

ARCHIVED REPORT

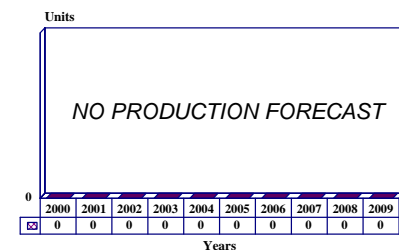
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URC-126 - Archived 09/2001

Outlook

- Full production on indefinite hold, not likely to occur
- Project expected to be abandoned in favor of newer technology
- **Barring any significant program developments, this report will be archived next year, 2001**

10 Year Unit Production Forecast
2000-2009



Orientation

Description. Advanced anti-jam UHF transceiver.

(Validate drawings, develop SATURN changes)

Sponsor

US Air Force
Electronic Systems Center
9 Eglin Street
Hanscom AFB, Massachusetts (MA) 01731-5000
USA
Tel: +1 781 377 4441

Harris Corp

RF Communications Group
1680 University Avenue
Rochester, New York (NY) 14610
USA
Tel: +1 716 244 5830
Web site: <http://www.harris.com>
E-mail: communications@harris.com
(Preproduction validation prototypes)

Contractors

Raytheon Systems Company
1010 Production Road
Fort Wayne, Indiana (IN) 46808
USA
Tel: +1 219 429 6000
Fax: +1 219 429 4442
Web site: <http://www.raytheon.com>
E-mail: Query form available through website
(Prime: Development, preproduction validation prototypes)

Motorola Space and Systems Technology Group

5201 Tollview Drive
Rolling Meadows, Illinois (IL) 60008
USA
Tel: +1 847 538 7568
Fax: +1 847 576 2844
Web site: <http://www.motorola.com/>
E-mail: cdp051@email.mot.com
(Preproduction validation prototypes)

Charles Stark Draper Laboratory, Inc.

555 Technology Square
Cambridge, Massachusetts (MA) 02139-3563
USA
Tel: +1 617 258 1000
Fax: +1 617 258 3050
Web site: <http://www.draper.com>
E-mail: info@draper.com

Status. Cannot be determined. Indefinite hold on production.

Total Produced. Prototypes only.

Application. Tactical aircraft and ground-based platforms.

Price. There have been no production contracts; the sole indicator of price is the initial per-unit estimate of US\$35,000 in 1992 dollars.

Technical Data

Characteristics

Frequency Range:	225 MHz - 400 MHz (25, 12.5, 6.25, or 5 kHz center frequency)
Modes:	AM, FM/FSK, Secure Voice (Ext KY)
Preset Channels:	20
Receiver Sensitivity (dBm):	-109 AM, -112 FM
Power Requirements	
Remote Rec-Trans:	4.6 A max.
Console/Panel Mount Rec-Trans:	4.8 A max.
Radio Control Set:	0.8 A max.
Transmission Output:	10 W AM, 20 W FM
MTBF (Predicted)	
Remote Rec-Trans:	2,700 hrs; AIF, 55°C
Console/Panel Mount Rec-Trans:	2,000 hrs; AUF, 71°C
Radio Control Panel:	8,500 hrs; AIF, 55°C

Design Features. The URC-126 is an anti-jam, secure voice UHF transceiver for tactical aircraft and ground-based communications applications. The URC-126 was designed to be the Air Force HAVE QUICK IIA replacement for the older Magnavox (now Raytheon Systems Company) ARC-164 HAVE QUICK/HAVE QUICK II airborne transceivers. In addition to being a HAVE QUICK IIA design, the URC-126 is also compatible with Second-generation Anti-jam Tactical UHF Radio for NATO (SATURN).

The URC-126 features faster frequency hopping and finer frequency resolution capabilities, as well as improved supportability. To meet SATURN requirements, the Charles Stark Draper Laboratory developed

software changes to the Magnavox design to incorporate the SATURN waveform within the radio.

Other improvements include raising the output power to 20 watts (FM), a significantly higher frequency-hopping rate, and the ability to synchronize frequency hopping directly from an onboard NAVSTAR GPS receiver. The current HAVE QUICK II radios must acquire this timing signal via a communications link from a ground station. Provisions will also be included for later incorporation of internal COMSEC capability. As with the earlier ARC-164, the URC-126 was designed to be a modular or "slice" configuration with the added enhancements of built-in test and an improved MTBF (mean time between failure) rating.

Variants/Upgrades

Due to its development status, no variants or upgrades have been identified.

