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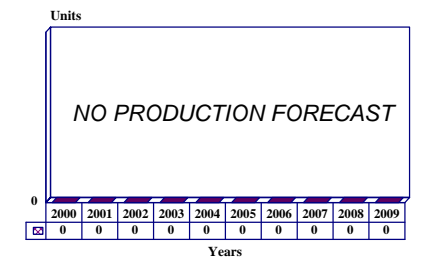
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ARC-182(V) - Archived 9/2001

Outlook

- No longer in production
- Being superseded by the newer ARC-210(V)
- **This report will be archived next year, 2001**

10 Year Unit Production Forecast
2000 - 2009



Orientation

Description. VHF/UHF tactical radio system.

Sponsor

US Navy
Naval Air Systems Command (NAVAIR)
Jefferson Plaza Bldg. 1
Washington, DC 20361
USA
(Program lead)

US Army

Communications-Electronics Command
Ft Monmouth, New Jersey (NJ)
USA
(ASC-15B console)

Contractors

Rockwell International Corp
Collins Avionics & Communications Division
350 Collins Road NE
Cedar Rapids, Iowa (IA) 52498
USA
Tel: +1 319 395 1000
Fax: +1 319 395 4777
Web site: <http://www.rockwell.com>
E-mail: collins@collins.rockwell.com
(Prime: development/production)

Status. Limited production by special order only.

Total Produced. Through 1999, an estimated 6,809 units had been produced.

Application. Airborne tactical communications (over 70 types of aircraft).

Price Range. A 1993 contract suggests that the unit price of an ARC-182(V) radio set is approximately US\$25,000.

Cost is believed to have risen sharply, considering the manufacturers abandonment of the ARC-182. Available through special order only.

Technical Data

	<u>Metric</u>	<u>US</u>
Dimensions		
Size		
RT-1324A/ARC:	12.4 cm x 14.6 cm x 16.5 cm	4.87 in x 5.75 in x 6.50 in
Control:	5.7 cm x 14.6 cm x 14.0 cm	2.25 in x 5.75 in x 5.50 in
Indicator:	3.4 cm x 8.4 cm x 15.3 cm	1.32 in x 3.30 in x 6.02 in
Weight		
RT:	4.54 kg	10 lb
Control:	1.02 kg	2.25 lb
Indicator:	0.499 kg	1.1 lb
Frequency Range:	30.0 MHz - 87.975 MHz (FM close air support) 108.0 MHz - 117.975 MHz (AM (receive only)) 118 MHz - 155.975 MHz (AM air traffic control) 156 MHz - 173.975 MHz (FM maritime) 225 MHz - 399.975 MHz (AM/FM military/NATO)	
Preset Channels:	28 or 30, nonvolatile memory	
Channel Spacing:	25 kHz in all bands	
Frequency Accuracy:	+/- 1 part per million	
Input Power:	MIL-STD-704 28 V DC; receive 20 W, transmit 150 W max	

Design Specifications. The ARC-182 was designed to be the US Navy standard combination radio for various tactical aircraft. Previous systems were composed of individual radios for each major frequency band. The capability to communicate at the VHF-FM (30 MHz-88 MHz) close-air support, VHF-AM (108 MHz-156 MHz) air traffic control, and UHF-AM (225 MHz-400 MHz) military frequency ranges required at least three separate radios. The sheer size and weight of these units incurred a significant penalty for aircraft equipment installation volume, weight and primary power allocations.

The ARC-182 combination radio provides tactical aircraft with low- and high-power VHF-FM, UHF-FM (225 MHz-400 MHz) and UHF-AM voice radios, aircraft frequency-hopping filters and a broadband aircraft antenna. The ARC-182 radio covers the above three ranges, incorporates the VHF-FM (156 MHz-174 MHz) maritime band, and has UHF-FM capability, all within the configuration limits of recent design single-frequency band systems.

This system incorporates a ruggedized construction that eliminates equipment downtime due to non-operational, inadvertent damage. Application of the latest design and manufacturing techniques has produced decreases in weight, size, and logistical requirements compared to

other communications packages, and increased reliability in the ARC-182 transceiver that has drastically reduced life-cycle cost.

