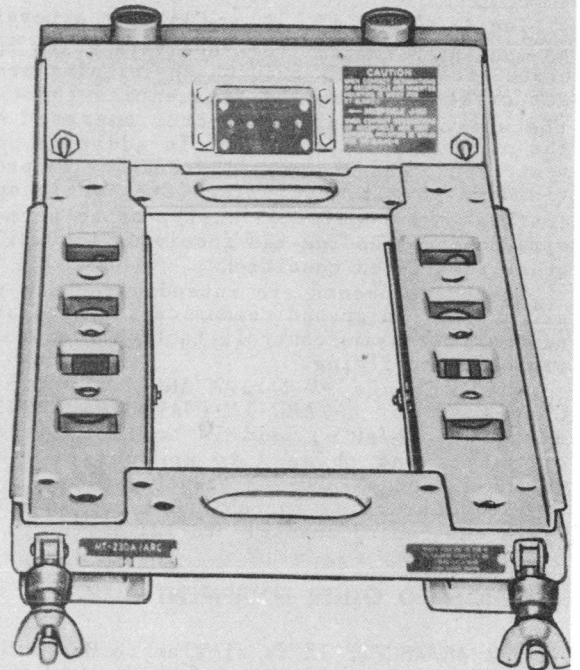


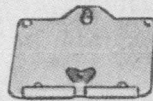
RADIO TRANSMITTER-RECEIVER
RT-18A/ARC-1



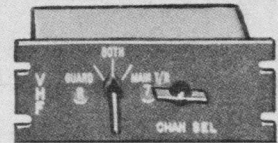
MOUNTING BASE MT-230A/ARC
AND CABLING CX-181B/ARC-1



CONTROL UNIT
C-45/ARC-1
(NOT SUPPLIED)



MOUNTING PLATE
★ MT-4/ARR-2
(NOT SUPPLIED)



CONTROL UNIT C-115/ARC-1
(ALTERNATE UNIT)
(NOT SUPPLIED)



PLUG
AN-3106-20-1S
(NOT SUPPLIED)



PLUG
AN-3106-20-16P



PLUG
AN-3106-20-1P

PLUGS INCLUDE CLAMPS AN-3057-12

Radio Set AN/ARC-1A

AN/ARC-1, 1X, 1A, 1AX

RADIO SET

December 1956

FUNCTIONAL DESCRIPTION

The AN/ARC-1, 1X, 1A, and 1AX are aircraft A3 modulated transmitter-receivers which operate within the VHF band on any of nine preset crystal-controlled frequencies through the use of a channel selector operated by the pilot of the aircraft. In addition one restricted "guard channel" frequency is provided to permit monitoring (even while operating on a regular channel), or to permit simultaneous sending and receiving operation under restricted conditions.

These equipments are intended for air to air and air to ground communication, and are suitable for flying control, tactical control, or formation flying.

Field Change #3 for AN/ARC-1 and Field Change #1 for AN/ARC-1A (NAVSHIPS 98543) adapt the AN/ARC-1 and 1A to 115 volt AC operation and changes to nomenclature to AN/ARC-1X and AN/ARC-1AX respectively.

Field Change #2 for AN/ARC-1 and 1A modifies the "guard channel" to 121.5 mc.

RELATION TO OTHER EQUIPMENT

The AN/ARC-1, 1X is similar to Radio Set AN/ARC-12 (higher frequency band), and will be replaced by Radio Set AN/ARC-27.

Equipment Required but not Supplied: (1) Antenna AT-8/AR, AN-104AX and AN-104BX (1) Transmission Line R6-8/U, (1) Headset H-1/AR or H-4/AR, (1) Microphone ANB-M-C1 or M-5/UR, (1) Jack Box, (1) Junction Box; Plug, Plug Adapter, Controls, Mounting Cables and Test Equipment as required.

ELECTRICAL AND MECHANICAL CHARACTERISTICS

FREQUENCY RANGE: 100 to 156 mc.
PRESET CHANNELS: 10 (including guard channel).

GUARD CHANNEL: 121.5 mc.
FREQUENCY STABILITY: 0.025%.
MAXIMUM RANGE (NORMAL CONDITIONS): Line of sight distance (280 miles approx) at 50000 ft.

RECEIVER

INTERMEDIATE FREQUENCY: 9.72 mc.
AUDIO FREQUENCY OUTPUT: Dual output arranged for either 300 or 4000 ohm load.
NOISE SUPPRESSION: Squelch circuit and peak-noise limiter.

SENSITIVITY: 2.8 uv (approx).

TRANSMITTER

OUTPUT IMPEDANCE: 50 ohms.
POWER OUTPUT (RF CARRIER): 8W approx.
MODULATION TYPE: Amplitude.
SELECTIVITY: 25 db down at 100 kc from resonance.
PEAK POWER OUTPUT: 4 times carrier output.

POWER REQUIREMENTS

DYNAMOTORS DY-9/ARC1, DY-9A/ARC-1 or DY-9B/ARC-1.

RATED INPUT: 26 v DC at 4 amp (continuous); 26 v DC at 7.5 amp (intermittent).

RATED OUTPUTS: 360 v DC at 0.135 amp (continuous); 310 v DC at 0.355 amp (intermittent).

POWER SUPPLY PP-1092/U

INPUT: 115 or 230 v AC, 60 cps, single ph, 450W.

OUTPUT: +360 v DC at 360 ma, -150 v DC at 30 ma, either 13 v DC or 26 v DC at 4.0 amp.

ANTENNA DATA: 2 types of 1/4 wave base feed antennas are used (1) is a rod-type and (2) is a mast-type. Mast types are for dual purpose use, primarily as a VHF antenna and also as a support for a fore and aft antenna.

MANUFACTURER'S OR CONTRACTOR'S DATA

Western Electric Co., New York, N.Y.

Contract NXsa-31225, dated 1943 (AN/ARC-1, 1X).

Contract NXsa-96346, dated 16 Nov. 1945 (AN/ARC-1A, 1AX).

Approximate Cost: \$1,100.00 with equipment spares.

TUBE AND/OR CRYSTAL COMPLEMENT

AN/ARC-1, 1X

(2) 6C4	(18) 6AK5
(2) 832A	(2) 6V6GT/G
(2) 6J6	(1) 12SL7GT
(2) 12A6	

Total Tubes: (29)

AN/ARC-1A, 1AX

(2) 6C4	(17) 6AK5
(2) 832A	(2) 6V6GT/G
(2) 6J6	(1) 12SL7GT
(2) 12A6	

Total Tubes: (28)

AN/ARC-1, 1X

(3) CR-1A/AR

Total Crystals: (12)

(9) CR-1B/AR

AN/ARC-1A, 1AX

(3) CR-1A/AR

Total Crystals: (12)

(9) CR-1B/AR

REFERENCE DATA AND LITERATURE

- AN 16-30 ARC1-3: Technical Manual of Maintenance Instructions for Aircraft Radio Equipment AN/ARC-1.
- AN 16-30 ARC1-7: Technical Manual of Maintenance Instructions for Radio Set AN/ARC-1A.
- NAVSHIPS 98543: F/C #3 for AN/ARC-1 and F/C #1 for AN/ARC-1A.

TYPE CLASSIFICATION
DESIGN COGNIZANCE
PROCUREMENT COGNIZANCE ^{BUAER}
STOCK NO.

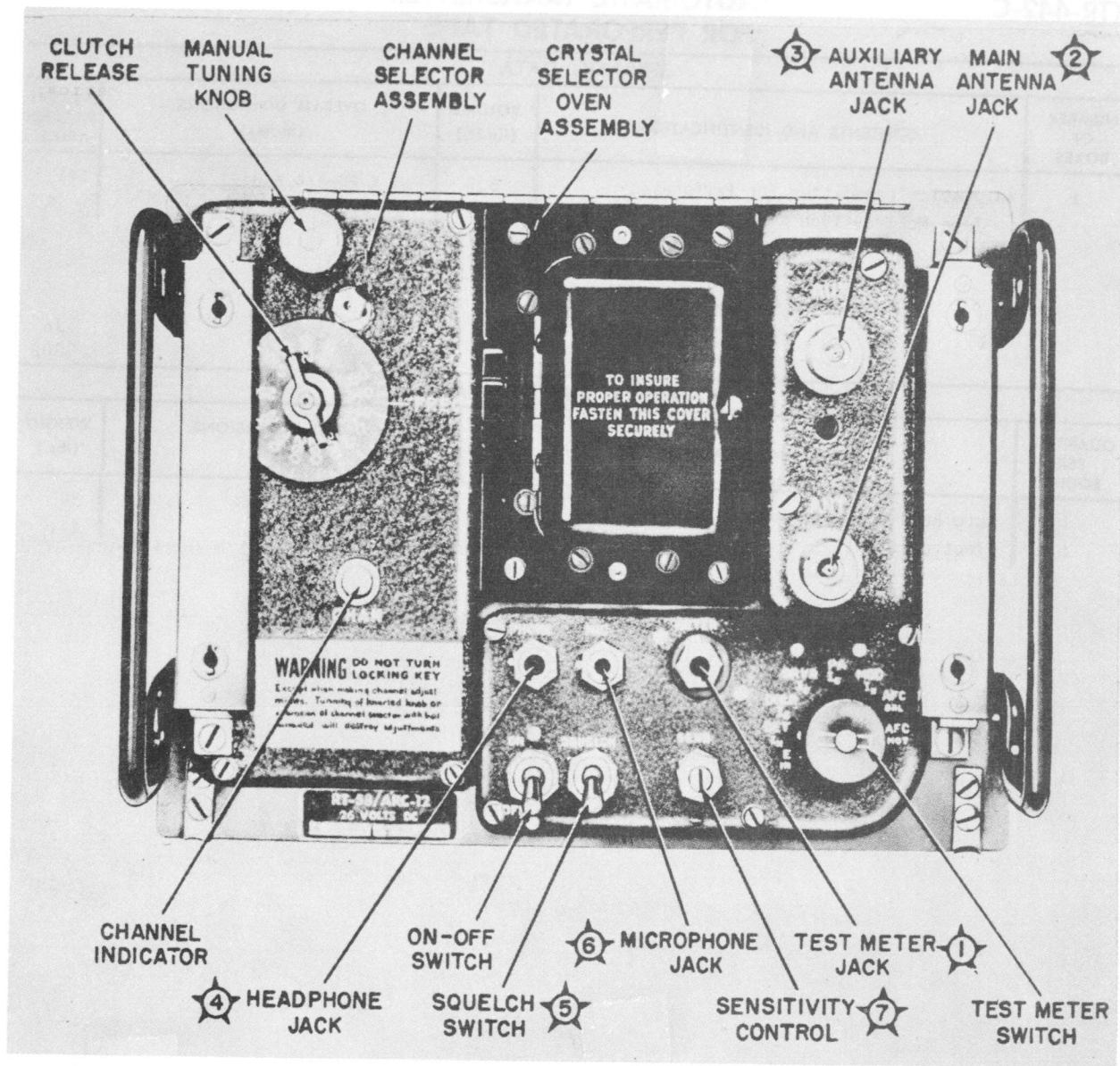
EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT				NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
AN	ARC-					
1	1X	1A	1AX			
1	1			Radio Transmitter-Receiver RT-18/ARC-1 including: Mounting Base MT-100/ARC-1, MT-230/ARC or MT-239A/ARC	9-1/32 X 10-7/8 X 24-3/8	40.0
		1	1	Radio Transmitter-Receiver RT-18A/ARC-1 including: Mounting Base MT-230A/ARC	9-1/32 X 10-7/8 X 24-3/4	4.4
1				Dynamotor DY-9/ARC-1, DY-9A/ARC-1 or DY-9B/ARC-1	3-1/2 X 5-1/4 X 9	4.4
		1		Dynamotor DY-9B/ARC-1	3-1/2 X 5-1/4 X 9	7.0
	1		1	Power Supply PP-1092/U (Supplied on Field Change)	15 X 16 X 20	5.7
1	1	1	1	Cabling CX-181B/ARC-1*		85.0
1	1			Control Unit C-45/ARC-1, C-115/ARC-1 or C-865/ARC-1		1.75
1	1			Mounting Plate MT-4/ARR-2 (for C-45/ARC-1)		1.0
1	1			Plug AN-3106-20-1S with Cable Clamp AN-3057-12	1-7/8 dia	
1	1	1	1	Plug AN-3106-20-16P with Cable Clamp AN-3057-12	1-7/8 dia	
1	1	1	1	Plug AN-3106-20-1P with Cable Clamp AN-3057-12	1-7/8 dia	
2	2			Terminal Lug, 25 amp.		
6	6			Grip Terminal (Diamond)		
		1	1	Set of Tools		

*Furnished with Mounting Base MT-230/ARC and MT-230A/ARC, providing the equivalent of MT-100/ARC-1.

RADIO SET

Radio-Transceivers
AN/ARC-12



Radio Set AN/ARC-12

FUNCTIONAL DESCRIPTION

The AN/ARC-12 is designed to provide radio telephone communication between aircraft or between aircraft and ground stations. Provision is made for the remote selection of any one of nine pre-determined main channel frequencies in the band or a guard channel

frequency which is fixed and within a restricted band covered by the specification for the radio set. The receiver circuit includes a separate rf unit which permits monitoring on the guard channel while operating on one of the main channels.

No field changes in effect at time of preparation (12 June 1956).

RELATION TO OTHER EQUIPMENT

Equipment Required but not Supplied: (1) Antenna, (1) RF Cable RG-8/U, (1) Microphone ANB-M-C1, M5/UR, NAF213264-6, (1) Headset H-1/AR, H-4/AR, (1) Junction Box J-17A/ARC-5, (1) Jack Box J-22B/ARC-5, (1) DC Power Source, 2 Cable (Open Wire), Connectors as Required.

ELECTRICAL AND MECHANICAL CHARACTERISTICS

POWER REQUIREMENTS

RECEPTION: 26.5 v DC, 9 amp continuous.
 TRANSMISSION: 26.5 v DC, 11.5 amp maximum continuous.

CHANNEL SWITCHING INTERVAL RECEPTION: 26.5 v DC, 11 amp intermittent.

CHANNEL SWITCHING INTERVAL TRANSMISSION: 26.5 v DC, 13.5 amp maximum intermittent.

RECEIVER OUTPUT: 100 mw into a 300 ohm resistive load with an rf input of 10 uv, 30% modulated at 1000 cps. An AF output of 500 mw (-10% +20%) is obtained with an RF input of 1000 uv, 30% modulated at 1000 cps.

TRANSMITTER OUTPUT: RF output of 6 W, 225 to 35 mc.

MANUFACTURER'S OR CONTRACTOR'S DATA

RCA, Victor Div. Radio Corp. of America,
 New York, N.Y.
 Contract NObsa 30232
 Western Electric Co., New York, N.Y.
 Contract NObsa 30181
 Approximate Cost: \$4000.00.

