

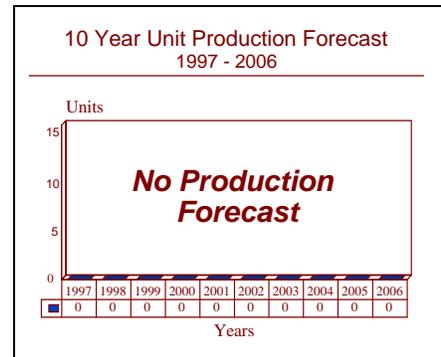
# ARCHIVED REPORT

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## Elbit ACDS - Archived 12/98

### Outlook

- Production ended in 1994
- Resumption considered unlikely
- In service with Israel, Chile, South Africa, Malaysia, and Taiwan
- THIS REPORT WILL BE DROPPED NEXT YEAR, 1998, BARRING A PROGRAM RESTART



### Orientation

**Description.** A chaff and IR flare control and dispensing system tasked with platform protection by decoying anti-ship missiles.

**Sponsor**

Israeli Ministry of Defense  
 Kaplan Street  
 Hakiryia  
 IS-67659 Tel Aviv  
 Israel

**Contractors**

Elbit Computers Limited  
 Military Systems and Products Division  
 Advanced Technology Center  
 Hof Hacarmel  
 PO Box 5390  
 IS-31053 Haifa  
 Israel

**Licensee.** There is evidence suggesting that the system may be, or may have been, produced under license in Taiwan.

**Status.** Production and service.

**Total Produced.** A total of 94 ACDS control systems were delivered by the close of production in 1994. This does not include the 24-barrel, 48-barrel and 72-barrel chaff launchers deployed with the systems. These vary in number continually, probably reflecting availability and tactical requirements.

**Application.** The Elbit Automatic Countermeasures Dispensing System (ACDS) is a chaff and IR flare control system. The system is designed to operate automatically upon receipt of threat data from shipboard systems or human operators.

**Price Range.** Based on the known costs of comparable systems, a unit value range of US\$125,000-US\$250,000 is estimated.

### Technical Data

Unit Weight	Metric	US
Main control weight:	10 kg	22 lb
Remote control weight:	2.5 kg	5.5 lb
Distribution weight:	2.5 kg	5.5 lb

Fire control weight:	7 kg	15.5 lb
Number barrels:	24, 48 or 72	

**Design Features.** The ACDS system uses microprocessor techniques to select the most appropriate countermeasures pattern. Factors such as weather conditions, ship attitude to threat, and speed are used, in addition to threat appreciation to decide CM priorities and deployment. The system consists of a main unit, distribution unit, a remote-control unit and fire-control units, each of which can control up to 24 rockets. The available 24-, 48- and 72-round launchers are used to give one, two and three salvos respectively prior to reloading. The rockets are fused to give a three-dimensional chaff cloud which "walks" away from the target ship. The system is capable of improving ECM performance of existing equipment and is interfaceable with all current systems. It can be adapted through software modification to any existing rocket or flare decoy system.

In the Lahav class installation, two 24-round launchers have been included. These are believed to be used for

image distortion so that the radar centroid apparent to the missile is shifted up and away from the actual center. This is very much a last-ditch technique.

The Elbit ACDS is one of the earliest second-generation naval decoy dispensing systems with more sophisticated and intelligent processing than its predecessors. However, it is an early example of its type, and its capabilities are limited compared with those systems currently entering the market. Many of the modern competitors use off-the-shelf computers and processors to undertake the same roles as the ACDS system, but do so at greatly reduced cost.

A particular disadvantage of ACDS is its limited ability to interface with naval command systems. When the deployment of such systems was restricted to frigates and larger ships, this was not a serious problem. Now that corvettes, fast attack craft and offshore patrol craft are routinely specified with command systems of high capability, the inability of ACDS to fully integrate with them is a serious limitation.

## Variants/Upgrades

The Elbit ACDS system usually controls three types of chaff launcher: a 24-barrel, 48-barrel system and a 72-barrel launcher on the Lahav class corvettes. In addition, a 4-barrel system has been reported.