Operational Characteristics. The ARC-182 encompasses four guard receiver channels: 40.5 MHz, 121.5 MHz, 156.8 MHz, and 243 MHz; 28 or 30 preset channels, nonvolatile memory; circuits in RT-1250A/ARC for direct MIL-STD-1553B multiplex system control; secure voice narrow-band and wide-band compatibility; and a 1,000-hour mean time between failure (MTBF).

The ARC-182 provides an advanced thermal efficiency design that results in a temperature difference of only 3°C between internal circuit boards and the outer surface of the radio, and a Class 2 environment operating range of -54° to +71° C with continuous use at 70,000 feet altitude, with half an hour at +95°C at reduced power (2.5 watts). The radio also features a vibration rating of 8.5 g rms functional, 12.7 g rms endurance; an installation weight of 10 lb max; a 250-cubic-inch volume; and a unique built-in test (BIT) system that provides fault detection and isolation of the specific module level, which greatly reduces troubleshooting efforts, special test equipment requirements and system downtime.

Variants/Upgrades

The ARC-182(V) family consists of many receiver-transmitters (RT), controls and ancillary equipment. A partial list follows:

Receiver-Transmitters

- RT-1324A - Panel Mounted Radio
- RT-1327A - Panel Mounted Radio
- RT-1407 - Panel Mounted Radio
- RT-1250A - Remote Mounted Radio (MIL-STD 1553B provisions)
- RT-1250B - Remote Mounted Radio (MIL-STD 1553B)
- RT-1360A - Remote Mounted Radio
- RT-1498 - Remote Mounted Radio for CASS/DICASS sonobuoy compatibility
- 628B-4 - Remote Mounted Radio (four channel scanning and SATCOM capabilities)
- 628U-14 - Remote Mounted Radio (with embedded HAVE QUICK II)

Remote Control Units

- C-10319A (red lighted panel)
- C-10776A (white lighted panel)
- C-11131 (blue/white lighted panel)
- 379F-12 (provides guard operation in 146-174 MHz band)

Remote Channel/Frequency Indicator

- ID-2121A (red lighted panel)
- ID-2229A (white lighted panel)
- ID-2303 (blue/white lighted panel)

Mountings

- MT-4934 - Mount for RT-1250A or RT-1360A

MT-4935 - Mount for RT-1250A or RT-1360A

ASC-15B(V)1. Designed for use aboard US Army helicopters, Rockwell's ASC-15B(V)1 command and control systems provide a full range of voice and data communications including scanning, satellite, and electronic counter-countermeasures (ECCM) capabilities. The ASC-15B(V)1 consists of three ARC-182s, one ARC-174 HF radio, and associated hardware built into a console for use aboard command helicopters.

HAVE QUICK. According to Rockwell, certain versions of the ARC-182(V) incorporate embedded HAVE QUICK. These specific versions could not be identified.

ARC-210(V). An enhancement program for the ARC-182(V) was developed to add ECCM capabilities: SINGGARS compatibility in the 30 MHz to 80 MHz range and HAVE QUICK II VHF compatibility at 225 MHz to 400 MHz. The upgraded ARC-182(V) is designated the ARC-210(V), and it has become the new standard VHF/UHF airborne communications system for the US Navy. A further enhanced version with HAVE QUICK IIA capability is also in development.

All the US services – including the Coast Guard – are receiving the ARC-210 for their aircraft. According to Rockwell, it is now being installed across US services in such aircraft as the UH-60, F/A-18, CH-46, V-22, AH-1W, B-1B, B-52, and MH-53. International installations include the Canada C-130, and Finnish and Swiss F/A-18s.

Program Review

Background. Development of the ARC-182(V) combination radio system began in 1978, and initial production followed in 1980. The radio is the replacement for the ARC-159(V), which completed its full-rate production run in 1993.