TUBE AND/OR CRYSTAL COMPLEMENT

(2) 2C39 (18) 6AK5 (4) 6AK6 (4) 6AL5
 (5) 6AQ6 (3) 6AS6 (2) 6F4 (1) 6J6
 (2) 6V6GT/G (1) 9002

Total Tubes: (42)
 (12) CR-17/U

Total Crystals: (12)

REFERENCE DATA AND LITERATURE

AN-16-30ARC12-3: Technical Manual for Radio Set AN/ARC-12

TYPE CLASSIFICATION
 DESIGN COGNIZANCE BUAER
 PROCUREMENT COGNIZANCE
 STOCK NO.

EQUIPMENT SUPPLIED DATA

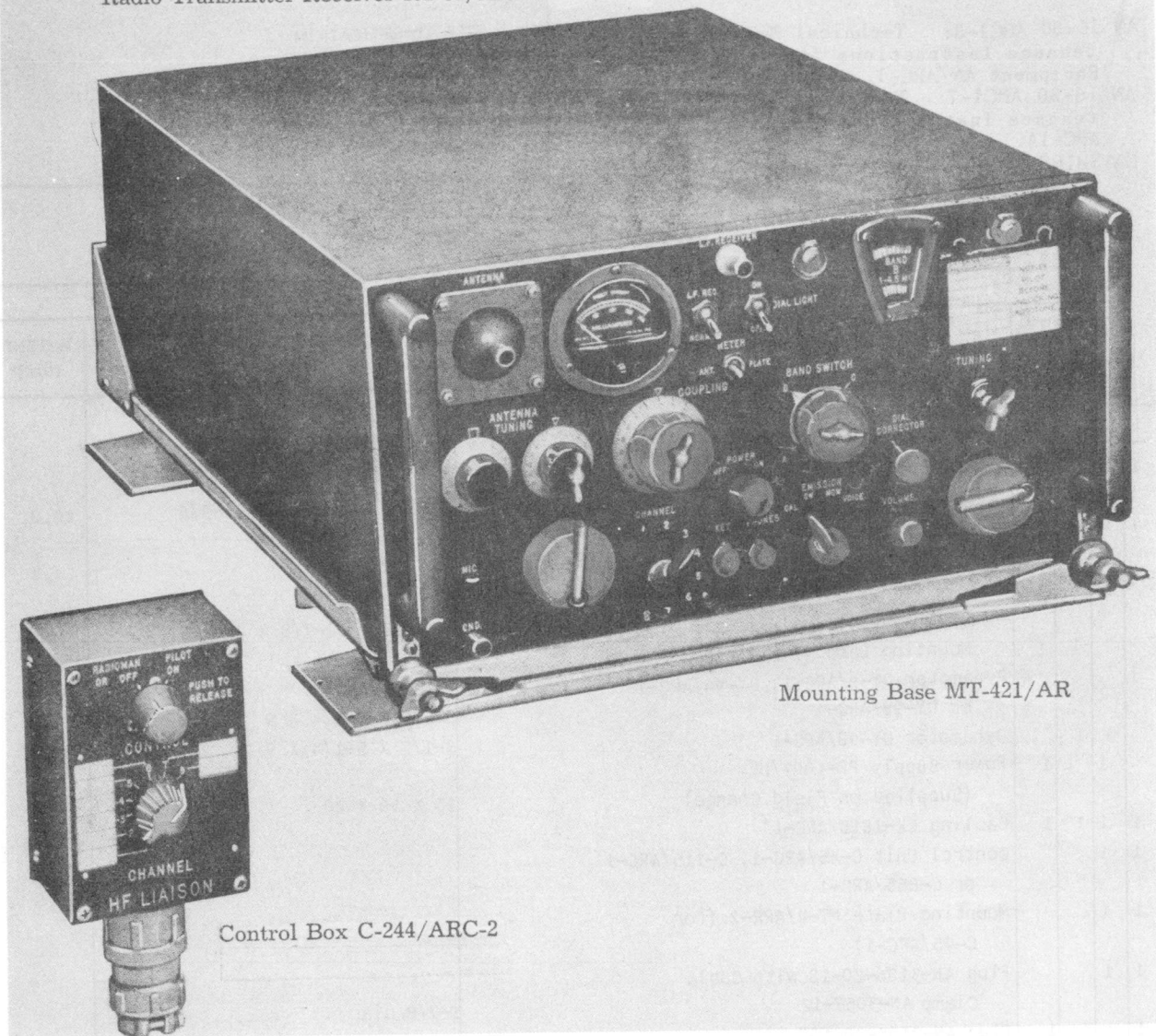
QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Transmitter-Receiver RT-58/ARC-12	9-1/32 X 10-7/8 X 24-1/2	45.3
1	Dynamotor DY-9B/ARC-1	3-1/2 X 5-1/4 X 9-3/16	5.7
1	Mounting Base MT-230A/ARC		4.13
1	Cabling CX-181B/ARC-1		1.75
1	Control Unit C-115/ARC-1 or C-45/ARC-1	2-1/4 X 6 X 6-1/2	0.8
1	Mounting Plate MT-4/ARR-2		0.1
	Accessories Consisting of:		
1	Connector AN-3106-20-1S with Cable Clamp AN-3057-12	1-7/8	0.2
1	Connector AN-3106-20-1P with Cable Clamp AN-3057-12	1-7/8	0.2
1	Connector AN-3106-20-16P with Cable Clamp AN-3057-12	1-7/8	0.2
2	Connector UG-12/U	3/4	0.1

April 1958

AN/ARC-2, -2A

RADIO SET

Radio Transmitter-Receiver RT-91/ARC-2



Mounting Base MT-421/AR

Control Box C-244/ARC-2

Radio Set AN/ARC-2, -2A

FUNCTIONAL DESCRIPTION

The AN/ARC-2 equipment has been designed for installation in all types of Naval Aircraft. Its purpose is to provide reliable, preset, multi-channel, A1, A2, and A3, pilot or radio operator controlled, two way radio communication.

The AN/ARC-2A is functionally identical to the AN/ARC-2 but differs in design of asso-

cated components.

No field changes in effect at time of preparation (24 March 1958).

RELATION TO OTHER EQUIPMENT

Equipment Required but not Supplied: Headphones, microphone, antenna, primary power source, throttle switch, and interphone.

April 1958

Radio-Transceivers

AN/ARC-2, -2A**RADIO SET****ELECTRICAL AND MECHANICAL CHARACTERISTICS**

TRANSMITTER RF OUTPUT: 17-30 W min.
 RECEIVER AUDIO OUTPUT: Consistent at 500 mw max with AVC and noise limiter action.
 AUDIO RESPONSE: ± 3 db relative to the response at 1000 cps for modulated frequencies of 300 to 3500 cps.
 FREQUENCY RANGE: 2000 to 9050 kc.
 OPERATING TEMPERATURE: -58° F to $+140^{\circ}$ F.
 OPERATING ALTITUDE: Up to 40,000 ft above sea level.
 TYPE OF CONTROL: Autotune system, manual or electrical selection at eight pre-selected frequency channels.
 ANTENNA DATA: Designed to operate with an antenna that has within $\pm 20\%$ of 3 to 100 ohms, and $\pm 20\%$ or ± 50 ohms, whichever is greater, of -500 to $+300$ reactance (ohms).
 POWER SOURCE REQUIRED: 26.5 v DC at 20 amp continuous duty. Must withstand surge of 60 amp for 0.5 second.

Approximate Cost: \$2690.00 with equipment spares.

TUBE AND/OR CRYSTAL COMPLEMENT

AN/ARC-2	
(4) 12A6	(1) 12SJ7
(4) 12H6	(2) 12SL7GT
(2) 12SA7Y	(4) 1625
(8) 12SG7Y	
Total Tubes: (25)	
AN/ARC-2A	
(4) 12A6	(1) 12SJ7
(4) 12H6	(2) 12SL7GT
(2) 12SA7Y	(4) 1625
(8) 12SG7Y	
Total Tubes: (25)	
(1) 100KC Quartz	
Total Crystals: (1)	

MANUFACTURER'S OR CONTRACTOR'S DATA

Collins Radio Co, Inc, Cedar Rapids, Iowa.
 Contract NXsa 90807, Approved 1 July 1945.
 Contract NOas 11025, Revised 15 December 1946 (AN/ARC-2).
 Contract NOas 51-27a.
 Approximate Cost: \$2,296.00.
 Collins Radio Company, Cedar Rapids, Ia.
 Contract NOas 52-918, dated 16 May 1952 (AN/ARC-2A).

REFERENCE DATA AND LITERATURE

AN16-30ARC2-3, Technical Manual for AN/ARC-2 Aircraft Radio Equipment.
 NAVAER 16-30ARC2-501 Technical Manual for Radio Sets AN/ARC-2 and AN/ARC-2A.

TYPE CLASSIFICATION DESIGN COGNIZANCE BUAER PROCUREMENT COGNIZANCE STOCK NO.

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	AN/ARC-2 Transmitter Receiver RT-91/ARC-2	7-23/32 X 15-9/16 X 21-13/32	63.5
1	Mounting Base MT-421/AR	5-3/16 X 16-1/2 X 23-15/32	6.0
1	Dynamotor DY-31/ARC-2	9-3/32 X 4-1/16 X 4-1/16	9.5
*	Control Box C-243/ARC-2	5-15/16 X 3-1/2 X 3-1/4	2.0
*	Control Box C-244A/ARC-2	8-2/16 X 3-5/8 X 3-1/4	1.3
*	Control Panel C-245A/ARC-2	7-23/32 X 6 X 2-1/4	1.3
*	Mounting Plate MT-163/ART-13	5-1/4 X 3-5/8 X 3/16	.25

* One or more control units and mounting plates are supplied.

April 1958

RADIO SET

Radio-Transceivers

AN/ARC-2, -2A

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
	AN/ARC-2A		
1	Transmitter Receiver RT-298/ARC-2A	7-23/32 X 15-9/16 X 21-13/32	63.5
1	Mounting Base MT-421/AR or MT-421A/AR	5-3/16 X 16-1/2 X 23-15/32	6.0
1	Dynamotor DY-31/ARC-2	4-1/16 X 4-1/16 X 9-3/32	9.5
*	Control Box C-244A/ARC-2	3-1/4 X 3-5/8 X 8-1/8	1.3
*	Control Panel C-245A/ARC-2	2-1/4 X 6 X 7-23/32	1.3
*	Radio Set Control C-732/ARC-2	2-1/4 X 5-1/4 X 6-5/8	1.9
*	Radio Set Control C-732A/ARC-2	2-1/4 X 5-1/4 X 5-3/4	1.7
*	Mounting Plate MT-163/ART-13	3-16 X 3-5/8 X 5-1/4	0.25

NOTE: *One or more may be supplied, but may be supplied on different contract than the RT-298/ARC-2A was supplied. Some Control Boxes C-244/ARC-2 and Control Panels C-245/ARC-2 have been supplied. Mounting Plate MT-163/ART-13 is for use with Control Box C-244A/ARC-2.

UNCLASSIFIED

April 1959

Radio Transceivers

AN/ARC-25

RADIO SET

FUNCTIONAL DESCRIPTION

The AN/ARC-25 is designed as an airborne radio communication set, which operates from any one of ten (10) preset frequencies within the frequency range 2000 to 18000 kilocycles (kc), with an output of 100 watts using continuous wave (cw), modulated continuous wave (mcw) or voice.

No field changes in effect at time of preparation (8 September 1958).

ELECTRICAL AND MECHANICAL CHARACTERISTICS

TYPE OF RECEPTION: AM.

OUTPUT POWER: 100 W.

OPERATING FREQUENCY RANGE: 2000 to 18000 kc.

OPERATING POWER REQUIREMENT: 28 v DC.

TUBE AND/OR CRYSTAL COMPLEMENT

Electron and Crystal data not available.

REFERENCE DATA AND LITERATURE

Nomenclature Card AN/ARC-25 for Radio Set.

TYPE CLASSIFICATION

DESIGN COGNIZANCE BUAER

PROCUREMENT COGNIZANCE

STOCK NO.

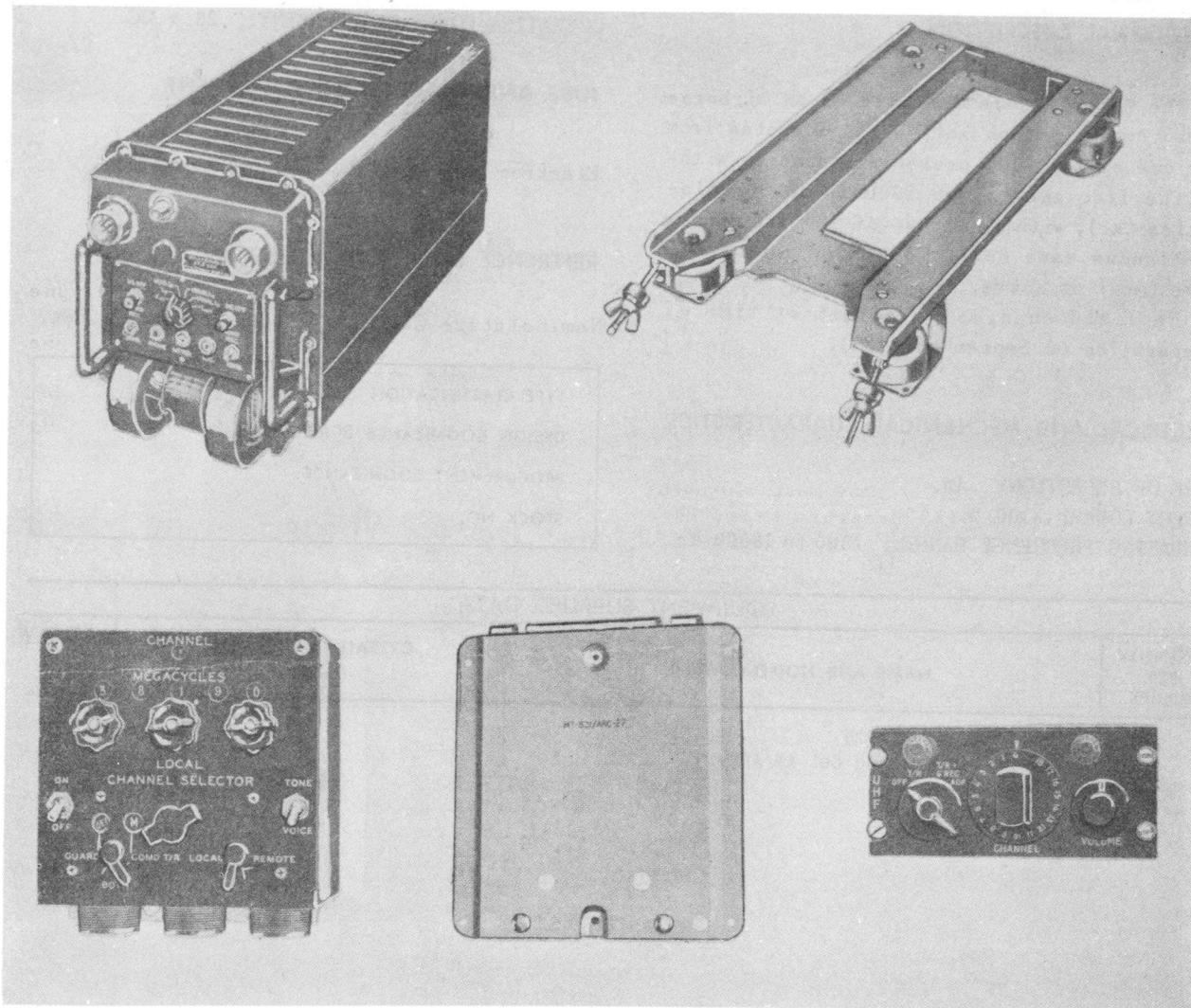
EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Radio Set AN/ARR-15		
1	Radio Transmitting Set AN/ART-13		

UNCLASSIFIED

April 1958

RADIO SET

AN/ARC-27, AN/ARC-27A,
AN/ARC-55

Radio Set AN/ARC-27

FUNCTIONAL DESCRIPTION

The AN/ARC-27, AN/ARC-27A and AN/ARC-55 are complete airborne transmitting and receiving stations with all necessary equipment mounts and control units. The operator may hold two-way radio telephone communication on any one of 1750 frequency channels between 225 and 399.9 mc. AN/ARC-27 may be preset to any eighteen of these frequency channels, AN/ARC-27A may be preset to any twenty of these frequency channels, and AN/ARC-55 may select manually any one of 1750 frequency channels. Continuous monitoring of a guard frequency in the 238 to 248 mc band is provided in either of the three equipments.