Program Review

Background. Development of the improved URC-126 HAVE QUICK IIA transceiver was initiated by the US Air Force Electronic Systems Division in 1987. Magnavox developed the design and provided the service with the re-procurement technical data package for program competition. Charles Stark Draper Laboratories was contracted as the Production Verification Agent in December 1987 to carry out Phase 1 verification tests on the initial re-procurement data package. The Phase 1 verification process was completed in late 1989. Earlier in 1989, the URC-126 failed

developmental test and evaluation (DT&E) and initial operational test and evaluation (IOT&E).

In early 1990, the Air Force initiated a preproduction phase for the URC-126 to refine and finalize a procurement data package for prospective contractors as part of a full and open competition for the URC-126 production program. Magnavox, Motorola and Rockwell Collins were contracted to validate the production development package and deliver two preproduction systems based on the technical package to the Air Force for testing.

Adoption of the new NATO anti-jam UHF standard, SATURN, required the US Air Force to develop additional new waveforms for the URC-126. Each contractor was also tasked to develop and implement the engineering and software changes to integrate the SATURN waveforms within the URC-126, as well as develop generic enhancements that would be applicable to a modern radio manufacturer's production facilities. As Production Verification Agent, Charles S. Draper provided assistance to the preproduction phase contractors in fabrication and test of HAVE QUICK IIA radios.

The URC-126 completed DT&E in April 1990. Shortcomings from earlier DT&E held in April 1989 were successfully addressed, according to FY92 Air Force documents. The service had scheduled initial operational test and evaluation of first article test radios for FY93. At the time, full-rate production for the URC-126 was tentatively scheduled to begin in the second quarter of FY93, with deliveries to start in FY94.

Air Force original procurement requirements for the URC-126 were put at 8,000 to 12,000 units over a six- to 10-year period beginning in FY93. To meet this

requirement, the service sought to select a second source to Magnavox for the URC-126. Motorola, Harris, and E-Systems were contracted to deliver two URC-126 prototypes built from government-furnished parts in order to qualify the data package drawings. The Air Force had planned to award Magnavox a contract in 1990 for the first 300 URC-126 radios, but this was delayed as the service moved to redefine its acquisition plans for the new radio.

Development of SATURN software changes was completed in FY92. The Air Force, however, withdrew its involvement in SATURN due to funding problems in early 1992, stating that it would transfer SATURN technology along to the NATO allies and would adopt SATURN if and when a viable system and platform were available.

The Air Force was moving to reopen the program to all and force Magnavox to recompile with other possible contenders. Program competition was tentatively scheduled for fall 1992, but was put on hold due to funding changes – at which point the program remains to this day. Magnavox itself delivered a small number of URC-126 radios, primarily used in Block 50/52 F-16 fighters, for test and evaluation.

Funding

Funding data for the URC-126 is not available.

Recent Contracts

No contracts have been identified since the following:

<u>Contractor</u>	<u>Award</u> (\$ millions)	<u>Date/Description</u>
Motorola	0.5	Feb 1990 – Validation of production development data package for the URC-126.
Charles S. Draper	9.7	May 1991 – FVI to a CPFF contract for HQIIA URC-126 radio preproduction support. Completed Jan 1993. (F19628-89-C-0133)

Timetable

<u>Month</u>	<u>Year</u>	<u>Major Development</u>
	FY86	US Air Force initiated URC-126 development
Dec	1987	CSD Labs selected to verify data package
	1989	URC-126 failed DT&E and IOT&E
	FY90	Air Force selected Magnavox, Motorola, Rockwell Collins to build preproduction units to data specs
Apr	1990	URC-126 completed DT&E
	1992	Program on hold indefinitely

Worldwide Distribution

The URC-126's distribution is limited to developmental models delivered to the **US Air Force**.

Forecast Rationale

The URC-126 is an advanced anti-jam UHF transceiver, originally slated to replace the aging ARC-164 in dozens of US fixed wing platforms and helicopters. The system was put on indefinite hold even before its formal introduction; Air Force officials cited funding and developmental complications.

URC-126 was once considered a highly capable system incorporating the latest in technological advances. Having sat idle for nearly a decade, it is unlikely that the program will ever see the light of day. The title alone has grown to represent a thorn in the side of defense officials and corporations alike.

URC-126 technology has undoubtedly played a role in the development of recent UHF transceivers. An upgraded base system may eventually be introduced to both the domestic and export markets, though it will most likely be promoted under a different nomenclature.

As no contract data is available for the URC-126, the forecast chart has been omitted from this report. Barring any developments regarding this program, this report will be archived next year, 2001.

Ten-Year Outlook

As there have been no indications of a change in the status of this program, the forecast chart has been omitted. **Barring any significant program developments, this report will be archived next year, 2001.**

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