

# ARCHIVED REPORT

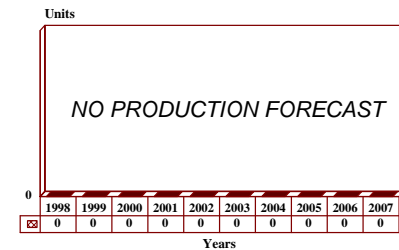
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## Philax/Protean - Archived 11/99

### Outlook

- Production believed ended
- Philax/Protean has limited to non-existent EW potential when faced with current missiles
- **Barring an increase in program activity, this report will be archived in 1999**

10 Year Unit Production Forecast  
1998-2007



### Orientation

**Description.** Missile decoy chaff and flare dispensing systems, to provide self-protection capabilities for warships or merchant shipping against radar homing and heat seeking missiles.

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Email: Query form available through website

**Licensees.** No known production licenses are known to have been granted. However, the extent of issue in the South Korean navy suggests that Protean may be in licensed production there.

**Status.** In service, but out of production.

**Total Produced.** Approximately 250 Philax and Protean systems were produced through 1998.

**Application.** Primary user platforms include frigates, patrol craft and minelayers.

**Price Range.** Based on the known costs of comparable systems, a unit value of US\$100,000 (1993 dollars) can be placed on a launcher system.

## Technical Data

	<u>Metric</u>	<u>US</u>
<b>Specifications</b>		
<b>Launcher</b>		
Chaff magazines per launcher:	4 (2 of which may be replaced by IR containers)	
Salvoes per chaff magazine:	4	
Chaff grenades per salvo:	9	
Ejection carriage:	1 per group	
Weight (excl. grenades):	180 kg	396 lb
<b>Dimensions</b>		
<b>Firing Panel</b>		
Height:	368 mm	14.4 in
Width:	317 mm	12.6 in
Depth:	400 mm	15.9 in
Weight:	<20 kg	<44 lb

**Design Features.** Philax and Protean launching systems onboard ships are comprised of two to four launcher chests and one of several control panel types. Control modes range from local manual panels to fully automatic systems that function upon receipt of electronic threat information.

radar, radar warning receivers and electronic support measures sets. In place of chaff magazines, it is possible to include IR decoy flare grenades and so provide a limited anti-missile capability against IR homing missiles. The system uses Lacroix or Chemring ammunition.

**Operational Characteristics.** The system can be interfaced to any threat detection-capable system, including

## Variants/Upgrades

**Philax 105.** Philax is the Swedish name for the system, otherwise identical to Protean. Type 105 is the standard model of this weapon.

**Philax 106.** This is the Swedish nomenclature for the version capable of launching infrared (IR) decoys (also 36 per magazine). The deployment is similar to the French DAGAIE system, although the decoys are not the same.

Philax/Protean has been integrated into a number of CelsiusTech-designed command control and automated EW systems. In such cases, a Matilde ESM receiver is used as the set-on component. Following the sale of Philips defense interests and the split in parentage of Philax/Protean between Celsius and Thorn-EMI, the CelsiusTech systems used Matilde, a close derivative of Matilde, rather than the Thorn-EMI system.

## Program Review

**Background.** Philax was developed by Philips Elektronikindustrier AB (PEAB) in the late 1970s, to provide an anti-missile capability primarily for the type of small warships used by the Royal Swedish Navy. However, within the context of Swedish legislation on arms export, the system was made freely available for the broader defense community as well. The system is

now fitted almost universally throughout the Royal Swedish Navy.

Protean is essentially the same as Philax. It is produced in England by Thorn-EMI Defense Systems. It appears to have achieved a degree of commercial success and is believed to have been offered for civilian requirements as well, particularly for merchant shipping lines

operating in the Persian Gulf war zone. It is likely that some civilian procurement may have already taken place, though no contract details have been released for obvious reasons of commercial and physical security.

The existence of two brand identities of the same product is due to the fact that it is being marketed to regions of different political sensitivities. The two brands are formally not associated with each other: Protean is being sold in the Middle and Far East by Racal, while Philax is mainly sold in the Nordic area, including the Royal Swedish Navy. The Finnish navy has also adopted the CelsiusTech 9LW-300 ESM/ECM/C<sup>3</sup>I system for its Helsinki and Rauma class fast attack craft, using the Philax chaff/flare dispensing system.