The transmitter portion of the AN/ARC-27 and AN/ARC-55 may be tone modulated (A-2) with a 1020 cps continuous tone signal, generated within the equipment, for emergency or direction finder purposes. Tone transmission is not provided in AN/ARC-27A.

When installed with certain accessories the equipment is designed for use as an automatic direction finding (ADF) facility. The ADF and homing operations are in conjunction with Direction Finder Group AN/ARA-25.

When installed with the necessary control units and accessory equipment, two RT-178/ARC-27 or two RT-394/ARC-55 Receiver-Transmitters may be connected in such manner that an incoming signal received on one unit will

April 1958

Radio-Transceivers

**AN/ARC-27, AN/ARC-27A,
AN/ARC-55****RADIO SET**

be automatically relayed and retransmitted from the second unit on an alternate frequency.

No field changes in effect at time of preparation (21 March 1958).

RELATION TO OTHER EQUIPMENT

Equipment Required but not Supplied:
AN/ARC-27, 27A, 55

(1) 27.5 v Battery, (1) Antenna AT-141/ARC, (1) RF Cable RG-8/U, (1) Headset H-1/AR or equal, (1) Microphone NAF213264-6 and ANB-MCL or equal, (1) Throttle Switch NAF-1124-17, (1) Interphone AN/AIC-4 or equal, (1) Junction Box J-17A/ARC-5 or equal (1) Jack Box J-22B/ARC-5 or equal, (1) Test Meter TS-80/U (1) Set of Cables, (1) Armature Relay RE-101/ARC-27, (1) Connector AN3108B-24-5S, (1) Connector AN3108B-24-7S, (1) Connector AN3106A-28-21S.

AN/ARC-27

(1) Connector AN3106A-24-7S, (1) Connector AN3106-24-5P, (1) Connector AN3106A-24-20P (1) Connector AN3106A-22-14S, (1) Connector AN3106A-22-14SW (1) Connector AN3106A-36-8S, (1) Cable Clamp AN3057-24 (5 or 6) Cable Clamps AN3057-16, (1 or 2) Cable Clamps AN3057-12.

AN/ARC-27A

(1) Connector AN3106A-36-8P, (1) Connector AN3107A-24-28P.

ELECTRICAL AND MECHANICAL CHARACTERISTICS

FREQUENCY RANGE: 225.0 to 399.9 mc.

FREQUENCY CHANNELS: 1750.

CHANNEL SPACING: 100 kc.

PRESET FREQUENCIES

AN/ARC-27: 18.

AN/ARC-27A: 20.

RECEIVER

TYPE: Superheterodyne.

INPUT: 5 uv, 30% modulated 1000 cps.

OUTPUT

MINIMUM: 50 mw.

MAXIMUM: 2 W.

SIGNAL TO NOISE RATIO: 6 db.

TRANSMITTER

OUTPUT: 9 W.

MODULATION: 90 to 95%.

EMISSION AND RECEPTION

AN/ARC-27, AN/ARC-55: A2, A3.

AN/ARC-27A: A3.

GUARD FREQUENCY BAND: 238 to 248 mc.

POWER REQUIREMENTS: 27.5 v dc.

ANTENNA

TYPE: Broad band.

IMPEDANCE: 50 ohms.

MANUFACTURER'S OR CONTRACTOR'S DATA

Collins Radio Co., Cedar Rapids, Iowa.

Contract NOas 56-798f, dated 30 June 1956 (AN/ARC-27).

Contract NOas 55-866f, dated 25 June 1955 (AN/ARC-27A).

Admiral Radio Corp, Chicago, Illinois.

Contract NOas 56-573f, dated 26 June 1956 (AN/ARC-55).

TUBE AND/OR CRYSTAL COMPLEMENT

AN/ARC-27, AN/ARC-27A, AN/ARC-55

(8) 6J4WA (13) 6AG5

(15) 12AT7WA (9) 5749/6BA6W

(4) 5726/6AL5W (1) 6005/6AQ5W

(1) 2C43 (2) 2C39A

(1) 829B (1) 5654/6AK5W

Total Tubes: (55)

AN/ARC-27, AN/ARC-55

(1) 1N198

Total Crystals: (1)

AN/ARC-27A

(1) 1N69

Total Crystals: (1)

REFERENCE DATA AND LITERATURE

AN 16-30 ARC27-2: Technical Manual of Operating Instructions for Radio Sets AN/ARC-27, AN/ARC-27A and AN/ARC-55.

TYPE CLASSIFICATION
DESIGN COGNIZANCE BUAER
PROCUREMENT COGNIZANCE
STOCK NO.

April 1958

RADIO SET

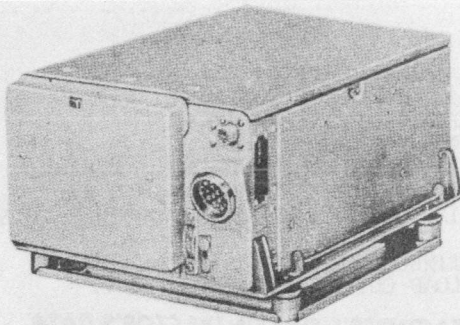
Radio-Transceivers
AN/ARC-27, AN/ARC-27A,
AN/ARC-55

EQUIPMENT SUPPLIED DATA

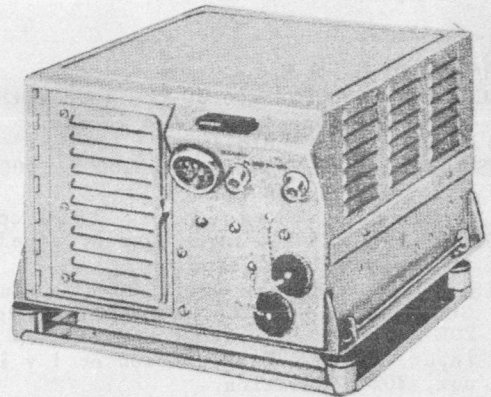
QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
	AN/ARC-27		
1 or 2	Receiver-Transmitter RT-178/ARC-27	11-1/4 X 12-3/8 X 27-7/8	70.5
1 or 2	Radio Set Control C-626/ARC-27	5-1/2 X 6-3/8 X 9-9/16	9.0
1	Radio Set Control C-628/ARC-27 or	2-5/8 X 3-5/8 X 5-3/4	1.0
	Radio Set Control C-628A/ARC-27 or	2-5/8 X 3-5/8 X 5-3/4	1.0
	Radio Set Control C-627/ARC-27 or	3 X 3-1/4 X 8-1/2	1.1
	Radio Set Control C-911/ARC-27 or	3-1/4 X 3-1/4 X 8-1/4	1.2
	Radio Set Control C-868/ARC-27 or	3-3/8 X 5-5/8 X 6	1.5
	Radio Set Control C-905/ARC-27 or	4-1/2 X 5-3/4 X 7-7/8	3.3
	Radio Set Control C-906/ARC-27 or	4-1/2 X 6 X 7-7/8	3.2
	Radio Set Control C-912/ARC-27 or	3-1/4 X 4-1/8 X 12-1/2	2.5
	Radio Set Control C-853/ARC-27 or	5-5/8 X 5-3/4 X 7-3/8	2.6
	Radio Set Control C-913/ARC-27 or	5-5/8 X 6 X 7-3/8	2.6
	Radio Set Control C-914/ARC-27	3-7/8 X 6-5/8 X 10	3.0
1 or 2	Mounting MT-822/ARC-27 or	2-3/8 X 11-1/8 X 19-3/4	4.0
	Mounting MT-822A/ARC-27	2-3/8 X 11-1/8 X 19-3/4	4.0
1 or 2	Mounting MT-821/ARC-27	3/8 X 3/4 X 9-1/6	0.6
1	Mounting MT-4/ARR-2 or	1/4 X 3-1/4 X 5-1/2	0.1
	Mounting MT-4A/ARR-2 or	1/4 X 3-1/4 X 5-1/2	0.3
	Mounting MT-1075/ARC-27	1/4 X 5-3/8 X 6-3/8	0.5
	AN/ARC-27A		
1 or 2	Receiver-Transmitter RT-178/ARC-27	11-1/4 X 12-3/8 X 27-7/8	70.5
1	Radio Set Control C-1025/ARC-27A	3-3/8 X 5-3/4 X 7	4.0
1	Radio Set Control C-1015/ARC-27A or	4-1/16 X 5-3/4 X 7	4.3
	Radio Set Control C-1024/ARC-27A	5-5/8 X 5-3/4 X 7	5.6
1 or 2	Mounting MT-822/ARC-27 or	2-3/8 X 11-1/8 X 19-3/4	4.0
	Mounting MT-822A/ARC-27	2-3/8 X 11-1/8 X 19-3/4	4.0
	AN/ARC-55		
1 or 2	Receiver-Transmitter RT-349/ARC-55	9-5/8 X 11 X 25-1/16	57.5
1	Radio Set Control C-1827/ARC-55	3 X 4-1/4 X 5-3/4	1.75
1 or 2	Mounting MT-1536/ARC-55	4-5/8 X 11-1/8 X 22-15/16	3.5

RADIO SET

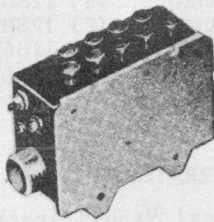
AN/ARC-3



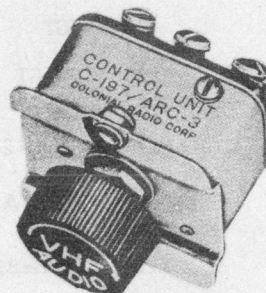
RADIO RECEIVER R-77/ARC-3 ON MOUNTING
BASE MT-237/ARC-3



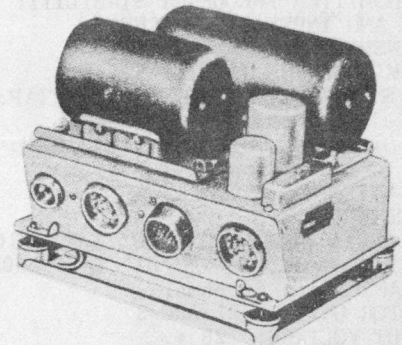
RADIO TRANSMITTER T-67/ARC-3
ON MOUNTING BASE MT-238/ARC-3



CONTROL
BOX C-118/
ARC-3 ON
MOUNTING FT-240-2



CONTROL UNIT
C-197/ARC-3



POWER JUNCTION BOX J-68/ARC-3
WITH DYNAMOTOR UNITS DY-21/ARC-3
AND DY-22/ARC-3 ON MOUNTING BASE
MT-236/ARC-3

Radio Set AN/ARC-3

FUNCTIONAL DESCRIPTION

The AN/ARC-3 is an airborne receiving and transmitting equipment designed to provide plane-to-plane or plane-to-ground communication. Remote operation of the equipment on any of eight frequency channels is accomplished by pushing one of eight channel selector push buttons located on the front panel of the control box. The transmitter is coordinated with the control box and the receiver in such a manner that both will operate on preset frequency channels in combination with other equipment similarly preset.

No field changes in effect at time of preparation (18 May 1956).

RELATION TO OTHER EQUIPMENT

Equipment Required but not Supplied: (8) Transmitter Crystal Units, (8) Receiver Crystal Units, (1) Antenna Mast, (1) Microphone, (1) to (12) Headsets, (12) Plugs, (1) Phantom Transmitter Antenna TS-78/U, (1) Radio Test Set AN/ARM-1, (1) Cap MX-506/ARM-1 Radio Frequency Cable RG-8/U and Connecting Wire AWG no. 20, no. 16 and no. 14 as required.

ELECTRICAL AND MECHANICAL CHARACTERISTICS

TYPE OF RECEPTION AND TRANSMISSION: Voice and MCW.
FREQUENCY RANGE: 100 to 156 megacycles.
POWER OUTPUT

AN/ARC-3

RADIO SET

TRANSMITTER: 8 W.
 RECEIVER: 600 mw into 50 ohm load with "LO" impedance output tap in use.
 AUDIO OUTPUT CHARACTERISTICS
 RESPONSE: +1 or -5 db from 300 to 4000 cps -8 db at 90 cps.
 Reference Frequency: 1000 cps.
 NOISE RESPONSE: 10 mw with min. squelch 100 uw with max. squelch.
 DISTORTION: 8% max with 100 uv inputs 30% modulation, 1000 cps, 150 mw output; 20% max with 1 W output and 100,000 uv input, 10 to 70% modulation or 1 v input, 30% modulation.
 POWER SOURCE: 22 to 32 v DC, 28 v DC normal.
 OPERATING TEMPERATURE RANGE: -55 deg C to +50 deg C.
 TRANSMITTER FREQUENCY STABILITY: ±2%.
 OUTPUT AND INPUT IMPEDANCES
 TRANSMITTER
 MICROPHONE INPUT: 92 ohms.
 SIDETONE OUTPUT ON "LO" TAP: 50 to 600 ohms.
 SIDETONE OUTPUT ON "HI" TAP: 600 to 8000 ohms.
 ANTENNA: 50 ohms.
 RECEIVER
 AUDIO OUTPUT ON "LO" TAP: 30 ohms.
 AUDIO OUTPUT ON "HI" TAP: 600 ohms.
 ANTENNA: 50 ohms.
 DYNAMOTOR UNIT DY-21/ARC-3
 INPUT VOLTAGE: 28 v.
 FULL LOAD INPUT CURRENT: 7 amp.
 NO LOAD INPUT CURRENT: 1 amp.
 FULL LOAD INTERMITTENT OUTPUT VOLTAGE: 410 v.
 INTERMITTENT OUTPUT CURRENT (30 sec on

-30 sec off): 325 ma.
 NO LOAD OUTPUT VOLTAGE: 450 v.
 DYNAMOTOR UNIT DY-22/ARC-3
 INPUT VOLTAGE: 28 v.
 FULL LOAD INPUT CURRENT: 1.8 amp.
 NO LOAD INPUT CURRENT: 0.8 amp.
 FULL LOAD CONTINUOUS OUTPUT VOLTAGE: 210 v.
 CONTINUOUS CURRENT: 125 ma.
 NO LOAD OUTPUT VOLTAGE: 230 v.

