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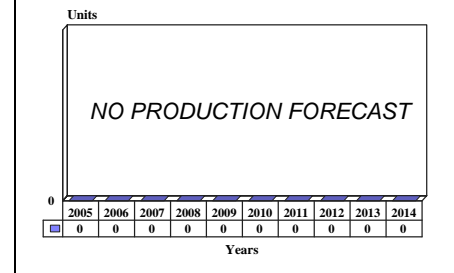
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GRC-171(V) - Archived 7/2006

Outlook

- No new contracts have been detected since 2002
- Production is believed to have ended
- Barring any changes, this report will be archived in 2006

10 Year Unit Production Forecast
2005 - 2014



Orientation

Description. UHF radio for air traffic control.

Status. In service.

Sponsor

U.S. Air Force

Air Force Electronic Systems Division
Hanscom AFB, Massachusetts (MA)
USA

(GRC-171B(V)4 Have Quick radio development)

Total Produced. Through 2004, an estimated 10,752 radios (all variants) were produced.

Application. Airfield and shipboard air traffic control facilities.

Price Range. The price of the GRC-171D(V)4 with all support equipment included is approximately \$100,000.

U.S. Marine Corps

Marine Corps Logistics Base
Contracts Division
Albany, Georgia (GA)
USA

(GRC-171B(V)4 Have Quick radio)

Contractors

Rockwell Collins Inc, <http://www.rockwellcollins.com>, 400 Collins Rd NE, Cedar Rapids, IA 52498-0001 United States, Tel: +1 (319) 295-1000, Fax: +1 (319) 295-5429, Email: collins@rockwellcollins.com, Prime

Technical Data

Design Features. The GRC-171(V)1 is a UHF AM transceiver designed for use in transportable and fixed station environments to provide ground-to-air and point-to-point AM voice transmission and reception for air traffic communications. This radio provides 7,000 channels for UHF AM communications in the 225 to 399.975 MHz range at 25 kHz spacing, with 20 watts

AM carrier output. The system has a mean time between failures (MTBF) of 5,000 hours.

The GRC-171(V)2 models provide ground-to-air and point-to-point AM and FM voice and data transmission and reception for air traffic communications. This modified version of the GRC-171 provides a 50-watt FM carrier output.

The GRC-171(V)4 high-performance UHF receiver-transmitter is designed for reliable air traffic control communications in normal or frequency-hopping (anti-jam) modes at collocated VHF/UHF transmitter/receiver

sites. The models within this variant feature Built-In Test capability in the receiver-transmitter. They also feature 99 presets. The Air Force contracted with Rockwell Collins to develop a modification kit for the GRC-171(V)4 radio to incorporate Have Quick compatibility.



Rockwell Collins GRC-171

Source: Rockwell Collins

Variants/Upgrades

The following are the known subvariants of the GRC-171(V) family:

GRC-171(V)1. UHF AM transceiver.

GRC-171(V)2. UHF AM/FM transceiver.

GRC-171A(V)1. UHF AM transceiver (?).

GRC-171A(V)2. UHF AM/FM transceiver.

GRC-171A(V)4. UHF receiver/transmitter (compatible with Have Quick I).

GRC-171B(V)4. UHF AM/FM receiver/transmitter (Have Quick I/II). Offers 7,000 channels in the 225 to 399.975 MHz band, with 20 watts AM or 50 watts FM carrier output. Plug-in modular construction and Built-In Test functions limit mean time to repair (MTTR) to no more than 20 minutes. The solid-state power

amplifier is ruggedized. Receiver-transmitter MTBF is more than 6,500 hours; remote control MTBF is more than 43,000 hours. Collocation performance is improved over the GRC-171A(V)4. The system is upgraded to accommodate field retrofit of more robust electronic counter-countermeasures (ECCM) waveforms (such as Have Quick IIA).

GRC-171C(V)4. Has performance characteristics identical to those of the GRC-171B(V)4, but is configured for Have Quick I only.

GRC-171D(V)4. Also identical in performance to the GRC-171B(V)4, but is configured for non-ECCM operation only, unless otherwise specified by the customer. This model supersedes the GRC-171(V)1 and (V)2.

Program Review

Background. In 1968, the U.S. Air Force awarded a \$7.7 million development and production contract for the GRC-171(V) to Wilcox Electric for 2,260 units. However, Wilcox could not deliver an acceptable prototype, and the contract was terminated in 1971. The contract bidding was reopened in 1973, and Rockwell Collins was selected as the new prime contractor, with an initial contract award of \$5.8 million for 1,266 units.

Rockwell Collins was selected over competitor Magnavox in 1988 to produce the GRC-171B(V)4 to fill U.S. Air Force and Marine Corps GRC-XXX requirements for its TYQ-23 Modular Control Equipment (MCE) shelters, which are used as portable air traffic control facilities and as fixed installations.