In 1992/93, Philax/Protean became almost standard installation on warships of the South Korean navy. Most of these ships now have the highly distinctive twin antennas of Matilde at the masthead, and between two and four Philax box launchers. When the design of the KDX frigates was finalized in mid-1993, these ships also were designed to carry the Matilde/Philax system. In this case at least, the system acts as a back-up to the larger and heavier SRBOC launchers.

Contractual data from Sweden have shown that the Philax box launchers in Swedish service can also be used to fire Elma anti-submarine grenades. There is some suggestion that this configuration can be used to provide an active defense against torpedoes as well, although the precise engagement sequence is unclear. In 1994, information on this combination showed that the ASW grenade launcher could also be deployed on a helicopter.

This gives rise to suspicion that the chaff and flare dispensers could also be helicopter-deployed. The motive here would presumably be to extend the depth and area of the chaff screen provided to a ship rather than self-defense for the helicopter.

Since 1994 there has been no verifiable activity of Philax/Protean being procured or fitted to any ships. The purchase of Thorn-EMI's remaining defense activities by Racal in 1995 appeared to be the end of Protean. Racal was pushing a new ESM system, designated Griffin, at the expense of the older Protean system.

No information was obtained regarding the status of Philax/Protean for the years 1996-1998 other than that previously procured systems are still in service.

## Funding

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Philax and Protean were developed jointly by Philips and its British subsidiary MEL. Swedish funding is now provided by CelsiusTech; British by Racal Radar Defense Systems.

## Recent Contracts

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No contractual information has been made publicly available.

## Timetable

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<u>Year</u>	<u>Major Development</u>
1977	Philax ordered by Sweden for Carlskrona minelayer
1978	Protean ordered by Egypt for Ramadan PCFGs
1979	Protean ordered by Egypt for October PCFGs
1981	Philax ordered by Sweden for Stockholm FSGs
1981	Philax ordered by Sweden for Landsort minelayers
1982	Protean ordered by South Korea for first group of Dong Hae FSs
1983	Philax ordered by Sweden for Älvsborg minelayer
1984	Philax ordered by Sweden for Norrköping PCFGs
1984	Protean ordered by South Korea for second group of Dong Hae FSs
1985	Philax ordered by Sweden for Göteborg FSGs
1987	Philax ordered by Finland for Rauma FSGs
1988	Protean ordered by South Korea for third group of Dong Hae corvettes
1995	Racal takes full control of Thorn-EMI defense activities – Protean competing against Griffin

## Worldwide Distribution

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The following countries' navies use the Philax/Protean system:

**Egypt.** 12 Protean on six October class PCFGs; 24 Protean on six Ramadan PCFGs

**Finland.** Unknown number installed on 4 four Helsinki and five Rauma class PCFGs; Unknown number installed on one minelayer

**South Korea.** 16 Protean on four Dong Hae FSs; 96 Protean on 24 Po Hang FSGs

**Sweden.** Two Philax on one Älvsborg ML/AGF/AS; two Philax on Carlskrona ML/AXT; 16 Philax on Göteborg FSGs; 14 Philax on seven Landsort MHCs; 12 Philax on Norrköping PCFGs; four Philax on two Stockholm FSGs; an additional 32 systems are known to have been delivered

## Forecast Rationale

The Philax/Protean systems had relatively good initial sales in the late 1970s through the 1980s and into the very early 1990s. However, after 1993 – at the latest – it appears that nations stopped procuring the system due to its age. While Philax/Protean worked well against systems of the same vintage, it struggled to provide protection against more modern threats.

When Racal took over the Thorn-EMI defense activities in 1995, many redundant programs were abolished. In particular, Philax/Protean was apparently dropped from the Racal inventory so that the company could push its Griffin system.

The 10-year forecast indicates that no production will take place throughout the forecast period for the Philax/Protean system.

## Ten-Year Outlook

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No further production expected. **Barring an increase in program activity, this report will be archived in 1999.**

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