MANUFACTURER'S OR CONTRACTOR'S DATA

Colonial Radio Corp., Buffalo, N. Y.
 MIPR800-29025.

TUBE COMPLEMENT

(3) 6V6GT	(1) 6V6GT	(3) 12SG7
(2) 832A	(1) 9002	(2) 12SN7
(2) 12SH7GT	(6) 6AK5	(1) 12H6
(1) 6J5GT	(1) 9001	(1) 12SL7
(2) 6L6GA	(1) 12A6	

Total Tubes: (27)

REFERENCE DATA AND LITERATURE

AN16-30ARC3-3: Technical Manual Instruction for Radio Set AN/ARC-3.

TYPE CLASSIFICATION	
DESIGN COGNIZANCE	USAF
PROCUREMENT COGNIZANCE	
STOCK NO.	

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVER-ALL DIMENSIONS (inches.)	WEIGHT (lbs.)
1	Radio Transmitter T-67/ARC-3	7-1/2 X 12-1/8 X 15-1/4	21
1	Mounting base MT-238/ARC-3	1-5/16 X 11-13/16 X 12-3/4	1.1
1	Radio Receiver R-77/ARC-3	6 X 11 X 14-5/16	20.5
1	Power Junction Box J-68/ARC-3	5-3/16 X 8-3/8 10-11/32	6.7
1	Mounting base MT-237/ARC-3	1-11/32 x 10-23/32 x 11-5/8	1.1
1	Dynamotor Unit DY-21/ARC-3	3-7/16 x 4 x 7-1/2	8.4
1	Dynamotor Unit DY-21/ARC-3	3-7/16 x 4 x 7-3/16	4.8
1	Mounting Base MT-236/ARC-3	7-11/16 x 8-7/8 x 10-3/16	0.8
1	Control Box C-118/ARC-3	2-5/8 x 6 x 6-7/8	2.1
1	Mounting FT-240-A	5/16 x 5-1/2 x 6-3/8	0.3
1	Control Unit C-197/ARC-3	2 x 2 x 2-1/2	0.3

UNCLASSIFIED

August 1957

Radio-Transceivers

RADIO SET

AN/ARC-34

FUNCTIONAL DESCRIPTION

The AN/ARC-34 is a short distance airborne communication equipment designed for A2 and A3 emission in the frequency range of 225 to 399 megacycles. It automatically tunes to any one of twenty preset channels selected from 1750 available channels spaced 100 kilocycles apart. It is capable of operation up to 50,000 feet altitude, and provides guard channel reception.

No field changes in effect at time of preparation (20 February 1957).

RELATION TO OTHER EQUIPMENT

Similar to Radio Sets AN/ARC-33 and AN/ARC-27 series but utilizes crystal saving and miniaturization techniques.

ELECTRICAL AND MECHANICAL CHARACTERISTICS

FREQUENCY RANGE: 225.0 to 399.9 mc.

POWER OUTPUT

TRANSMITTER: 10 W into 50 ohms.

RECEIVER: 750 mw audio into 200 ohms.

CHANNEL DATA

QUANTITY: 1750 spaced 100 kc apart.

PRESET: 20.

EMISSION: A2, A3.

POWER REQUIREMENTS: 27.5 v DC, 25 amps.

MANUFACTURER'S OR CONTRACTOR'S DATA

Radio Corp of America, New York. N.Y.

TUBE AND/OR CRYSTAL COMPLEMENT

No Electron Tubes.

REFERENCE DATA AND LITERATURE

Nomenclature Card for Radio Set AN/ARC-34.

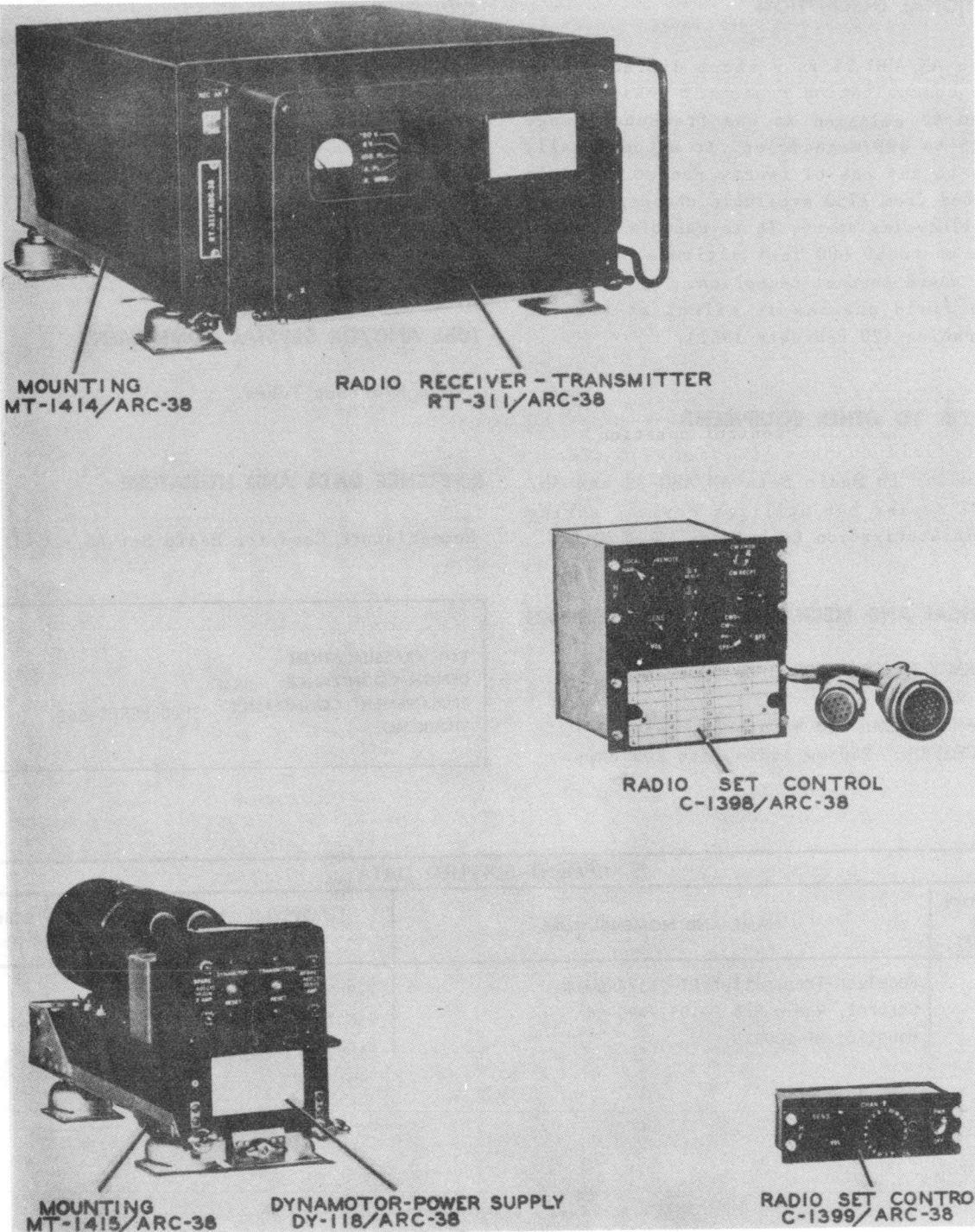
TYPE CLASSIFICATION	
DESIGN COGNIZANCE	USAF
PROCUREMENT COGNIZANCE	SPEC MCREE-562
STOCK NO.	

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIP	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Receiver-Transmitter RT-263/ARC-34	7.9 x 10.65 x 21.5	
1	Control, Radio Set C-1057/ARG-34	4 x 5.25 x 5.75	
1	Mounting MT-1099/U	2.63 x 12.18 x 21.5	4

UNCLASSIFIED

RADIO SET



MOUNTING
MT-1414/ARC-38

RADIO RECEIVER - TRANSMITTER
RT-311/ARC-38

RADIO SET CONTROL
C-1398/ARC-38

MOUNTING
MT-1413/ARC-38

DYNAMOTOR-POWER SUPPLY
DY-118/ARC-38

RADIO SET CONTROL
C-1399/ARC-38

Radio Set AN/ARC-38

AN/ARC-38

RADIO SET

FUNCTIONAL DESCRIPTION

The AN/ARC-38 is designed primarily to provide CW and phone, two-way communication between aircraft in flight, aircraft and ship, and aircraft and shore. It provides both transmitting and receiving facilities for high-frequency communication in the 2 to 25 megacycle range.

Twenty preset channels may be selected by Radio Set Controls C-1398/ARC-38 and C-1399/ARC-38, which afford operation of the equipment convenient to the pilot and radio operator. It may also be operated at the Receiver-Transmitter location if the type of emission and channel have been selected previously. When operated at the pilot's control position, only phone emission on the twenty preset channels is available. Full frequency choice and CW emission are made available at the radio operator's control position.

No field changes in effect at time of preparation (28 January 1957).

RELATION TO OTHER EQUIPMENT

Equipment Required but not Supplied: (1) Antenna Coupler CU-351/AR, (1) Mounting MT-1223/AR, (1) Interphone AN/AIC-4 or Equivalent, (1) Headset H-1/AR or H-4/AR, (1) Microphone NAF-213264-6, ANB-M-1, or equivalent, (1) Throttle Switch NAF-1124-17, (1) Antenna 45 to 100 ft. lg, Cable as Required.

ELECTRICAL AND MECHANICAL CHARACTERISTICS

FREQUENCY RANGE: 2 to 25 mc.

TRANSMITTER DATA

POWER OUTPUT

2.0 to 14.2495 MC: 100 W min.

14.250 to 25 MC: 90 W min.

EMISSION: A1, A3.

MODULATING LEVEL: 95 to 100% when 1000 cps input voltage is 1.0 v.

RECEIVER DATA

OUTPUT: 100 mw min with 5 uv input modulated 30% at 1000 cps.

DISTORTION: 12% max of a 30%, 1000 cps modulated wave with input of 50 to 100000 uv.

AUDIO RESPONSE: ± 3.5 db relative to 1000 cps output for frequency between 300 to 3500 cps.

POWER REQUIREMENTS: 115 v, 400 cps, 174 va, and 27.5 v DC, 26 amps.

MANUFACTURER'S OR CONTRACTOR'S DATA

Collins Radio Co., Cedar Rapids, Ia.
Contract NOas 55-821, dated 29 August 1956.
Contract NOas 52-670, dated 22 December 1951.
Approximate Cost: \$6240.00 with equipment spares.

TUBE AND/OR CRYSTAL COMPLEMENT

- | | |
|---------------------|----------------|
| (1) 6626/OA2WA | (7) 5654/6AK5W |
| (5) 5686 | (4) 5726/6AL5W |
| (12) 5749/6BA6W | (6) 5750/6BE6W |
| (4) 5751 | (5) 5814A |
| (2) 5902 | (5) 6159 |
| Total Tubes: (51) | |
| (1) 1N67A | (1) 1N137A |
| Total Crystals: (2) | |

REFERENCE DATA AND LITERATURE

NAVER 16-30ARC83-501: Technical Manual for Radio Set AN/ARC-38.

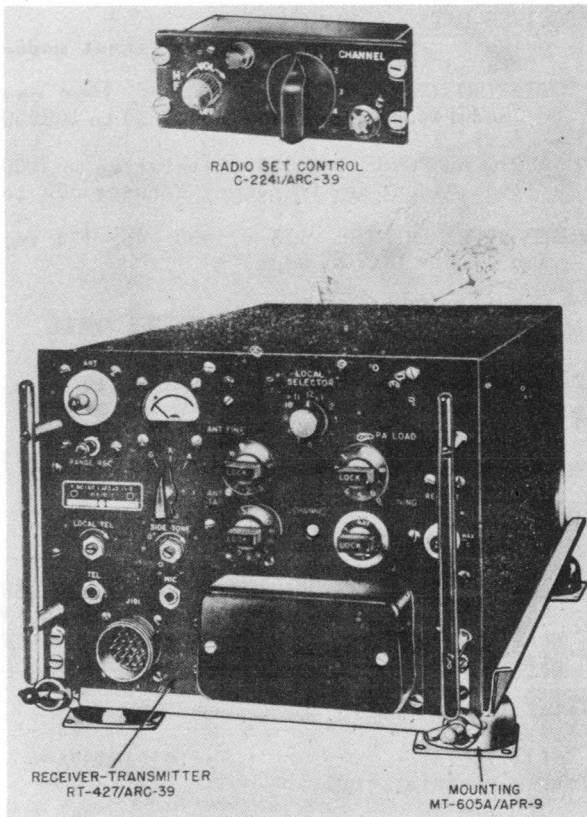
TYPE CLASSIFICATION
DESIGN COGNIZANCE BUAER
PROCUREMENT COGNIZANCE MIL-R-18173 (Aer)
STOCK NO.

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Radio Receiver-Transmitter RT-311/ARC-38	7-13/16 X 15-5/16 X 23-7/16	63.6
1	Mounting MT-1415/ARC-38	7-1/8 X 16-3/8 X 21-7/16	9.4
1	Dynamotor-Power Supply DY-118/ARC-38	4-7/8 X 6-3/4 X 18-5/16	22.0
1	Mounting MT-1414/ARC-38	3-7/8 X 5-7/8 X 15-7/8	4.0
1	Radio Set Control C-1398/ARC-38	5-3/4 X 6 X 7-3/16	7.0
1	Radio Set Control C-1399/ARC-38	1-7/8 X 3-7/8 X 5-3/4	1.25

April 1959

Radio-Transceivers

RADIO SET**AN/ARC-39**

Radio Set AN/ARC-39

Microphone type M-3A/UR, (1) Cable, (1) Connector Plug Electrical type AN3106A-22-14S, (1) Connector Plug Electrical type AN3106A-20-27S, (2) Clamp type AN3057-12, (1) DC Power Source (28 v, 9 amps), (1) Jack Box Type J-502/ARC, (24) Crystal Quartz type CR-18/U.

ELECTRICAL AND MECHANICAL CHARACTERISTICS

TYPE OF EMISSION: A3 type.
 NUMBER OF BANDS: 2 bands.
 NUMBER OF CHANNELS: 12 channels.
 FREQUENCY RANGE: 2.0 to 9.1 mc.
 OPERATING POWER RQMT: 27.5 v dc.

MANUFACTURER'S OR CONTRACTOR'S DATA

Aircraft Radio Corp., Boonton, N.J.
 Contract NOas 53-253-f, dated 29 March 1957.