## Program Review

**Background.** ACDS has been developed by Elbit as a private venture, though with an eye to securing an Israeli Defense Force order. It has subsequently been acquired by that service, equipping the SAAR-4.5, SAAR-4 and SAAR-2/3 class FAC, together with boats of that type exported to other countries. In Israeli service, the system appears to be controlling 48-barrel and 24-barrel launchers, with one 48-barrel and four to six 24-barrel launchers being deployed per ship. A new 72-barrel launcher has been designed for the Lahav class corvettes which will mount four such systems per ship.

The ACDS system is very widely deployed on warships of the Israeli Navy, with between four and six 24-barreled launchers and a single 48-barreled launcher controlled by ACDS being deployed on all Israeli FAC. Although Israeli naval construction rates have dropped sharply over the last five years and Israeli warship exports have been limited, the system remains a standard fit for such ships.

The Israeli Navy has recently taken delivery of the Lahav class. As is common with navies previously concentrating on the FAC class of vessel, the Israelis have now opted for a much larger ship than the earlier SAAR boats, falling into the corvette class rather than the FAC category. The equipment fit is for a scaled-up version of the earlier ships. As expected the ship is equipped with four 72-barreled launchers but has also received two 24-barreled systems for short range image distortion. The entire battery is controlled by ACDS.

No new contracts for the system had been received since 1992, although a number of suitable platforms have been ordered by a variety of users. The decision by the Singapore Navy to use the Shield decoy launcher system rather than ACDS came as a disappointment in light of the Singapore Navy's regard for Israeli equipment. With the delivery of the Lahav class systems in 1994, production is believed to have terminated.

## Funding

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The ACDS system was developed by Elbit as a private venture using corporate funding.

## Recent Contracts

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No contractual information has been made publicly available.

## Timetable

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1973	SAAR-4 FAC entered service
1977	Minister class FAC entered service
1979	Two SAAR-4 FAC transferred to Chile
1980	SAAR-4.5 FAC entered service
1990	Eilat class started construction
1993	<i>INS Eilat</i> completed

## Worldwide Distribution

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The following distribution list for ACDS control systems is taken from the Forecast International World Naval Electronic Warfare database.

**Chile** (2 on SAAR-3 FAC-M, 2 on SAAR-4 FAC-M)

**Israel** (3 on Flagstaff 2 FAC-M, 6 on SAAR-2 FAC-M, 1 on Saar-3 FAC-M, 8 on SAAR-4 FAC-M, 4 on SAAR-4.5, 2 on Saar-4.5.5 FAC-M, 3 on Lahav FFL)

**Malaysia** (4 on Spica-M FAC-M)

**South Africa** (9 on SAAR-4 FAC-M)

**Taiwan** (50 on Hai Ou FAC-M, 2 on PSK-5 FAC-M)

## Forecast Rationale

Although the ACDS is undoubtedly an effective system, its market potential is limited. ACDS faces severe competition from a number of British, French, German and US systems. Although it is claimed that ACDS is adaptable to all existing naval decoy dispensing systems, the processing ability built into the system is limited. This must make its ability to handle the new generations of decoy dispensers questionable. For these reasons, its market future outside the domestic Israeli sector will be insignificant.

The internal and external changes in South Africa have meant that the country is no longer restricted to a few suppliers of military equipment. The competition for a replacement for the Minister class FAC, which proved too lightly built and unseaworthy for the prevailing conditions, was opened to British, French and US

competitors. The British Yarrow light frigate is currently the market leader in this respect, with the Newport News FF-21 design a possible but unlikely contender. Any South African order is likely to be built in the supplying country (lead ship) and South Africa (follow-ons). A total of three hulls seems likely, the ships being likely to emerge as capable OPVs rather than frigates per se.

The production of the Elbit ACDS is believed to have ceased in 1994, following the delivery of the ACDS system for the Lahav class corvettes being built for the Israeli Navy and any export customers for these ships. Apart from these, the only tangible market for ACDS is the number of countries which have purchased Israeli-built or -designed small craft, including Sri Lanka, Chile and Argentina.

## Ten-Year Outlook

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