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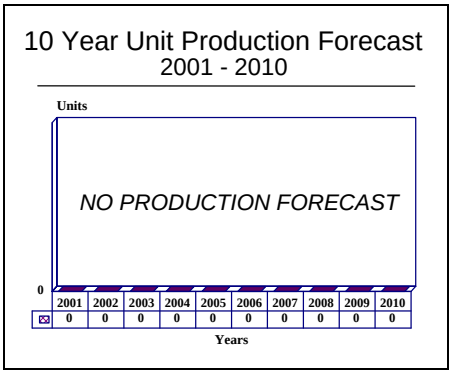
GRC-206(V) – Archived 12/2002

Outlook

- Last known order is believed to have been fulfilled
- JTRS candidates, like the ARC-210, dominate the market
- Barring any new activity, this report will be archived in the near future



Orientation

Description. HF/VHF/UHF transceiver, Pacer Speak.

Sponsor
US Air Force
Sacramento Air Logistics Center
McClellan AFB, California (CA)
USA

Contractors
Raytheon Systems Co
PO Box 92426
Los Angeles, California (CA) 90009-2426
USA
Tel: +1 310 334 4727
Fax: +1 310 334 6278
Web site: www.raytheon.com
(Prime contractor)

Status. Production appears to be completed.

Total Produced. An estimated 940 sets were produced through 2000.

Application. Utility vehicles and armored personnel carriers used mostly for forward air control operations.

Price Range. The price for complete, new systems cannot be determined. Using the 1993 US$4.4 million contract for 836 retrofit/upgrade kits to the (V)5 standard, their cost is estimated to be US$53,000.

Technical Data

	Metric	US
Dimensions		
Size		
Equipment Rack:	97 cm x 78 cm x 41 cm	38 in x 30.8 in x 16.2 in
Control:	31 cm x 20 cm x 11.4 cm	12 in x 8 in x 4.5 in
Weight		
Equipment Rack		
(V)1:	168 kg	370 lb

	Metric	**US**
(V)2:	136 kg	300 lb
(V)3:	186 kg	409 lb
(V)4:	171 kg	375 lb
(V)5:	191 kg	420 lb
Control (each)		
Without batteries:	6.9 kg	15.3 lb
With BB-590 batteries:	10.5 kg	23 lb
Primary Power:	2,025 W (max) at 22.5 to 30.0 VDC	
Environmental:	per MIL-STD-810	
EMI/EMC:	per MIL-STD-461/462	

Design Features. The GRC-206(V) is a total communications pallet within a family of radios, called Pacer Speak, which is used by all three US services for forward area control, air traffic control, and airlift support operations. The other members of this family of radios are the PRC-113, VRC-83, and TRC-176.

The GRC-206(V) radio system provides a complete communications suite housed in a compact three-tier rack suitable for installation in utility vehicles such as the HMMWV or armored personnel carriers such as the M113 series. Communications capabilities include HF/SSB (eight preset channels), VHF/FM (six presets), VHF/AM (eight presets), and UHF/AM (eight presets) frequencies. Remote control of the GRC-206(V) is accomplished via a fiber-optic cable at distances up to two miles (3.3 km).

The use of fiber optics aids in minimizing effects from noise and radiated energy. All functions of all radios are remote, i.e., frequency, channel, mode, key (PTT), audio in, and audio out. The GRC-206(V) is compatible with VIC-1, COMSEC devices, the H-250 handset, the DH-132 Combat Vehicle Crewman (CVC) helmet, and the PSC-2 Digital Communications Terminal.

Variants/Upgrades

GRC-206(V)1. Includes provisions for user-supplied COMSEC devices.

GRC-206(V)2. Does not include these provisions, but space is available for other user-selected components.

GRC-206(V)3. Is identical to the (V)1 except that electronic counter-countermeasures (ECCM) are provided within the UHF radio set.

GRC-204(V)4. Combined with the Meteorological Measuring System and ancillary equipment, this model is installed in a HMMWV to form the TSQ-198 Tactical Terminal Control System (TTCS) for the US Army. PSN-11 GPS capability is also provided.

GRC-206(V)5. Modifies the (V)3 to incorporate the SINCGARS radio and the USC-43(V) Advanced Narrowband Digital Voice Terminal (ANDVT). Built-In Test (BIT) functions were also enhanced.

GRC-206(V) P^3I. As part of preplanned product improvements, the GRC-203(V) can accommodate a PSC-5 enhanced man-pack UHF transceiver, either as an addition or by replacing an existing component (such as the RT-1319). Improvements include UHF/FM SATCOM and DAMA, 8.3 kHz channel spacing in VHF/AM for ICAO air traffic control in Europe, TDMA in VHF/AM for US civil (Federal Aviation Administration) air traffic control, SATURN ECCM in UHF/AM for NATO, expansion of the UHF band to 512 MHz for civil command and control, and video compression imagery.