In June 1986, E-Systems (later Raytheon E-Systems, now Raytheon Systems Company) Communications Manufacturing Division was selected for second-source production of the US Navy ARC-182(V). The Naval Avionics Center awarded a US\$3.5 million contract to E-Systems for the production program. The Navy had thus initiated competitive procurement, based on a 75/25 percentage split. Collins was awarded the major share of the FY89 buy.

In 1993, Rockwell was awarded the latest yearly procurement contract for ARC-182(V) radios and ancillary equipment. This followed a US\$5.5 million, April 1992 Rockwell Collins order and a June 1991 award (US\$6.4 million) to E-Systems. The sole supplier of ARC-182(V) equipment has since been Rockwell.

An interesting and fairly new application for the ARC-182 is its use in conjunction with an APS-143(V)2 surveillance radar for the Maritime Aerostat Tracking and Surveillance System (MATSS), developed in 1994/1995 for coastal surveillance and EW missions.

US Navy procurement of the ARC-182(V) follow-on, the ARC-210(V), began in 1994. Rockwell announced in early 1999 that it had ceased general production of the system. The ARC-182 will only be produced by special order after 1999. The system is being widely replaced with the newer ARC-210(V).

Funding

No funding for the ARC-182(V) is indicated within US Navy procurement documents.

Recent Contracts

None identified since the following:

<u>Contractor</u>	<u>Award (\$ millions)</u>	<u>Date/Description</u>
Rockwell Collins	11.5	Jan 1993 – FFP contract to provide eight line items in support of the ARC-182(V) program: 406 RT-1250A receiver/transmitters, 44 RT-1498 receiver/transmitters, 66 C-10219A controls, 13 C-10776A controls, 92 C-10319B controls, 55 C-12109 controls, and 289 MT-4934 mounts. This contract was for the US Navy (95.5%) and the government of Taiwan (4.5%). Completed September 1994. (F09603-92-D-1372)

Timetable

<u>Month</u>	<u>Year</u>	<u>Major Development</u>
	1978	Collins awarded contract for ARC-182 development
	1980	Production begun
	1983	Full-scale development of broadband antenna begun
Jul	1984	Approval for production granted for F-14D
Jun	1986	E-Systems awarded second-source production
Jun	1987	US Army awarded contract for 20 ASC-15B(V)1s
	1988	ECCM upgrade completed
Jan	1994	US military begins taking deliveries of ARC-210(V), the eventual replacement for ARC-182(V)
	1998	Final production run of ARC-182(V)

Worldwide Distribution

The manufacturer claims that the ARC-182(V) is in service with 42 countries on ground, mobile, and airborne installations. Some of the identified users of the equipment for aircraft include **Australia** on F-18A/B and P-3C; **Canada** on CF-18A/B and CP-140; **Israel** on E-2C; **Japan** on E-2C and P-3C; **Netherlands** on P-3C; **Singapore** on E-2C; and **Spain** on EAV-8B and EF-18A/B. **US** and other applications have included HC-130H, AV-8B, F/A-18, T-45, MV-22, EP-3, UH-1H, CH-53A, E-2C, H-2, X-31, CV Helo, SH-60B, SH-60F, S-70, HH-65, OV-10D, MH-53, P-3, VH-60, UH-46, E-6A, EA-6, H-3, A-6F, C-130F, V-2246, HH-46, P-7, AH-1W, CH-46, RH-53D, MH-53E, ES-3, C-9, KA-6D, OH-58 and the Boeing 737.

Forecast Rationale

AN/ARC-182(V) production was completed in 1998. According to the manufacturer's product report: "The AN/ARC-182(V) is not recommended for new platform integrations or system designs. The AN/ARC-182(V) is a special order production item in 1999. Support will be maintained, but production will cease. For new

platform integration, platform upgrades or system designs, the AN/ARC-210(V) is recommended."

The ARC-210 is being used to replace the ARC-182 on newer aircraft, and is being retrofitted on many older US platforms.

Ten-Year Outlook

Due to production halt, the forecast chart has been omitted. **This report will be archived next year, 2001.**

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