TUBE AND/OR CRYSTAL COMPLEMENT

(1) OB2WA	(2) 12AT7WA
(3) 5686	(4) 5749-6BA6W
(1) 5750-6BE6W	(4) 5814A
(3) 6159	

Total Tubes: (18)

(2) 1N457 (1) 1N459

Total Crystals: (3)

REFERENCE DATA AND LITERATURE

NAVAER 16-30ARC-39-501: Technical Manual for Radio Set AN/ARC-39.

TYPE CLASSIFICATION
DESIGN COGNIZANCE BUAER
PROCUREMENT COGNIZANCE XEL-243
STOCK NO.
R.D.B. IDENT. NO.

FUNCTIONAL DESCRIPTION

The AN/ARC-39 is primarily designed for helicopter operations at altitudes up to 25,000 feet. It transmits and receives voice modulated signals on any one of twelve (12) preset channels in the frequency range of 2.0 to 9.1 megacycles (mc). Provision is also made for remote operation.

No field changes in effect at time of preparation (23 April 1959).

EQUIPMENT REQUIRED BUT NOT SUPPLIED

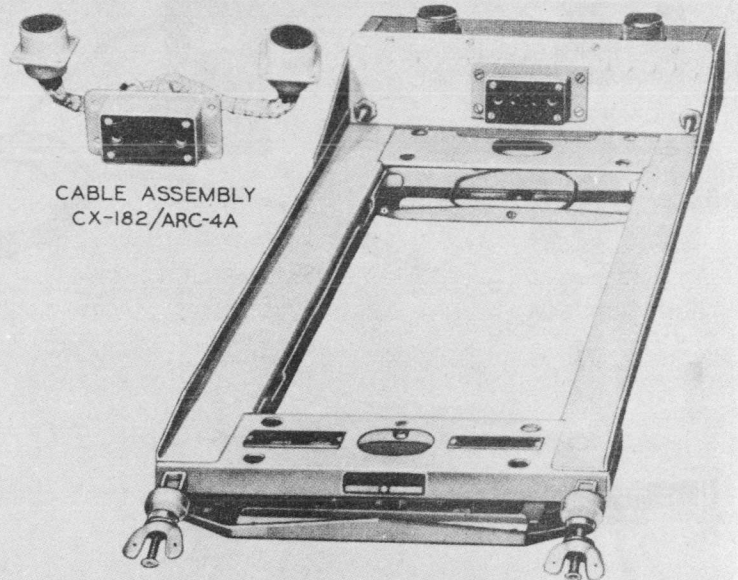
(1) Antenna, (1) Headset type H-1/A1, (1)

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIP	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Receiver Transmitter RT-427/ARC-39		
1	Radio Set Control C-2241/ARC-39	2-1/4 X 3-3/4 X 5-3/4	
1	Mounting MT-605A/APR-9	2-5/8 X 11-1/8 X 22-3/8	

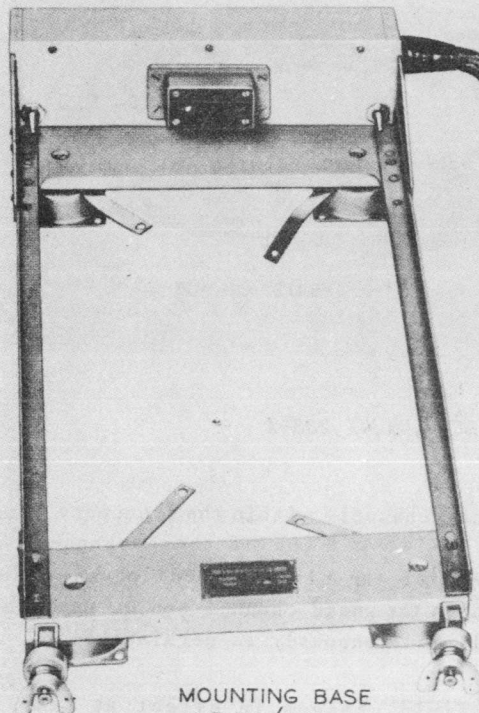


TRANSMITTER-RECEIVER RT-19/ARC-4



CABLE ASSEMBLY
CX-182/ARC-4A

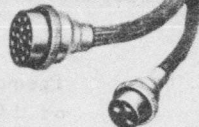
MOUNTING BASE MT-230/ARC
WITH CABLE ASSEMBLY CX-182/ARC-4A



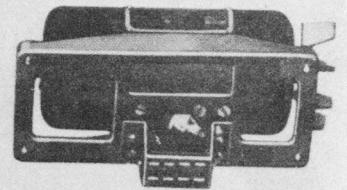
MOUNTING BASE
MT-101/ARC-4

CABLE ASSEMBLY NO.1
(SHIELDING AND WIRE
FURNISHED IN BULK)

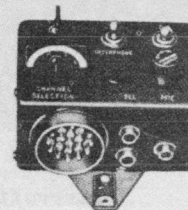
PLUG 6963



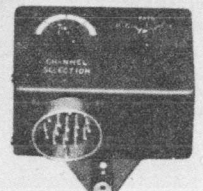
PLUG 6965



DYNAMOTOR DY-9/ARC-1
OR, DY-10/ARC-4X



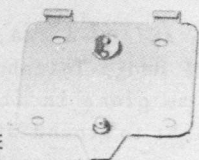
C-51/ARC-4

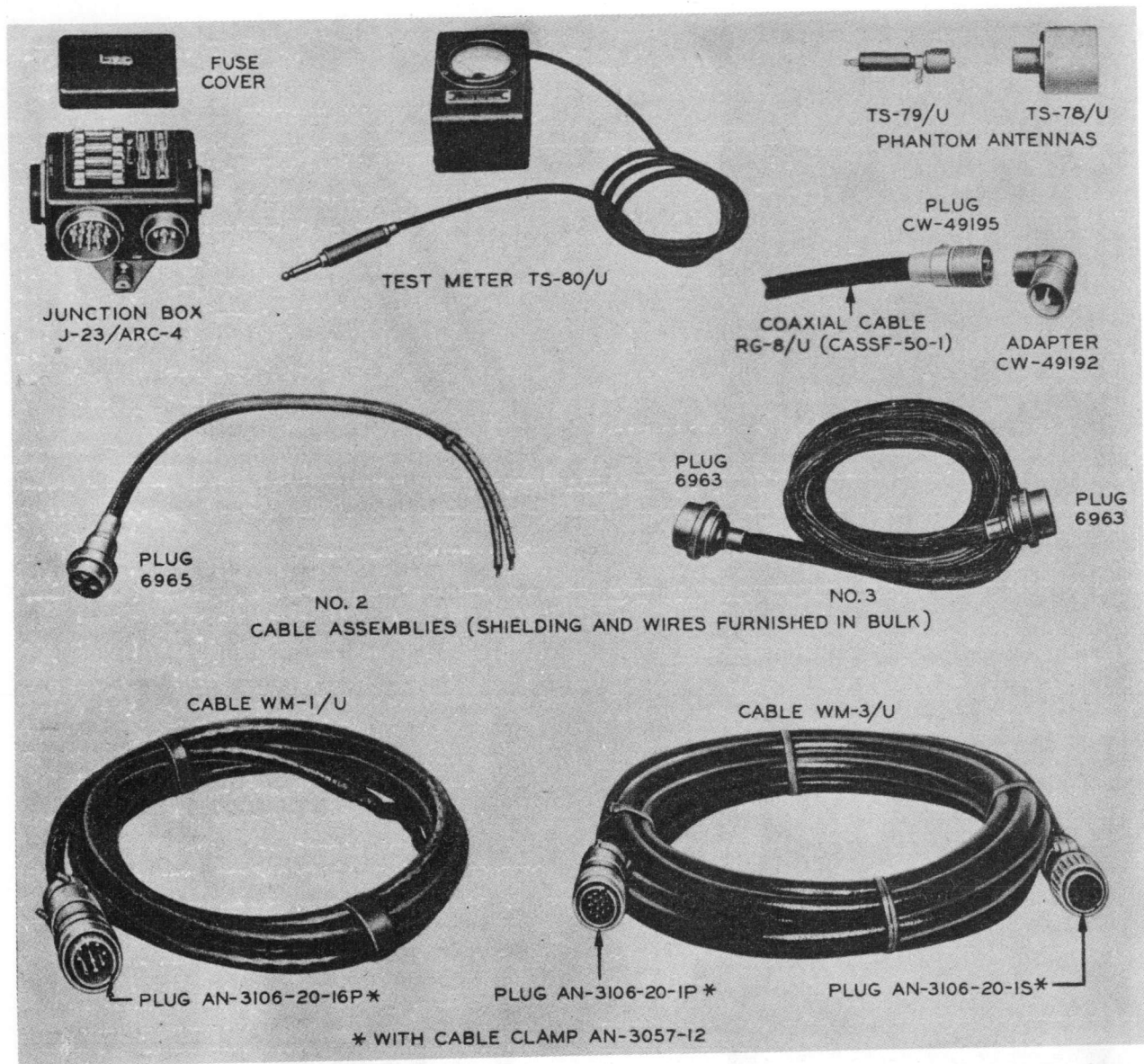


C-52/ARC-4A

CONTROL UNITS

MOUNTING PLATE
MT-80/ARC-5





Aircraft Radio Equipment AN/ARC-4,4A,4X,233-A

FUNCTIONAL DESCRIPTION

The AN/ARC-4, 4A, 4X, 233-A is designed for VHF Radio-Telephone communication between plane to plane in flight and between planes in flight to ground stations. The transmitter and receiver are capable of transmitting and receiving on any of 4 crystal controlled

frequency channels within the frequency range of 140 to 144 mc. One of these channels is reserved for the plane (guard) channel. Reception on the guard channel and on any other channel simultaneously is permissible.

No field changes in effect at time of preparation (14 June 1956).

AIRCRAFT RADIO EQUIPMENT AN/ARC-4,4A,4X,233-A

RELATION TO OTHER EQUIPMENT

Equipment Required but not Supplied: (1) Antenna AT-8/AR, AN-104A, AN-104AX or equivalent, (1) Coaxial Transmission Line to Antenna (1) Microphone NAF 213264-6 (RS-38AO, ANB-M-C1, M-5/UR or equivalent, (1) Headset H-1/AR, H-4/AR or equivalent, (1) Plug PL-55, (1) Power Source 26.5 ±10% v DC for AN/ARC-4 and AN/ARC-4A, (1) Power Source 11 to 15 v DC or 26.5 ±10 v DC for AN/ARC-4X or 233-A.

TUBE AND/OR CRYSTAL COMPLEMENT

(2) 6L6 (4) 6N7
 (2) 6V6GT (2) 12A6GT
 (1) 832A (3) 12SJ7
 (2) 1614 (2) 12SQ7GT
 (2) 6AC7
 Total Tubes: (20)
 (4) Operating Crystals
 Total Crystals: (4)

ELECTRICAL AND MECHANICAL CHARACTERISTICS

FREQUENCY RANGE: 140 to 144 mc.
 TYPE OF EMISSION: A3.
 POWER OUTPUT: 10 W max.
 NUMBER OF CHANNELS: 4.
 CURRENT DRAIN: 11 amp at 28 v.
 POWER REQUIREMENTS: 24 to 28 v DC.

REFERENCE DATA AND LITERATURE

AN08-10-245: Technical Manual for AN/ARC-4 Series (233A) Aircraft Radio Equipment.

MANUFACTURER'S OR CONTRACTOR'S DATA

Western Electric Co., New York, N. Y.

TYPE CLASSIFICATION
 DESIGN COGNIZANCE USAF
 PROCUREMENT COGNIZANCE
 STOCK NO.

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE		OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)	
AN/ARC					
4	4A	4X & 233A*			
1	1	1	Transmitter-Receiver RT-19/ARC-4	7-3/4 X 10-7/16 X 21	33.3
1	1	1	Dynamotor DY-9/ARC-1	3-5/8 X 5-1/4 X 8-1/2	8.0
		1	Dynamotor DY-10/ARC-4X	3-5/8 X 5-1/4 X 8-1/2	8.2
1		1	Junction Box J-23/ARC-4	2-29/32 X 4-3/8 X 4-11/16	0.7
1		1	Control Unit C-52/ARC-4A	2-9/16 X 4-1/8 X 4-5/32	0.6
1	1	1	Mounting Plate for Control Unit MT-80/ARC-5	1/4 X 4-1/8 X 4-5/32	0.09
1		1	Mounting Plate for Junction Box MT-80/ARC-5	1/4 X 4-1/8 X 4-5/32	0.09
1		1	Mounting Base for Transmitter-Receiver MT-101/ARC-4	4-1/8 X 10-1/2 X 22-1/8	4.0
	1		Mounting Base for Transmitter-Receiver MT-230/ARC	3-15/16 X 10-1/2 X 24-3/8	4.0
1		1	Cable Assembly No. 1 Parts Furnished in Bulk: 16-Conductor Shielded Cable 2-Conductor Shielded Cable 18-Contact Plug #6963 3-Contact Plug #6965 Receptacle DP-D32-33S	1-23/32 dia X 2 1-7/32 dia X 2 1-1/2 X 1-3/4 X 3-3/8	0.19 0.1 0.3
1		1	Cable Assembly No. 2 Parts Furnished in Bulk: 2-Conductor Shielded Cable 3-Contact Plug #6965	1-7/32 dia X 2	0.1
1		1	Cable Assembly No. 3 Parts Furnished in Bulk: 16-Conductor Shielded Cable (2) 18-Contact Plugs #6963	1-23/32 dia X 2	0.19
	1		Cable Assembly for Use in Mounting Base MT-230/ARC	1-1/2 X 5 X 7-1/2	0.5