Program Review

Background. Magnavox was awarded US$3.4 million in 1981 for first-article testing of its GRC-206(V) system. The system is part of the US Air Force Pacer Speak program to provide updated mobile communications gear for the Air Force's forward air controllers assigned to US Army ground combat units. This testing was followed later that year with a US$9.3 million production award for an initial 136 systems. Deliveries began in 1983.

In September 1989, Magnavox was selected over Harris Corp for the FY89 Pacer Speak procurement buy. Production continued steadily afterward in preparation for the upgrade to bring the GRC-206(V) radio to the (V)5 standard. Four contracts, with a total value of

US$67.4 million, were awarded to Magnavox between April 1990 and March 1991 (under contract number F04606-89-D-0110). In September 1993, the contract for the (V)5 upgrade was awarded; it entailed 836 retrofit packages and was to be fulfilled in one year.

In 1994, the GRC-206(V)4 was chosen as the base of the US Army's Tactical Terminal Control System and called the TSQ-198. A production contract has not been awarded, and a procurement schedule for the TSQ-198 has not been released.

Hughes Electronics' 1995 acquisition of Magnavox meant that Hughes Defense Communications would take over remaining GRC-206(V) business. In 1997, Raytheon acquired Hughes, which was absorbed into the new Raytheon Systems Company segment. Two years later, in late 1999, Raytheon was awarded a US$25 million contract to supply Greece with 46 GRC-206(V)s in addition to 200 VRC-radio sets and 22 mobile radio relay sets. Since this contract, no other activity for the GRC-206(V) has been detected.

Funding

No recent funding identified.

Recent Contracts

None noted since the following:

Contractor	Award ($ millions)	Date/Description
Raytheon	25.0	Sep 1999 – Under the Foreign Military Sales program, the contract enables the US Air Force to procure 46 GRC-206(V) radio communication systems, 200 VRC-83 radios sets, and 22 mobile radio relay sets for Greece. It also allows the acquisition of four VRC-83 radio sets for Jordan.

Timetable

Month	Year	Major Development
	1981	Magnavox awarded production contract
Late	1983	First units delivered
Mar	1991	Last production contract awarded for US Air Force
Sep	1993	Contract awarded for retrofit/upgrade to (V)5 standard
	1994	GRC-206(V)4 selected for US Army TTCS program
	1995	Corporate acquisition transferred GRC-206(V) business to Hughes
	1997	Hughes absorbed into Raytheon Systems Company
Sep	1999	Raytheon received US$25 million contract for Foreign Military Sale of GRC-206(V) to Greece

Worldwide Distribution

The GRC-206(V)'s principal user is the **US Air Force**, although the other US services are believed to have procured an undisclosed number of units. International users of the GRC-206(V) include **South Korea** and **Greece**.

Forecast Rationale

Raytheon's GRC-206(V) radio was originally designed to provide forward area control, air traffic control and airlift support operations. Created for installation in the M151 utility vehicles (Jeeps), M113 armored personnel carriers and High Mobility Multipurpose Wheeled Vehicles (HMMWV), the GRC-206(V) offers a multi-

band, multi-waveform communications suite that provides tactical anti-jam connectivity from high frequency through ultra-high frequency.

Success of the GRC-206(V) has been limited. With production lasting approximately 15 years, only 940 units have been produced. The last known order for the GRC-206(V) occurred in 1999. With the US military now focusing on the Joint Tactical Radio System (JTRS), demand for the GRC-206 has diminished. Other more advanced radios, like the ARC-210, are being considered as candidates for JTRS. In recent years, sales for the ARC-210 have been on the rise.

While the GRC-206(V) is a very capable system, its technology is quickly becoming obsolete. With JTRS becoming the centerpiece communications system for the US military, no major US contracts are expected. The international market also does not show any signs of promise. Many allies of the US have been placing orders for more advanced radios like the ARC-210. At this time, no further orders for the GRC-206(V) are being projected. Barring any new activity, this report will be archived in the near future.

Ten-Year Outlook

ESTIMATED CALENDAR YEAR PRODUCTION

			High Confidence Level				Good Confidence Level			Speculative			
Designation	**Application**	**Thru 00**	**01**	**02**	**03**	**04**	**05**	**06**	**07**	**08**	**09**	**10**	**Total 01-10**
GRC-206(V)	Prior Prod'n:	940	0	0	0	0	0	0	0	0	0	0	0