

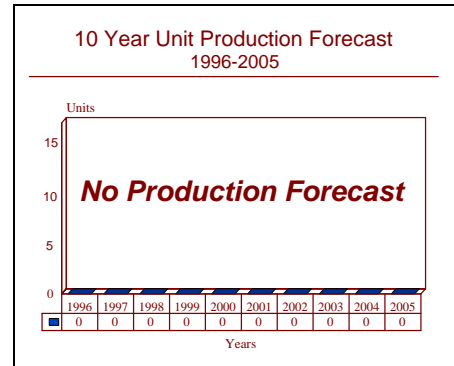
ARCHIVED REPORT

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Anemone - Archived 10/97

Outlook

- The Anemone is in service.
- No further production or sales are forecast.



Orientation

Description Multimode airborne radar for naval strike fighter application.

Sponsor

Delegation Generale pour l'Armement (DGA)
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France

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Contractors

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Thomson-CSF

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Dassault Electronique SA is the prime contractor for Anemone with Thomson-CSF as the main subcontractor. Dassault Aviation is responsible for system integration.

Licensee. No production licenses have been granted.

Status. In service.

Total Produced. A total of 56 radars have been ordered to upgrade 50 of the French Navy's inventory of 67 Super Etendard strike fighters.

Application. To provide the Super Etendard with a multifunction radar for air-to-air and air-to-ground combat missions including the following:

Maritime Reconnaissance
Air-to-Surface Track-While-Scan
Ground Mapping
Air Search
Air Tracking
Air Ranging

Price Range. Based on the comparable costs of similar radars, a unit cost of approximately US\$2 million is anticipated.

Technical Data

No details have, as yet, been released concerning the technical specification of the Anemone radar system.

Variants/Upgrades

Problems with the development of the RBE radar for the Rafale-M and severe financial limitations on the French defense budget as a whole have seriously delayed the entire Rafale program. In addition, the Rafale-M aircraft will be restricted to air superiority tasking with anti-

surface strike limited to iron bombs. As a result, the Super Etendards will have to soldier along for much longer than expected. This implies a major Anemone upgrade is possible. In addition, a version of the radar may be developed for a strike version of naval Rafale.

Program Review

Background. The Anemone is based on the Agave radar system fitted to current versions of the Super Etendard. The SAMAN decided to update these aircraft for continued operation onboard the aircraft carriers *FS Clemenceau* and *FS Foch*. The program is mainly concerned with the replacement of Agave and the update of the Sagem inertial navigation system, Thomson-CSF instrument displays and general cockpit layout. Although the French Navy then operated about 67 Super Etendard strike fighters, only 50 aircraft were identified to be upgraded.

A contract was signed in late 1986 by the French Directorate of Armament and Dassault setting the Super Etendard update program on a firm footing. Also in 1986, France reaffirmed its commitment to organic naval air power by laying down a nuclear powered aircraft carrier. Detailed definition was under way in 1987 following the study contract award. Test flight trials took place in 1990, with the aircraft returning to French Navy service from 1991 onwards. The program ended in 1994 with the completion of the 50th aircraft. The Super Etendard NG program will extend the life of the aircraft until early in the 21st Century.

In August 1988, McDonnell Douglas asked Dassault Electronique for a proposal to supply a version of Anemone for the Hornet 2000 upgrade of the F/A-18. McDonnell Douglas has attempted to sell the Hornet 2000 to the French Navy as a replacement for the Crusader. In that year, Dassault Electronique and Westinghouse signed an agreement covering the exchange of processing technology and numerical bus systems for defense electronics applications. Initially, the deal allowed Dassault's 32 bit processor, macro-hybrid technology to be adapted to US standards.

Rafale B is intended to replace Crusaders in the air superiority role. The upgraded Super Etendard NG will continue in its long-range attack, anti-ship, and ASMP standoff nuclear missile delivery roles. There have been suggestions that an upgraded Anemone radar will be adopted for at least a part of the French Navy's Rafale B. This implies that any aircraft so fitted will be allocated a strike role rather than air superiority/interception. Such a policy would have much to commend it given the small size and limited air group envisaged for the aircraft carrier *FS Charles de Gaulle*. It would also be in keeping with the policy laid down during Mirage F-1 and Mirage 2000 production.

Funding

The program is being carried out with French Defense Ministry funding, under a contract awarded by the Delegation Generale pour l'Armement (DGA).

Recent Contracts

Contractor	Award (\$ millions)	Date/Description
Dassault		1986 - DGA development and production contract for upgrade of Super-Etendard aircraft including development and installation of the Anemone radar.

Timetable

Nov	1986	Contract signed by the DGA for NG Etendard
Aug	1988	Proposal for installation for Hornet 2000
	1990	Prototype Super Etendard upgrade work commenced and Upgraded Super Etendard rolled out
	1991	First production NG Super Etendard delivered
	1994	Super Etendard upgrade program completed

Worldwide Distribution

France (50 on Super Etendard)

Forecast Rationale

Argentina is the sole Super Etendard operator other than France. Although a potential client for Anemone radar, economic realities rule this out as a practical proposition. Attrition losses have reduced the Argentine fleet to a single serviceable aircraft. The prospects for further Super Etendard and related Anemone sales must be considered remote. The chances of Anemone being specified for use on any other new-build aircraft are equally remote. It is inconceivable that aircraft in the F-16 or Tornado class would be specified with an Anemone radar fit. Light attack aircraft in the Hawk 200 class would be a more likely prospect, but the availability of the existing multimode radars for these presents formidable difficulties. The French Navy has been instructed to consider only the acquisition of the naval version of Rafale. Some of these may end up as Anemone-equipped strike variants, but not within the forecast period.

Of existing Agave users, only India seems to be a plausible candidate. India presently operates eight Maritime Strike Jaguar aircraft equipped with Agave. This fleet was originally intended to be 18 aircraft, but procurement was stopped at eight in 1992. There are some reports that deliveries resumed in 1994 with nine aircraft being delivered. In view of India's growing presence as a regional superpower and its interventionist policies in the area, these aircraft are of considerable importance. Certainly they are viewed as a major threat by other navies in the region. Their upgrade, and indeed the expansion of

the maritime attack fleet by conversion of Jaguars assigned to other roles, is therefore probable. However, the existing Agave radar is quite adequate and its replacement by Anemone probably falls into the "nice-but-not-essential" category.

The problem with the Anemone is that it is a dedicated maritime strike radar. There are now a number of multi-mode radars on the market at comparable cost which provide equivalent strike capability yet also add abilities in other areas. These include the Thomson-CSF RDY radar now entering production for the Mirage 2000-5. Anemone has the advantage of being a very small radar (determined by the accessible volume in the nose of a Super Etendard) which should make it suitable for use in light-strike and ex-Russian aircraft. Again, these markets are already well addressed by existing multi-mode radars available at much lower costs. Grifo is perhaps the most notable system here.

With the delivery of the last radars for the Super Etendard upgrade program in 1994, production of Anemone has ceased. For the reasons discussed above, no further sales of Super Etendard/Anemone are projected. We have eliminated provision for upgrade/ retrofit sales on the grounds that most sales will go to the Thomson-CSF RDY system, while those for lighter aircraft will go to Grifo and its British competitor, Blue Hawk.

Ten-Year Outlook

No production is forecast.

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