Over the years, GRC-171 production has been steady. For one contract awarded in the 1980s, options were exercised through the early 1990s: \$18.3 million for 476 Have Quick II radio transmitters and related data (August 1990); \$18.6 million for 564 GRC-171B(V)4 radios (April 1992); and \$19.4 million for 424 units, along with remote control units and initial operating spares, of the GRC-171B(V)4 for the Marine Corps (April 1993, the fifth option). Deliveries under the fifth and final option were completed by mid-1995. Another contract of note was awarded in October 1992, and called for 150 GRC-171A(V)1, 35 GRC-171(V)1, and 75 GRC-171(V)2 radios over a two-year period.

Rockwell Collins won a contract in August 1995 for production and delivery of 227 GRC-171D(V)4 radios, plus spares, to support a Foreign Military Sale to Taiwan. The units were to be installed at fixed sites, composing the ground-to-air communication structure of the Taiwan Air Force's air defense system. The number of air defense sites involved was not released. Production under this \$22.7 million contract was slated to run into September 1997. Thus, Taiwan became the first international customer of the radio, although others are believed to exist.

Production of the GRC-171 was thought to have come to an end after the 1995 contract for Taiwan was completed. However, in the fall of 2002 Rockwell Collins received a \$12.8 million contract for 184 GRC-171D(V)4 radios and ancillary equipment. Whether these radios are destined for the U.S. military or a foreign customer is not known.

The U.S. military is currently in the process of developing the Joint Tactical Radio System (JTRS), which is a program to standardize radio communications throughout all branches of the armed services. Once JTRS enters production, many of the current U.S. radios will be phased out. JTRS is expected to become operational around 2006.

Funding

Funding specific to the GRC-171(V) is not broken out in current U.S. budget documents.

Recent Contracts

<u>Contractor</u>	<u>Award (\$ millions)</u>	<u>Date/Description</u>
Rockwell	12.8	Nov 2002 – A firm fixed-price contract modification for 184 GRC-171D(V)4 radios and ancillary equipment. The work will be performed in Cedar Rapids, Iowa. The Electronic Systems Center, Hanscom Air Force Base, is the contracting agency. (F19628-02C-0089)

Timetable

<u>Month</u>	<u>Year</u>	<u>Major Development</u>
	1968	Wilcox awarded initial contract
	1971	Wilcox contract terminated after failure to deliver acceptable prototype
	1973	Rockwell Collins selected as new prime contractor
	1988	GRC-171B(V)4 selected to fill Air Force/Marine Corps GRC-XXX requirements
Apr	1993	Last production option for GRC-171B(V)4 exercised
Aug	1995	Contract for GRC-171D(V)4 supports FMS to Taiwan
Sep	1997	Production completed for 1995 Taiwanese contract
Nov	2002	Order received for 184 GRC-171D(V)4 radios

Worldwide Distribution

The GRC-171(V) family has been purchased by the **U.S. Army, Air Force, Navy, and Marine Corps**. It is suspected that there are several foreign users of the GRC-171. So far, only **Taiwan** has been identified as an export customer.

Forecast Rationale

For more than three decades, the GRC-171 has provided the U.S. armed forces with ground-to-air and point-to-point communications. The radio is a high-performance UHF transceiver providing support for U.S. military air traffic control operations. The GRC-171's basic technology and architecture have become antiquated and will soon be replaced by more modern systems.

In recent years, the U.S. military has embarked on a new program, the Joint Tactical Radio System (JTRS), to standardize radio communications throughout the services. The JTRS will be a programmable software-based radio capable of using various waveforms. Once JTRS becomes operational most current U.S. radios will be phased out of service.

After a 1995 Taiwanese contract for 227 radios was completed, it was believed that production of the GRC-171 had come to a halt. No other contracts for the

GRC-171 were detected until recently, in November 2002, when an additional 184 GRC-171D(V)4 radios were ordered. It is not known whether these radios will be utilized by the U.S. military or a foreign force.

Since the 2002 contract there has not been any new activity for the GRC-171. In fact, recent developments indicate that the GRC-171 is on its way out. Under the UHF/VHF Transceiver Replacement (MR440) program in the fiscal year 2004/2005 budget, it is stated that the U.S. Navy and Marine Corps are planning to replace aging UHF/VHF transceivers such as the GRC-171.

With the intention to phase out the GRC-171 spelled out in the budget, the development of JTRS, and the lack of any publicized orders, it is believed the production of the GRC-171 has ceased. For these reasons this report will be archived in 2006.

Ten-Year Outlook

ESTIMATED CALENDAR YEAR PRODUCTION

Designation	Application	Thru 04	High Confidence Level				Good Confidence Level				Speculative			Total 05-14	
			05	06	07	08	09	10	11	12	13	14			
GRC-171(V)/A(V)	Prior Prod'n:	8260	0	0	0	0	0	0	0	0	0	0	0	0	0
GRC-171B/C/D(V)4	Prior Prod'n:	2492	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Production		10752	0	0	0	0	0	0	0	0	0	0	0	0	0