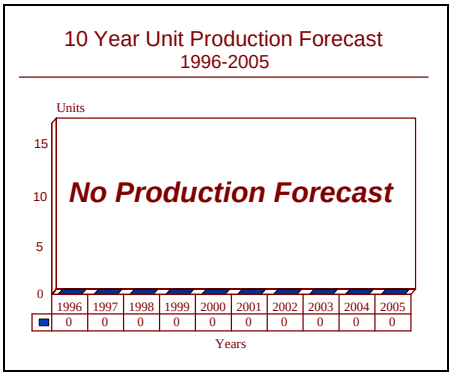
ASW-27B/C - Archived 11/97

Outlook

- Spares production
- Small continuing demand for spares through end of decade



Orientation

Description. Data Link System

Sponsor
US Navy
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Contractors
Harris Corp
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Government Aerospace Systems Division
Melbourne, Florida (FL) 32902
USA
Tel: +1 407 727 4000
(Production/modification of ASW-27B/C)

Litton Industries
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Data Systems Division
Agoura Hills, California (CA) 91301
USA
Tel: +1 818 991 9660
(Development; Production of ASW-27B)

Status. Spares production.

Total Produced. Estimated production through 1995 is approximately 800 units.

Application. Airborne digital communications system for relaying flight and navigation data between carrier and aircraft. The ASW-27C is deployed on the F-14A/A+ aircraft, while the older ASW-27B is used by the A-6E, EA-6B, E-2C, and S-3A/B. An undisclosed number have been updated to the C configuration.

Price Range. Unavailable.

Technical Data

Dimensions	Metric	US
ASW-27C		
Size:	12.7 cm x 17.55 cm x 26.67 cm	5.0 in x 6.91 in x 10.5 in
Weight:	6.81 kg	15 lb
Frequency Range:	300 MHz - 324.9 MHz FSK Link 4	

Channel Spacing:	250, 100 kHz channels
Data Rates:	5 kb/s Link 4A standard
	10 kb/s digital voice or data
Interfaces:	
Data	MIL-STD-1553A, MIL-STD-1553B
Voice	CVSD digitized voice, ICS-compatible, 600 ohm
Input Power Requirements:	28 Vdc; MIL-STD-704D
Reliability:	3,000 hr MTBF
Environmental:	MIL-E-5400 Class 2

Design Features. Harris Corp's ASW-27 series has been the standard UHF anti-jam data link onboard US Navy F-14A/A+ aircraft, serving as the prime datalink for the Navy's Link 4A/Link 4C tactical communications network.

Target data can be exchanged between the fighter and E-2C Airborne early warning aircraft and transmitted to cockpit tactical displays. The ASW-27 also provides data for aircraft navigation updates, and automatic carrier landing control (ACL) system.

The ASW-27 consists of the data link converter CV-2441/ASW-27, the converter control C-7598/ASW- 27, and the mount MT-3965/ASW-27. The ASW-27, in conjunction with a UHF transceiver, serves as the airborne control terminal in the USC-2 time diversion data link system.

Variants/Upgrades

ASW-27C. The ASW-27C is the latest variant that processes data (including digital voice transmissions) from the E-2C to the F-14, but has the added capability for aircraft-to-aircraft data transfer for intercept vectoring and enhanced situational awareness, as well as an anti-jam capability. The fighter-to-fighter link allows ASW-27C equipped F-14s to operate at longer ranges and not be cut off if the aircraft flies beyond the E-2C's UHF data link range as is the case with the older ASW-27B system. It also allows for faster relay of data between fighters, by passing the need to relay back to a controller. With the ASW-27B, tactical data had to be transmitted from a fighter back to the controller on the E-2C or the aircraft carrier for retransmission to other F-14s.

Tactical data can be passed to as many as four aircraft on a given ASW-27C communications net. To offset this limitation during Desert Storm, only the leader of each flight element was allowed to transmit on the net. When the leaders transmitted, the subordinate aircraft of each element also received updates as to leader location and targets.

Each aircraft can also transmit target data derived from the aircraft's fire control radar to all other aircraft on the net, but is limited to transmitting data on four targets at a time. The ASW-27C automatically sends updates on the targets that the Radar Intercept Officer (RIO) has designated on his display. Data on target heading and speed or a wingman's fuel level are transmitted by the data link, thus reducing the need for voice communications between crews.

Program Review

Background. Developed by Litton and Harris in the early 1970s, the ASW-27B entered service on the US Navy's F-14 and A-6 aircraft. Harris is the designer, developer, and sole producer of the ASW-27C variant, which enhances the basic unit's capability to perform anti-jam data link operations and fighter-to-fighter data link operations.

The ASW-27C equipped all F-14As deployed during Operation Desert Storm, allowing each F-14 to directly link data to other F-14s. The data were presented on the tactical displays in the F-14 and provided the location and targets of other F-14s in a given strike package.

Funding

Current funding for spares is not broken out in procurement and operations & maintenance documents.

Recent Contracts

Last bit of contracting activity dates back to 1987. Since then, we can find no evidence of any recent contract awards.

Timetable

FY66	US Navy initiated development program for ASW-27
FY67	Development contract awarded to Litton
FY71	Production deliveries initiated
FY74	Harris brought in as second source
FY87	Harris awarded production contracts for ASW-27C
1995	Production centered around spares support

Worldwide Distribution

The ASW-27 series of UHF data links are exclusive to the **US Navy**.

Forecast Rationale

The Navy has completed procurement of the ASW-27(V), with remaining purchases confined to spares and replacement stocks. The ASW-27C's effectiveness during operations in the Gulf War prompted some to wonder if the Navy would install the system in its F/A-18 and A-6E aircraft, but we feel installation on either is highly unlikely: the F/A-18 will probably get the Multi-function Information Distribution System (MIDS, see separate report), while retirement will supplant overhaul of the A-6E Intruders.

In 1992, Harris developed a new data link, the ASW-54, which was planned for the now-canceled A-12. The ASW-54 would be a fine, low-cost candidate for an F-14 upgrade.

The ASW-27C will be supplanted by JTIDS airborne terminals (see separate report) in selected Navy aircraft. Despite cost and schedule overruns, JTIDS is simply too big to stop at this point, and the small number of F-14Ds that will remain in the fleet (less than 60 aircraft) are slated to receive it. The JTIDS terminals will employ the US Navy's Link J (TADIL J) message format, which will also serve as the basis for US interoperability for the NATO Link 16 secured voice/ data system.

Over the long term, the Navy has been developing the MIDS, a smaller, less costly variant of the JTIDS Class 2 terminals, for fighter aircraft such as the F/A-18, and possibly USAF's F-16 and F-15, thus effectively closing the door on future US production of the ASW-27.

Ten-Year Outlook

The large number of ASW-27s in service will create for Harris a small continuing demand for spares to support the data link out to the end of the decade. The last contract, however, was awarded in 1987, so we are not forecasting further new production. Barring a surge of activity over the next 12 months, this report will be dropped from our regular update cycle.

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