EQUIPMENT SUPPLIED DATA

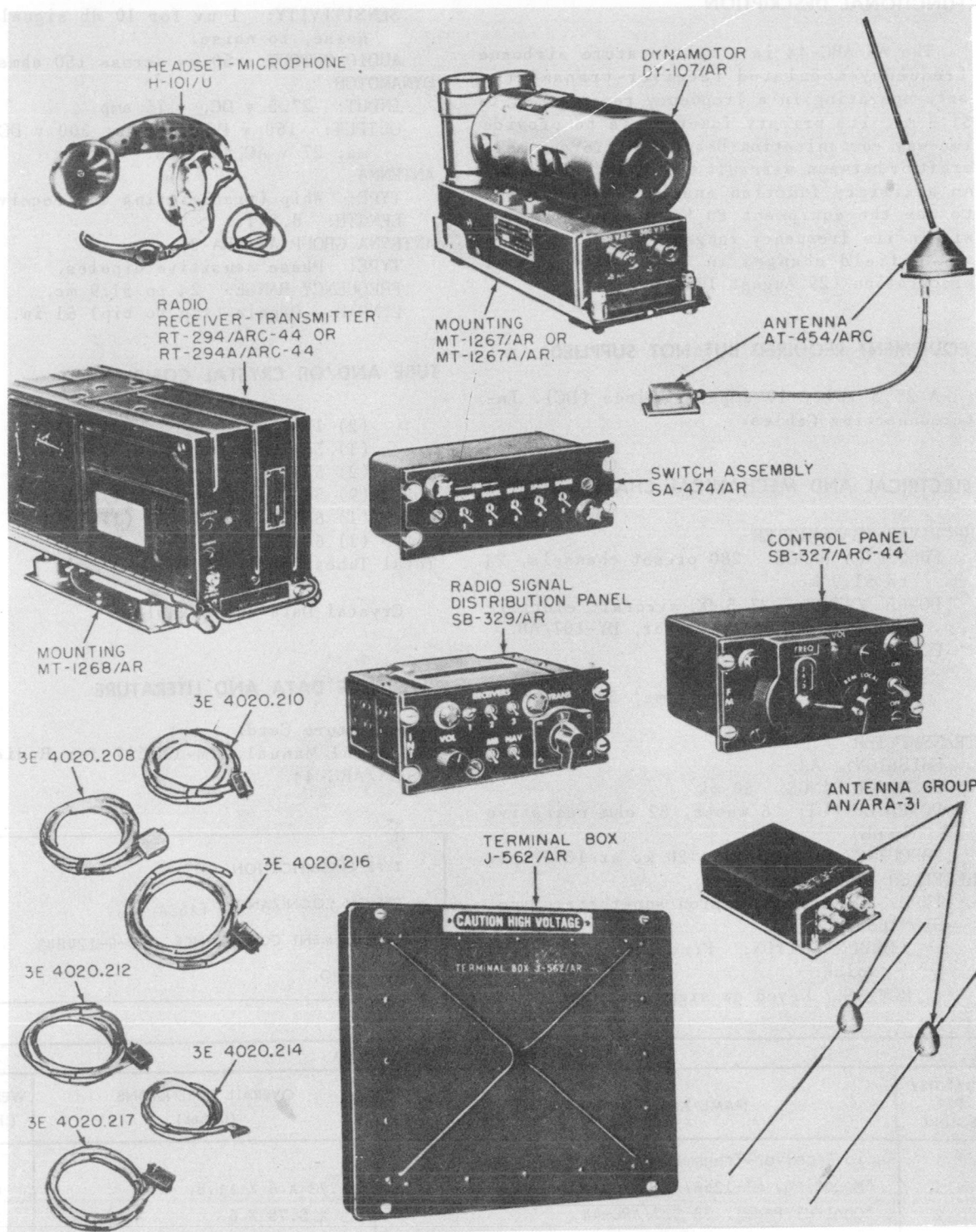
QUANTITY PER EQUIPT		NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
AN/ARC				
4	4A 4X & 233A*			
1		Cable to Control Unit—Parts Furnished in Bulk: 18-Conductor Shielded Cable (or Equiv. Open Wire) 14-Contact Plug AN-3106-20-1S 14-Contact Plug AN-3106-20-1P 2 Cable Clamps AN-3057-12	19/32 dia	
1		Cable to Airplane Junction Box—Parts Furnished in Bulk 8-Conductor Shielded Cable (or Equiv. Open Wire) 9-Contact Plug AN-3106-20-16P Cable Clamp AN-3057-12	1/2 dia	

* Model 233-A identical with Model AN/ARC-4X except commercial designations used for component parts.

WEIGHT (lbs.)	QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)

RADIO SET

AN/ARC-44



Radio Set AN/ARC-44 and Operating Components

April 1959

AN/ARC-44**RADIO SET****FUNCTIONAL DESCRIPTION**

The AN/ARC-44 is a subminiature airborne frequency-modulated receiver-transmitter set, operating in a frequency range of 24 to 51.9 mc. Its primary function is to provide two-way communication between different aircraft or between aircraft and ground stations. An auxiliary function enables the operator to use the equipment to home on any signal within its frequency range.

No field changes in effect at time of preparation (29 August 1958).

EQUIPMENT REQUIRED BUT NOT SUPPLIED

A 27.5 volt, 10 ampere source (DC), Interconnecting Cables.

ELECTRICAL AND MECHANICAL CHARACTERISTICS**RECEIVER TRANSMITTER**

FREQUENCY RANGE: 280 preset channels, 24 to 51.9 mc.

POWER SOURCE: 27.5 DC aircraft electrical system and dynamotor, DY-107/AR.

POWER INPUT

AC: 27 v, 400 cps.

DC: 150 v (B+), 85 ma, 300 v (B+), 125 ma.

TRANSMITTER

EMISSION: A3.

DISTANCE RANGE: 50 mi.

POWER OUTPUT: 6 watts, 52 ohm resistive load.

FREQUENCY DEVIATION: +20 kc at 1000 cps.

RECEIVER

TYPE: Double conversion superheterodyne.

SIGNALS RECEIVED

COMMUNICATION: Frequency modulated voice.

HOMING: Keyed cw signals.

SENSITIVITY: 1 uv for 10 db signal plus noise, to noise.

AUDIO OUTPUT: 50 mw across 150 ohms.

DYNAMOTOR

INPUT: 27.5 v DC, 4.75 amp.

OUTPUT: 150 v DC, 140 ma; 300 v DC, 125 ma; 27 v AC, 400 cps.

ANTENNA

TYPE: Whip (transmitting and receiving).

LENGTH: 8.2 ft.

ANTENNA GROUP AN/ARA-31

TYPE: Phase sensitive dipoles.

FREQUENCY RANGE: 24 to 51.9 mc.

LENGTH: Dipole (tip to tip) 51 in.

TUBE AND/OR CRYSTAL COMPLEMENT

(2) 12AT7WA	(3) 5636
(1) 5647	(11) 5718
(2) 5763	(5) 5829
(9) 5840	(1) 5902
(1) 6BF7W	(1) 6112
(1) 6247	

Total Tubes: (37)

Crystal Data unavailable.

REFERENCE DATA AND LITERATURE

Nomenclature Card.

Technical Manual, TM-11-517 for Radio Set AN/ARC-44.

TYPE CLASSIFICATION

DESIGN COGNIZANCE TASSA

PROCUREMENT COGNIZANCE MIL-R-124843

STOCK NO.

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Radio Receiver-Transmitter, RT-294/ARC-44		
1	*Mounting, MT-1268/AR	1.73 X 6 X 11.8	0.9
2	*Control Panel, SB-327/ARC-44	3 X 5.75 X 6	2.25
1	*Dynamotor, DY-107/AR	3.4 X 5.37 X 9.22	9
1	*Mounting, MT-1267/AR	1.31 X 3.31 X 9.31	0.8

April 1959

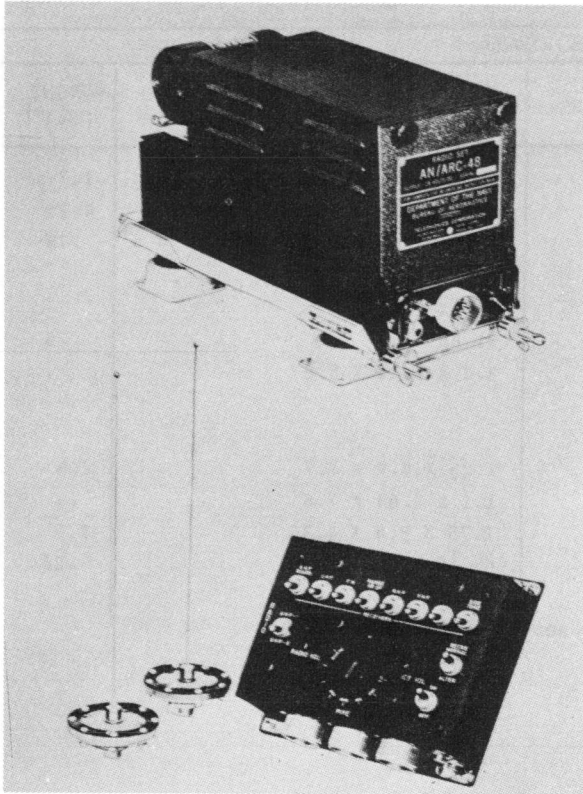
RADIO SET

AN/ARC-44

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
2	*Radio Signal Distribution Panel, SB-329/AR	2.63 X 5.3 X 5.75	1.7
1	*Terminal Box J-562/AR	1.96 X 10.96 X 11.98	4.25
1	*Switch Assembly, SA-474/AR	2.25 X 2.5 X 5.75	.75
	Antenna, AT-454/ARC, Consisting of:		
1	*Antenna Coupler, CU-361/ARC	1.6 X 2 X 3	.7
1	*Antenna Element, AT-454/ARC	91.86	.75
1	*Antenna Base, AB-340/ARC	3.2 X 4.36 X 5.8	
2	Headset-Microphone, H-101/U		
	Antenna Group, AN/ARA-31, Consisting of:		
1	*Keyer, KY-149/AR	2.25 X 4.9 X 7.7	2.4
1	*Mounting, MT-1620/AR	1.1 X 4.64 X 7.8	.4
2	*Impedance Matching Network CU-459/AR	2.75 X 3.4 X 4.36	1.9
4	*Antenna Element, AT-624/AR	24 lg	.26
2	Technical Manual, TM-11-517		

*NOTE: These items are not shipped with radio set and must be ordered separately according to installation.

RADIO SET**AN/ARC-48**

Radio Set AN/ARC-48

FUNCTIONAL DESCRIPTION

The AN/ARC-48 is a small, light weight radio communications set designed for use in all types of helicopter and light weight aircraft to provide two-way communications with properly equipped surface stations and other aircraft. The equipment provides the necessary intercommunications equipment requirements (ICS) for the aircraft in which it is installed and in addition functions as a common control point for other communications equipments installed in the aircraft.

No field changes in effect at time of preparation (28 January 1957).

RELATION TO OTHER EQUIPMENT

Can be used to operate Aircraft receivers 12R11A, 12R19, R-23/ARC-5, R-26/ARC-5, Transmitters 12T11A, 12T13, T-19/ARC-5, T-23/ARC-5 and Communications Sets AN/PRC-8,-9,-10.

Equipment Required but not Supplied: (2) Headset H-1/AR or &-4/AR, (2) Microphone T-17, NAF-213264-6 or ANB-M-C1, (1) Throttle Switch NAF-1127-17 or SA-99A/AR.

ELECTRICAL AND MECHANICAL CHARACTERISTICS

OPERATING FREQUENCIES: Three uhf channels set at 233.8, 234.6 and 236.2 mc respectively. Guard channel preset at 243.0 mc. Spare crystal for 237.8 mc provided

TRANSMITTER POWER OUTPUT: 2 W at 90% modulation.

RECEIVER POWER OUTPUT: 100 milliwatts.

SENSITIVITY: 6 uv.

SELECTIVITY: 6 db signal-plus-noise to noise ratio.

POWER SOURCE REQUIRED: 27.5 v DC at 1.6 amp.

TUBE AND/OR CRYSTAL COMPLEMENT

(6) 5761	(5) 5703WA
(2) 5814	(1) OB2
(4) 6AK6	(1) 5656

Total Tubes: (19)

(4) CR-23/U

Total Crystals: (4)

REFERENCE DATA AND LITERATURE

NAVAER16-30ARC48-501: Technical Manual for Radio Set AN/ARC-48.

TYPE CLASSIFICATION
DESIGN COGNIZANCE BUAER
PROCUREMENT COGNIZANCE
STOCK NO.

August 1957

Radio-Transceivers

AN/ARC-48

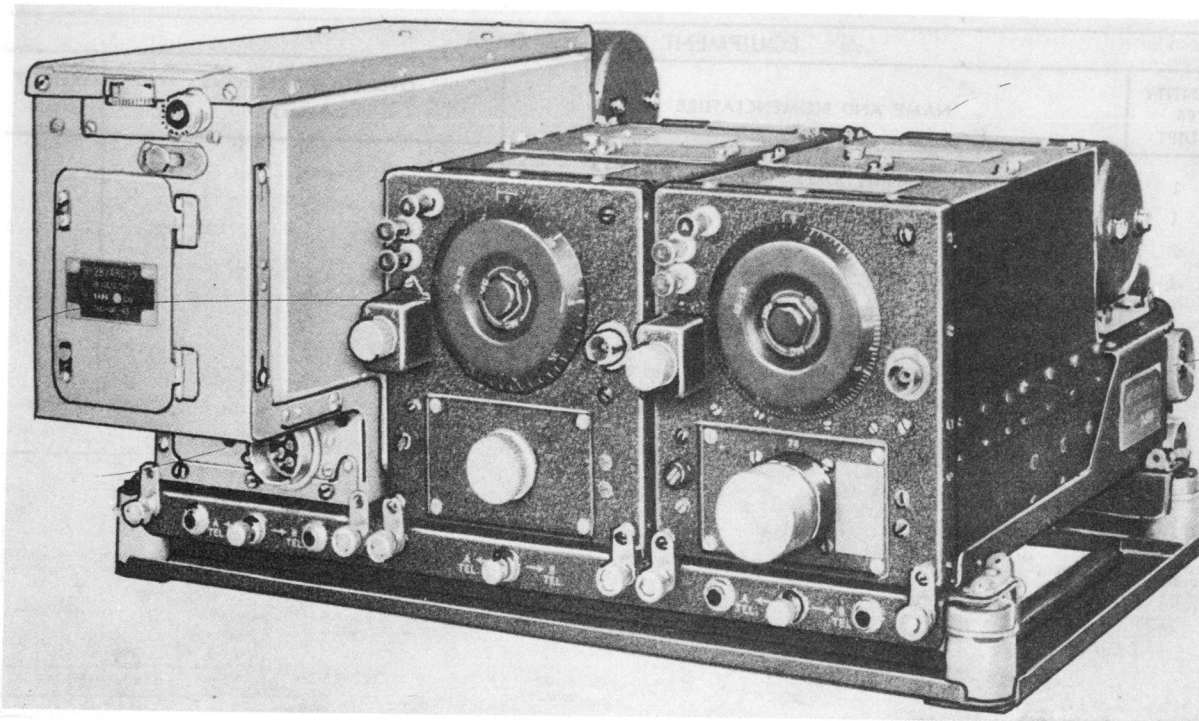
RADIO SET

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Receiver-Transmitter, Radio RT-307/ARC-48		
1	Radio Set Control C-1363/ARC-48		
2	Antenna AT-481/ARC-48		
1	Dynamotor DY-128/ARC-48		
1	Mounting M-1382/ARC-48		
1	Mounting MT-1381/ARC-48		

RADIO EQUIPMENT

AN/ARC-5



Radio Equipment AN/ARC-5

FUNCTIONAL DESCRIPTION

The AN/ARC-5 is a multichannel AM transmitting and receiving group for installation in aircraft. It is a multiple-unit equipment, the number of transmitters and receivers employed (limit of five receivers and eight transmitters) depends upon the type of installation. Frequency coverage in the LF, MF, HF and VHF regions is provided. The radio set is used for general air-to-ground communications, and for reception of instrument landing and navigational signals.

No field changes in effect at time of preparation (21 March 1958).

