

ARCHIVED REPORT

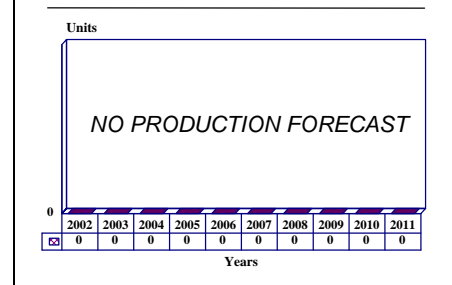
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MSSA Mk1 - Archived 12/2003

Outlook

- No additional sales foreseen
- Current use appears limited to UK and Korea
- This report will be archived in the near future barring a sudden surge of activity

10 Year Unit Production Forecast
2002 - 2011



Orientation

Description. Acoustic generator/monitor for mine-sweeping.

Sponsor

United Kingdom Ministry of Defence
Procurement Executive CB/3
St Georges Court
14 New Oxford Street
London WC1 1EJ
United Kingdom

Contractors

BAE Systems
Apex Tower
7 High Street
New Malden, Surrey KT3 4LH
United Kingdom
Tel: +44 (0) 0181 942 9661
Web Site: <http://www.baesystems.com>
(Prime Manufacturer)

Licensee. No production licenses have been granted.

Status. In operational service.

Total Produced. A total of 23 systems estimated to have been produced. The UK Royal Navy has 13 MSSA Mk1 minesweeping systems in service aboard its 13 Hunt class minehunters. South Korea reportedly procured the system for possibly three or four of the Kum San class minesweepers. The US Navy acquired a six of the MSSA Mk1 system for a Foreign Weapons Evaluation (FWE).

Application. The MSSA Mk1 Advanced Acoustic Minesweeping System simulates the acoustic signatures of a variety of surface vessels. It can produce the desired acoustic signature in different sea conditions and seawater variations.

Price Range. Little basis for a price estimate of the MSSA Mk1 system appears to exist. A very tentative value of US\$500,000 may be assigned, but must be regarded as highly speculative.

Technical Data

Design Features. MSSA Mk1 has an acoustic monitor with a hydrophone array towed ahead of an acoustic generator, which itself is towed astern of the minesweeper by a cable, with the power and control

lines. The acoustic generator, powered by an electric motor, emits sound over many frequency bands and has hydraulically actuated multiple diaphragms that produce acoustic signatures at preselected frequencies.

Power output is selectable, and the towed body can be deployed at any preselected depth. Frequency content and acoustic signal intensity are set at the control console on the minesweeper. The MSSA Mk1 can be

used in conjunction with a magnetic towed sweep to destroy combined influence mines. A towed acoustic monitor is available if the system is operating in a closed loop.



HMS Hunt, a mine countermeasures vessel, is an example of the platform ship equipped with the MSSA Mk1

Source: UK Royal Navy

Variants/Upgrades

No known variants or upgrades have been reported.

Program Review

Background. Sperry Gyroscope (UK) and the UK Admiralty Research Establishment (ARE) conducted studies to develop a towed acoustic generator (TAG) minesweeping system during the 1970s. The concept was based on research the Royal Navy carried out autonomously in the early 1960s. Sperry Gyroscope (UK) became increasingly involved in the program's development. This initial concept demonstration system was named Osborne. Subsequently it was decided to deploy a production version, designated Sperry TAG, aboard early Hunt class minesweepers. This modified and enhanced version of Osborne was designated MSSA Mk1, and the Osborne name was dropped. British Aerospace plc (BAe) Dynamics Group inherited the program from Sperry Gyroscope (UK) after taking over the company in April 1982.

The MSSA Mk1 Advanced Acoustic Minesweeping System was selected to equip the Hunt class mine countermeasures vessels. These 13 ships were commissioned between 1982 and 1989. In 1986, the

MSSA Mk1 program was transferred to British Aerospace's Naval Weapons Division. In 1992, the project was transferred again, this time to BAeSEMA.

In 1986, the US Navy procured a small number of MSSA Mk1 to conduct Foreign Weapons Evaluations (FWE). The systems were deployed aboard an MSO-426 Aggressive class minesweeper. The US Navy conducted the MSSA Mk1 evaluations for possible service aboard the MHC-51 Osprey class coastal minehunters, the successor to the MSH-1 program. The US Navy completed its MSSA Mk1 evaluations in mid-1989. The evaluations were reported to have been successful. Reports that an unknown number of MSSA Mk1 systems have been acquired by the United States Navy remain unconfirmed.

Following the Persian Gulf War, the MSSA Mk1 system, along with other British mine warfare equipment, proved its efficiency in disposing of the very large minefields laid by Iraq. These included some

highly sophisticated mines such as the Italian Manta and a number of ex-Soviet pressure, acoustic, and multi-sensor mines. The fields also included old-fashioned contact mines, some dating from 1906. Also in evidence were floating mines which are banned under the Geneva Convention, a prohibition that does not seem to have had any impact whatsoever.

During 1994, Australia concluded its contest for a new coastal mine countermeasures vessel by selecting the Italian Gaeta design, equipped with British mine warfare command systems and sensors. The latter included sweep gear and (probably) the MSSA Mk1. No precise details of these orders were released, but the associated mine warfare command system was ordered

in 1994. However, no additional interested has appeared since that time and all Australia's Huon class coastal mine countermeasure vessels are now in operational service – apparently without the MSSA Mk1.

British Aerospace Acquires BAeSEMA. In November 1998, British Aerospace (BAE Systems) completed its acquisition of BAeSEMA, which gave the company a major boost in the naval systems market. BAeSEMA was integrated into the Defence Systems Group of BAE, which enabled the group to bid more competitively for key programs such the UK Royal Navy's new carriers, as well as future submarine and surface ship combat systems worldwide.

Funding

Development funding was by UK Ministry of Defence (MoD) contract.

Recent Contracts

No contractual information has been made publicly available.

Timetable

<u>Year</u>	<u>Major Development</u>
1980	First fitting aboard RN MCM vessel
1987	US Navy starts Foreign Weapons Evaluations
1989	US FWE complete
1991	Operational use of MSSA Mk1 in Persian Gulf War
1993	Decision to extend MSSA Mk1

Worldwide Distribution

South Korea: Three or four possible on Kum San class vessels, but should be considered somewhat speculative

UK: 13 on Hunt class minesweepers

USA: Six acquired for evaluation

Forecast Rationale

BAE Systems' MSSA Mk1 acoustic generator/monitor for minesweeping appears to have lost its mine countermeasures market to remote-controlled unmanned submersibles and helicopter-borne countermeasures systems. Although a decent system that gets the job

done, the MSSA Mk1 has become a victim of the times. Navies are apparently equipping themselves with more mobile systems that can be easily transferred from platform to platform. Future sales of the MSSA Mk1 appear extremely doubtful at this time.

Ten-Year Outlook

The forecast chart has been omitted. Barring a sudden surge of market interest, this report will be archived in the near future.

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