIDS and SPHINX ESM equipment.

Program Review

Background. Following its introduction the Scimitar system was specified as the standard EW fit on the FS-1500 class frigates. Six of these have been sold, but market opportunities for the ship were severely limited by the emergence of the more flexible and export-acceptable MEKO class ships. Argentina specified Scimitar for its MEKO-140 class corvettes, this installation being delayed by the Falklands conflict in 1982. Although the ECM fit on those corvettes as listed by naval reference books is the standard Racal RCL/RCM systems, this is incorrect and recent photographs have shown that the Espora class are now equipped with the Italian INS-3 integrated EW system. This probably reflects the problems in installing and maintaining complex systems in the face of an arms embargo.

moved from its existing location in Hayes to the MEL site in Crawley. Rationalization to reduce internal competition between products has not affected the availability of Scimitar and the system is still available and is being actively marketed. No installations other than those identified in Argentina, Colombia, Malaysia and Peru have been detected. Scimitar is not used by the Royal Navy and is an export-only system. As such it has achieved only a very limited market penetration.

A further single order for the Peruvian cruiser, *Almirante Grau*, was delayed due to economic pressures but photographic evidence now indicates that installation has taken place. Two systems were installed on the Netherlands Navy Tromp class destroyers. These may have been the two systems originally built for the pair of incomplete Argentine MEKO-140 corvettes.

During 1992, the Malaysian navy ordered two frigates of the Lekiu class from the Yarrow shipyard in the UK. Project management is being provided by GEC plc, which, in the most part, has specified GEC systems for the ships. However, Scimitar jammers are included as part of the electronic warfare outfit.

Following the acquisition of MEL by the Thorn EMI group, all MEL activities were integrated with those of the Thorn EMI Sensors division and that division

Throughout 1993, GEC plc and Thorn-EMI started a long and involved process, the intended result of which was the acquisition of the defense interests of Thorn EMI by GEC and the merging of the EW side of those operations into GEC-Marconi Defense Systems. These negotiations eventually broke down and, in their place, Thorn-EMI started analogous negotiations with Racal. These were successful and the Thorn-EMI Sensors Division became part of Racal Radar Defense Systems.

Funding

The Scimitar system was designed and developed as a private venture using corporate funding.

Recent Contracts

No contractual information has been made publicly available.

Timetable

	1980	Ordered by Argentina for Espora corvettes
	1981	Ordered by Colombia for Caldas frigates
Apr	1982	Argentine order believed canceled
	1983	Ordered by Malaysia for Kasturi frigates
	1985	Ordered by Peru for cruiser <i>Almirante Grau</i>
	1992	Specified by Malaysia for Lekiu frigates

Worldwide Distribution

The following worldwide distribution list is obtained from the Forecast International World Naval Electronic Warfare Database.

Argentina (4 on MEKO-360 FF)

Colombia (4 on FS-1500 FF)

Malaysia (2 on FS-1500 FF, 2 on Lekiu FF)

Netherlands (2 on Tromp DD)

Peru (1 on De Ruyter CL)

Forecast Rationale

The success of negotiations with Racal put a serious obstacle in the way of further exploitation of Scimitar. While Thorn-EMI has superior ESM technology to that adopted by Racal, this situation does not apply to active jammers. Here, Racal probably has the decided technology edge. As a result, Scimitar is likely to be discontinued in favor of Racal's own products.

Scimitar appears to have evolved as a simplified and "cooled down" export version of the Canadian/Netherlands Ramses system. It was probably developed as an attempt to exploit Ramses technology in a less expensive and more accessible package aimed at the export market. This ancestry has endowed it with its most serious limitation to achieving export success, its restriction to coverage of the I/J-bands. Export customers require their systems to be effective against a wide range of potential threats. This is probably a major factor behind the failure of Scimitar to gain any real success in the export market.

The recent inclusion of the Scimitar jammer as part of the equipment for the new Malaysian Lekiu class frigates is surprising after a long delay without any orders.

However, Malaysia once held an option on two additional FS-1500 corvettes which are equipped with this jammer. Two systems may have been acquired for these ships and held in storage until the new platforms were ordered. Much the same route was followed with the installation of Scimitar jammers on the two Dutch Tromp class destroyers. These used Scimitar, rather than the Dutch navy standard Ramses, because two systems were available after their platforms (Argentine MEKO-140 corvettes) were suspended incomplete.

The limited acceptance of Scimitar and its lack of sales success over the last four years indicates that the system probably is not well suited in its present configuration. We believe that the Malaysian order represents the utilization of equipment originally acquired for other programs and specified for these ships as an economy measure. Thus, we do not forecast new production to meet this requirement. We believe it is likely that Scimitar will be discontinued as a result of product range rationalization now that Racal has taken over the defense interests of Thorn-EMI. This report will be discontinued in a future supplement.

Ten-Year Outlook

No production is forecast.

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