RELATION TO OTHER EQUIPMENT

-The AN/ARC-5 is a modification of Aircraft Radio Transmitting Equipment ATA and Aircraft Radio Receiving Equipment ARA, of Radio Set SCR-274-N. It is similar to Radio Equipment AN/ARC-5X which requires a different input voltage.

Equipment Required but not Supplied: Antenna Assembly AT-8/AR, AN-104A, and AN-106AX are recommended for use with this equipment.

ELECTRICAL AND MECHANICAL CHARACTERISTICS

TRANSMITTING

FREQUENCY: 0.5 to 9.1 mc and 100 to 156 mc.

EMISSION: A1, A2, A3.

POWER OUTPUT

100 TO 156 MC: 6W on A3.

2.1 TO 3.0 MC: 16W on A1; 7W on A2; 5W on A3.

3 TO 4 MC: 24W on A1; 11W on A2; 6W on A3.

4 TO 9.1 MC: 39W on A1; 20W on A2; 13W on A3.

FEATURES: Ganged master OSC and power amplifier circuits; plate and screen grid modulation permits tuning for maximum voice output; frequency check by magic eye; check of "lock tune" by crystal resonator.

RECEIVING

TYPE: Superheterodyne.

FREQUENCY: 0.19 to 9.1 mc and 100 to 156 mc.

RECEPTION: A1, A2, A3.

SENSITIVITY: 5.0 to 7.0 uv at 30% modulation for 10 mw output.

FEATURES: Automatic or manual sensitivity

NAVY STOCK LIST OF THE ELECTRONICS SUPPLY OFFICE

UNCLASSIFIED
April 1958

Radio-Transceivers

AN/ARC-5

RADIO EQUIPMENT

control, AVC, AGC, remote controlled tuning or "lock tune" voice operation.

ANTENNA

TYPE: Long "fore and aft", inverted "L" or "T".

POWER SOURCE REQUIRED: 24 to 28 v DC aircraft supply.

(4) DC-30
Total Crystals: (4)

REFERENCE DATA AND LITERATURE

AN 08-10-195: Technical Manual for Model AN/ARC-5, Aircraft Radio Equipment, Volume 2 VHF Components.

MANUFACTURER'S OR CONTRACTOR'S DATA

Aircraft Radio Corp, Boonton, N. J.
Contract NXsr-32848, dated 17 June 1943.

TUBE AND/OR CRYSTAL COMPLEMENT

- | | |
|-------------|-----------|
| (1) OD3W | (1) 12SF7 |
| (1) 12SR7 | (4) 717A |
| (1) 12A6 | (3) 12SH7 |
| (2) 1625 | (2) 832A |
| (1) 12J5WGT | (2) 12SK7 |
| (1) 1626 | (1) 12K8 |
| (2) 12SL7GT | (1) 1629 |

Total Tubes: (23)

TYPE CLASSIFICATION
DESIGN COGNIZANCE BUAE
PROCUREMENT COGNIZANCE
STOCK NO.

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
	MAJOR LF-MF-HF COMPONENTS		
*	Adaptor, Audio MX-19/ARC-5	1-5/8 X 2 X 3-1/16	0.2
*	Adaptor, Power MX-20/ARC-5	1-5/8 X 2 X 3-1/16	0.15
*	Adaptor, Remote Control MX-21/ARC-5	1-5/8 X 2 X 3-1/16	0.15
*	Antenna Loading Coil TN-6/ARC-5	4-1/8 X 5-9/16 X 8-3/16	2.0
*	Antenna Relay Unit RE-2/ARC-5	1-3/16 X 5 X 5-5/8	1.9
*	Control Unit (Antenna Loop) C-25/ARC-5	1-3/8 X 2 X 2-1/2	0.1
*	Control Unit (Local) C-24/ARC-5	1-5/8 X 2 X 3-1/16	0.15
*	Control Unit (Rec) Tunable C-26/ARC-5	3 X 3-1/4 X 5-15/32	0.7
*	Control Unit (Rec) Lock Tuner C-27/ARC-5	1-3/16 X 1-3/4 X 4-3/8	0.25
*	Control Unit (Trans) C-29/ARC-5	2-11/16 X 4-1/8 X 4-3/16	0.5
*	Control Unit (Trans) C-30/ARC-5	2-11/16 X 4-3/16 X 4-1/2	0.7
*	Dynamotor (Rec) DY-2A/ARR-2	2-3/4 X 3-1/4 X 4-3/4	3.0
*	Dynamotor (Trans) DY-8/ARC-5	3-3/8 X 4 X 7-5/8	8.2
*	Junction Box J-34/ARC-5	2-1/2 X 4-1/8 X 4-3/16	0.5
*	Junction Box J-28/ARC-5	2-1/2 X 4-1/8 X 4-3/16	0.4
*	Modulator MD-7/ARC-5	6-5/8 X 8-1/4 X 10-1/16	9.1
*	Mounting Base (1 Rec) MT-5/ARR-2	1-9/16 X 6-11/16 X 10-23/32	0.6
*	Mounting Base (2 Rec) MT-62/ARC-5	1-9/16 X 10-23/32 X 11-5/8	0.8
*	Mounting Base (3 Rec) MT-64/ARC-5	1-9/16 X 10-23/32 X 16-9/16	1.0

April 1958

RADIO EQUIPMENT

AN/ARC-5

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
*	Mounting Base (4 Rec) MT-66/ARC-5	1-9/16 X 10-23/32 X 21-1/2	1.1
*	Mounting Base (1 Trans) MT-68/ARC-5	1-11/16 X 7-1/4 X 11-13/16	0.7
*	Mounting Base (2 Trans) MT-70/ARC-5	1-3/4 X 11-13/16 X 12-13/16	0.8
*	Mounting Base (3 Trans) MT-72/ARC-5	1-13/16 X 11-13/16 X 18-1/4	0.9
*	Mounting Base (4 Trans) MT-74/ARC-5	1-7/8 X 11-13/16 X 23-13/16	1.1
*	Mounting Base (Modulator) MT-76/ARC-5	1-1/8 X 8-7/8 X 10-3/16	0.7
*	Mounting Base (Antenna Loading Coil) MT-159/ARC-5	1-3/8 X 5-5/8 X 8-3/4	0.5
*	Mounting Base (Antenna Relay Unit) MT-77/ARC-5	1 X 5 X 5-3/8	0.3
*	Mounting Plate (for C-26/or C-42/ARC-5) MT-4/ARR-2		
*	Mounting Plate (for C-27/, J-16/, J-22/ or J-22A/ARC-5) MT-78/ARC-5	1/4 X 1-3/16 X 4-3/8	0.04
*	Mounting Plate MT-80/ARC-5	1/4 X 4-1/8 X 4-3/16	0.09
*	Rack (1 Rec) MT-7A/ARR-2	4-3/8 X 6 X 13-1/8	1.4
*	Rack (2 Rec) MT-63/ARC-5	3-3/8 X 11 X 13-1/8	2.7
*	Rack (3 Rec) MT-65/ARC-5	4-3/8 X 13-1/8 X 16	4.0
*	Rack (4 Rec) MT-67/ARC-5	4-3/8 X 13-1/8 X 20-7/8	5.0
*	Rack (1 Trans) MT-69/ARC-5	3-7/8 X 6-5/8 X 14-5/8	1.4
*	Rack (2 Trans) MT-71/ARC-5	3-7/8 X 12-1/8 X 14-5/8	2.5
*	Rack (3 Trans) MT-73/ARC-5	3-7/8 X 14-5/8 X 17-5/8	3.3
*	Rack (4 Trans) MT-75/ARC-5	3-7/8 X 14-5/8 X 23-1/8	4.4
*	Receiver R-23/ARC-5	4-13/16 X 5-5/8 X 11-1/2	6.0
*	Receiver R-24/ARC-5	4-13/16 X 5-5/8 X 11-1/2	6.0
*	Receiver R-25/ARC-5	4-13/16 X 5-5/8 X 11-1/2	6.0
*	Receiver R-26/ARC-5	4-13/16 X 5-5/8 X 11-1/2	6.0
*	Receiver R-27/ARC-5	4-13/16 X 5-5/8 X 11-1/2	6.0
*	Transmitter T-15/ARC-5	5-1/4 X 7-1/16 X 12-3/4	9.0
*	Transmitter T-16/ARC-5	5-1/4 X 7-1/16 X 12-3/4	9.0
*	Transmitter T-17/ARC-5	5-1/4 X 7-1/16 X 12-3/4	9.0
*	Transmitter T-18/ARC-5	5-1/4 X 7-1/16 X 12-3/4	9.0
*	Transmitter T-19/ARC-5	5-1/4 X 7-1/16 X 12-3/4	9.0
*	Transmitter T-20/ARC-5	5-1/4 X 7-1/16 X 12-3/4	9.0
*	Transmitter T-21/ARC-5	5-1/4 X 7-1/16 X 12-3/4	9.0
*	Transmitter T-22/ARC-5	5-1/4 X 7-1/16 X 12-3/4	9.0
*	Crystal Freq Generator O-4/ARC-5		
*	Mounting Base MT-77/ARC-5		
*	Test Set (Transmitter)		
*	Test Set (Receiver)		
*	Set of Spare Parts		
NOTE: *Selection and quantities of units depend on type of installation desired and corresponding coverage of units.			
MAJOR VHF COMPONENTS			
*	Control Unit C-42/ARC-5	3 X 3-1/4 X 5-15/32	1.0
*	Mounting Plate MT-4/ARR-2	1/4 X 3-3/4 X 5-15/32	0.12
*	Control Unit C-43/ARC-5	2-3/4 X 5-1/2 X 9-1/2	2.6
*	Control Unit (Trans) C-30/ARC-5	3-3/4 X 4-1/8 X 4-1/2	1.4

AN/ARC-5

RADIO EQUIPMENT

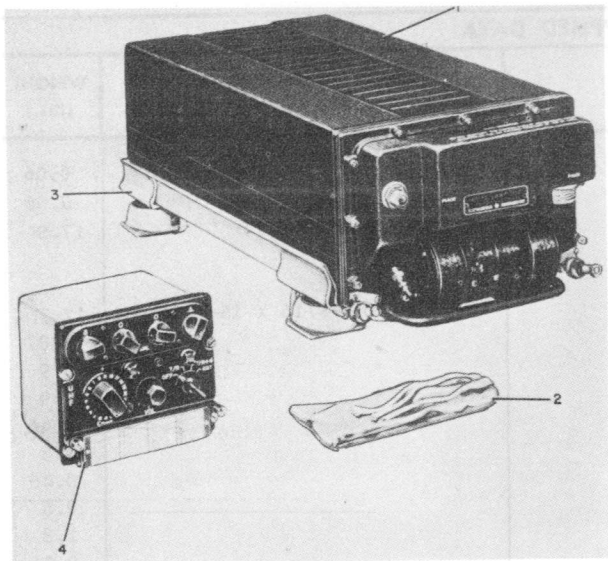
EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
*	Crystal DC-31		0.06
*	Crystal DC-30		0.06
*	Receiver (VHF) w/Dynamotor R-28/ARC-5	4-7/8 X 7-5/32 X 14	17.5
*	Test Equipment 1E-35-A		
*	Test Equipment AN/GRM-1		
*	Transmitter T-23/ARC-5	5-29/64 X 8-9/16 X 15-3/16	12.3
*	Adaptor NT-49192		0.07
*	Auxiliary Control Unit C-48/ARC-5		0.9
*	Auxiliary Control Unit C-39/ARC-5		0.9
*	Jack Box J-16/ARC-5		0.46
*	Junction Box J-17/ARC-5		3.5
*	Jack Box J-22/ARC-5		0.46
*	Jack Box J-22A/ARC-5		0.5
*	Main Control Unit C-38/ARC-5		1.8
*	Mounting Plate MT-98/ARC-5		0.31
*	Mounting Plate MT-85/ARC-5		0.56
*	Mounting Plate MT-78/ARC-5		0.04
*	Mounting Plate MT-80/ARC-5		0.09

NOTE: *Selection and quantities of units depend on type of installation desired and correspond coverage of units.

TWSM RADIO SET

AN/ARC-52



- 1 Radio Receiver-Transmitter RT-332/ARC-52
 2 Tool Kit
 3 Mounting MT-1477/ARC-52
 4 Radio Set Control C-1607/ARC-52

Radio Set AN/ARC-52

FUNCTIONAL DESCRIPTION

The AN/ARC-52 is designed to provide two-way amplitude-modulated radiotelephone communication between aircraft in flight, aircraft and shore, and aircraft and ship. It is capable of transmitting and receiving on any one of 1750 channels, spaced at 100 kilocycle intervals, in the 225.0 to 399.9 megacycle frequency range. A remote control permits the selection of any one of 18 preset channels or the guard channel. It is also possible to monitor the guard channel.

It provides automatic direction-finding operation when used in conjunction with Direction Finder Group AN/ARA-52. Emergency or direction-finding operation is provided by a self-generated tone, and automatic relay operation may be provided by two radio sets connected in tandem between two prime transceiver stations.

No field changes in effect at time of preparation (2 July 1958).

RELATION TO OTHER EQUIPMENT

The AN/ARC-52 is similar to Radio Set AN/

ARC-52X, differing only in that different receiver-transmitters are supplied, and the AN/ARC-52 uses AC power input in addition to DC power.

EQUIPMENT REQUIRED BUT NOT SUPPLIED

(1) Antenna AT-141/ARC-27 or equivalent,
 (1) Headset H-1/AR or equivalent, (1) Carbon Microphone, (1) Dynamic Microphone, Cable and Connectors as Required.

ELECTRICAL AND MECHANICAL CHARACTERISTICS

FREQUENCY RANGE: 225.0 to 399.9 mc.

CHANNELS: 1750.

PRESET CHANNELS: 18 plus guard.

TRANSMITTER DATA

POWER OUTPUT

AVERAGE: 20 W.

MINIMUM: 16 W.

OUTPUT IMPEDANCE: 50 ohms.

MODULATION CAPABILITIES: Amplitude, 65 to 95% with 1000 cps signal at 1 v for carbon microphones and 25 mv for dynamic microphones.

TONE MODULATION: 65 to 95% at 1020 ±100 cps.

INPUT IMPEDANCE

CARBON MICROPHONE: 82 ohms.

DYNAMIC MICROPHONE: 82 ohms balanced to ground

FREQUENCY RESPONSE: 150 to 10000 cps.

SIDETONE: 250 mw into 300 ohm load when carrier is 80% modulated at 1000 cps.

CHANNEL SELECTION TIME: 6 sec max.

TIME DELAY (TRANSMIT-TO-RECEIVE): 30 milliseconds max.

FIDELITY (RESPONSE FLAT WITHIN)

150 CPS: -8 db or lower.

300 CPS: -7 to -3 db.

600 CPS: -2 to +1 db.

1000 CPS: 0 db.

3000 CPS: ±2 db.

6000 CPS: ±2 db.

10000 CPS: -5 to +1 db.

RECEIVER DATA

SENSITIVITY: 5 uv RF input modulated 30% at 1000 cps produces an audio output of 50 mw min, and signal plus noise-to-noise ratio is at least 10 db.

AVC CHARACTERISTICS: 1000 uv signal modulated 30% at 1000 cps produces 250 mw mim audio power output; variation in

April 1959

Radio-Transceivers

AN/ARC-52

RADIO SET

input from 10 to 100000 uv produces audio output of ± 3 db from 250 mw reference.

IMPEDANCE

INPUT: 50 ohms.

OUTPUT: 300 ohms, resistive.

HARMONIC DISTORTION: Less than 10%.

RESPONSE (AF): 300 to 4000 cps.

AUXILIARY AUDIO OUTPUT: 0.25 v with 1000 uv input modulated 30% at 1000 cps.

AUXILIARY AUDIO OUTPUT IMPEDANCE: 20000 ohms, resistive.

POWER REQUIREMENTS: 115 v, 400 cps, 3 ph, 390 va and 27.5 v DC, 7.5 amps.

(12) 6021

(1) 6442

Total Tubes: (42)

(1) 1N198

(7) 1N457

(9) 1N540

(3) HD6616

(1) SV-15

(15) CR-61/U

(11) CR-18/U

(11) Quartz Type

Total Crystals: (58)

MANUFACTURER'S OR CONTRACTOR'S DATA

Collins Radio Co., Cedar Rapids, Iowa.
Contract NOas-57-478-d, dated 4 June 1957.

Approximate Cost: \$12350.00 with equipment spares.

REFERENCE DATA AND LITERATURE

NAVAER16-30ARC52-501: Technical Manual for Radio Set AN/ARC-52.

TYPE CLASSIFICATION

DESIGN COGNIZANCE BUAER

PROCUREMENT COGNIZANCE

STOCK NO.

R.D.B. IDENT. NO.

TUBE AND/OR CRYSTAL COMPLEMENT

(2) 2E26	(1) 4X150D
(3) 5654/6AK5W	(14) 5840
(2) 5902	(7) 6J4WA

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Radio Receiver-Transmitter RT-332/ARC-52	7-3/16 X 10-1/8 X 21	
1	Radio Set Control, C-1607/ARC-52	4-7/8 X 5-1/2 X 5-3/4	
1	Mounting MT-1477/ARC-52	2-13/16 X 11-1/4 X 20-3/4	
1	Tool kit		

30 August 1962

Cog Service: USN FSN:

Functional Class: RADIO SET AN/ARC-52X

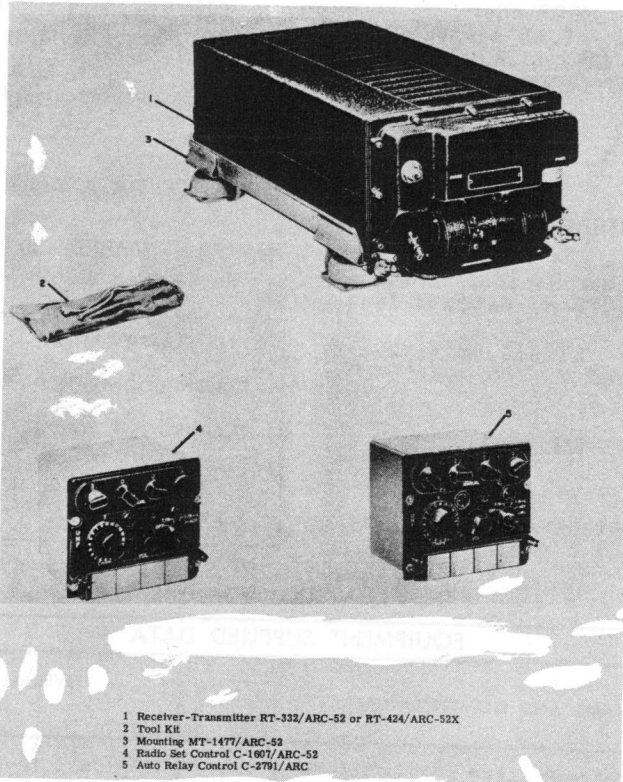
USA

USN

USAF

TYPE CLASS: Used by Used by

MANUFACTURER'S NAME/CODE NUMBER: Collins Radio Co., (13499).



Radio Set AN/ARC-52X

FUNCTIONAL DESCRIPTION:

The Radio Set AN/ARC-52X is designed to provide two-way amplitude-modulation (AM) radio telephone communication (A3) between aircraft in flight, aircraft and shore, and aircraft and ship. It is capable of transmitting and receiving on any one of 1,750 frequency channels, spaced at 100 kc intervals, in the band of 225.0 to 399.9 mc.

No field changes in effect at time of preparation (15 January 1962).

TECHNICAL CHARACTERISTICS:

RECEIVER DATA

TYPE OF EMISSION: A9 type & A3 type.

NUMBER OF CHANNELS: 1750.

FREQUENCY RANGE: 225.0 to 399.9 mc.

INPUT IMPEDANCE: 50 ohms.

AN/ARC-52X RADIO SET

OUTPUT IMPEDANCE: 300 ohms, resistive.

HARMONIC DISTORTION: Less than 10%.

AUDIO FREQUENCY RESPONSE: 300 to 400 cps.

NOISE LIMITING: Instantaneous peak limiting.

AUXILIARY AUDIO OUTPUT: 0.25 v with a 1000 microvolt input modulated 30% at 1000 cps.

AUXILIARY AUDIO OUTPUT IMPEDANCE: 20000 ohms resistive.

TRANSMITTER DATA

TYPE OF EMISSION: A9 type.

NUMBER OF CHANNELS: 1750.

FREQUENCY RANGE: 225.0 to 399.9 mc.

POWER OUTPUT: 20 W average, 16 W minimum.

OUTPUT IMPEDANCE: 50 ohms.

TONE MODULATION: 80% to 95% w/a 1000 cps signal at 1 v for carbon microphones & 25 milli-volts for dynamic microphone.

INPUT IMPEDANCE: 82 ohms.

FREQUENCY RESPONSE: 150 to 10000 cps.

CHANNEL SELECTION TIME: 6.0 seconds max.

TRANSMIT TO RECEIVE TIME: 300 milliseconds, max.

OPERATING FREQUENCY RANGE: 225.0 to 399.9 mc.

TOTAL NUMBER OF CHANNELS: 1750.

NUMBER OF PRESET CHANNELS: 18 with 1 guard channel.

CHANNEL SPACING: 100 kc.

OPERATING POWER RQMT: 27.5 v dc.

RELATION TO OTHER EQUIPMENT:

The AN/ARC-52X is similar to, but differs from AN/ARC-52 in that ac power supply removed and replaced by a dc power supply, uses a dc external blower instead of an ac external blower, no ac input voltage; C-1067/ARC-52 is a U/W item. RT-424/ARC-52X used in place of RT-332/ARC-52.

EQUIPMENT REQUIRED BUT NOT SUPPLIED:

(1) DC Primary Power Supply (27.5 v at 4.5 amps approx); (1) AC Primary Power Supply (115 v ac, 400 cps, 3 ph, 400 va); (1) Antenna AT-141/ARC-27 or equivalent; (1) Headset H-1/AR or equivalent (Helmet type); (1) Microphone NAF21364-6 or equivalent (Hand Held type); (1) Microphone ANB-MC1 or equivalent (Hand Held type); (1) RF Cable RG-8/U; (1) Connector UG-21B/U; (1) Connector Amphenol 165-44 or equivalent; (1) Connector Cannon Type K06-21-5/8 or equivalent; (1) Connector AN3108-22-14S; (1) Clamp AN3057-12.

MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (INCHES)	WEIGHT (LBS)
1	Radio Set, AN/ARC-52X consists of:			
1	Receiver-Transmitter RT-424/ARC-52X		7-3/16 x 10-1/8 x 21	
1	Mounting MT-1477/ARC-52			
1	Control, Radio Set C-1607/ARC-52		4-7/8 x 5-1/8 x 5-3/4	

REFERENCE DATA AND LITERATURE:

NAVWEPS 16-30 ARC52-501: Technical Manual for Radio Sets AN/ARC-52 and AN/ARC-52X and Auto Relay Control C-2791/ARC.

TUBE, CRYSTAL AND/OR SEMI-CONDUCTOR DATA:

TUBES: (3) HD6616 (1) USN7554 (2) 2E26 (1) 5644 (1) 5654-6AK5W (14) 5840
 (2) 5902 (3) 6J4WA (12) 6021 (1) 6205 (1) 6442-Z1911 (6) 7077

CRYSTALS: None used.

SEMI-CONDUCTORS: (1) 1N198 (7) 1N457 (1) 1N767

SHIPPING DATA

PKGS	VOLUME (CU FT)	WEIGHT (LBS)
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PROCUREMENT DATA

PROCURING SERVICE: USN

DESIGN COG: BuWeps

SPEC &/OR DWG: MIL-R-18401(Aer)

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX. UNIT COST
Collins Radio Company	Cedar Rapids, Iowa	NOas 56-1118	

RADIO SET

FUNCTIONAL DESCRIPTION

The AN/ARC-58 is designed as a long range airborne communications set, operating over the frequency range of 2.0 to 30 megacycles (MC). It automatically tunes and loads into a fixed wire or flush mounted aircraft antenna. Operated and controlled from a remote position. It is designed to operate under all military environmental conditions and up to an altitude of 75,000 feet. It can be operated as a single side band, upper or lower, both side bands or straight Amplitude Modulation (AM).

No field changes in effect at time of preparation (21 January 1960).

ELECTRICAL AND MECHANICAL CHARACTERISTICS

TYPE OF RECEPTION: AM, SSB, FSK, CW.
NUMBER OF BANDS: 4 bands.
IMPEDANCE: 50 ohms.
OPERATING FREQUENCY RANGE: 2.0 to 30 mc.
OPERATING POWER RQMT: 115 V, 380 to 420 cycles, 3 ph; 27.5 v DC.

MANUFACTURER'S OR CONTRACTOR'S DATA

Collins Radio Co., Cedar Rapids, Iowa.
Contract AF30(635)-4504.

TUBE AND/OR CRYSTAL COMPLEMENT

Electron Tube and Crystal Data not available.

REFERENCE DATA AND LITERATURE

NAVSHIPS 93400: Preliminary Data Form
NAVSHIPS 4477 (Rev. 11-56) for Radio Set
AN/ARC-58.

TYPE CLASSIFICATION (NAVY)
DESIGN COGNIZANCE BUAER
PROCUREMENT COGNIZANCE RADC-1800
STOCK NO.
R.D.B. IDENT. NO.

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Radio Set Control C-1939/ARC-58	5-1/4 X 5-3/4 X 7-9/16	5.1
1	Radio Receiver R-761/ARC-58	9-5/16 X 10-1/4 X 25-1/32	52.75
1	Mounting MT-1699/U		
1	Radio Transmitter T-605/ARC-58	9-1/4 X 10-1/4 X 25-3/8	53.8
1	Mounting MT-1698/U		
1	Antenna Coupler Control C-1940/ARC-58	4-5/8 X 9-15/16 X 16-23/32	14.66
1	Mounting MT-1700/U		
1	Antenna Coupler CU-523/ARC-58	7 X 9-31/64 X 25-3/32	23.375
1	Mounting MT-1728/U		
1	Vane Axial Fan HD-277/U	5-5/16 X 7-3/16 X 9-1/16	4.5

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Radio-Transceivers

RADIO SET**AN/ARC-72****FUNCTIONAL DESCRIPTION**

The AN/ARC-72 is a long-range communications set operating over the frequency range of 2.0 to 30.0 megacycles (MC). Automatically tunes and loads into a fixed wire aircraft antenna. It is operated and controlled from a remote position. It operates at full power up to 40,000 feet.

No field changes in effect at time of preparation (12 September 1960).

RELATION TO OTHER EQUIPMENT

The AN/ARC-72 is similar to, but not interchangeable with, Collins Radio Set Model 618S-1. This set provides SSB mode of operation.

ELECTRICAL AND MECHANICAL CHARACTERISTICS

TYPE OF INSTALLATION: Aircraft.
 TYPE OF EMISSION: A3 type.
 TYPE OF ANTENNA: Monopole-Vertical.
 TYPE OF FREQUENCY CONTROL: Crystal frequency.
 TRANSMITTER TUNING RANGE: 116 to 149.95 mc.

RECEIVER TUNING RANGE: 108 to 151.95 mc.
 OPERATING FREQUENCY RANGE: 2.0 to 30 mc in 1 kc increments.

OPERATING POWER RQMT: 27.5 v dc, 30 amps;
 110 v ac, 300 to 1000 cps.

TUBE AND/OR CRYSTAL COMPLEMENT

Electron Tube and/or Crystal data not available.

REFERENCE DATA AND LITERATURE

NAVSHIPS 93400: Preliminary Data Form for Radio Set AN/ARC-72.

TYPE CLASSIFICATION (NAVY)
 DESIGN COGNIZANCE TASSA
 PROCUREMENT COGNIZANCE EXHIBIT WCLN-58-20
 STOCK NO.
 R.D.B. IDENT. NO.

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Radio Set AN/ARC-72 consisting of:		
1	Receiver-Transmitter, Radio RT-474/ARC-72	7-51/64 x 15-5/16 x 23-1/16	50
1	Power Supply PP-2150/ARC-72	4-7/8 x 6-3/4 x 18-1/16	15
1	Control Radio Set C-2687/ARC-72	2-5/8 x 4-7/8 x 5-3/4	2.5
1	Mounting Collins Model 350S-3		
1	Mounting Collins Model 350T-3		
1	Automatic Tuning Unit Collins Model 1801-3		

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RADIO SET**AN/ARC-9****FUNCTIONAL DESCRIPTION**

The AN/ARC-9 is designed as an airborne, low and high frequency communication system for air-to-air and air-to-ground communication.

No field changes in effect at time of preparation (26 August 1960).

ELECTRICAL AND MECHANICAL CHARACTERISTICS

TYPE OF EMISSION: A3 type.

TYPE OF FREQUENCY CONTROL: Crystal frequency control.

NUMBER OF CHANNELS: 10 channels.

FREQUENCY RANGE: 2500 to 13000 kc.

OPERATING POWER RQMT: 24 v DC.

MANUFACTURER'S OR CONTRACTOR'S DATA

Bendix Aviation Corp., Baltimore, Md.
Order No. 1028-DAY-44.

TUBE AND/OR CRYSTAL COMPLEMENT

Electron Tube and/or Crystal data not available.

REFERENCE DATA AND LITERATURE

Nomenclature Card for Radio Set AN/ARC-9.

TYPE CLASSIFICATION (NAVY)
DESIGN COGNIZANCE USAF
PROCUREMENT COGNIZANCE
STOCK NO.
R.D.B. IDENT. NO.

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Radio Set AN/ARC-9 consisting of:		83
1	Communication Unit Bendix Type RTA-1B		
1	Microphone T-17		
2	Control Unit Bendix Type MS-440		
1	Jack JK-34-A	3/4 x 1 x 1-1/4	
3	Mounting Base Bendix Type MT-68E		
4	Junction Box Bendix MS-14-D or equals		