

CONFIDENTIAL

11 September 1967

COMMUNICATION SET, RADIO AN/MRC-99(XN-1)

Cog Service: USN FSN:

Functional Class:

USA

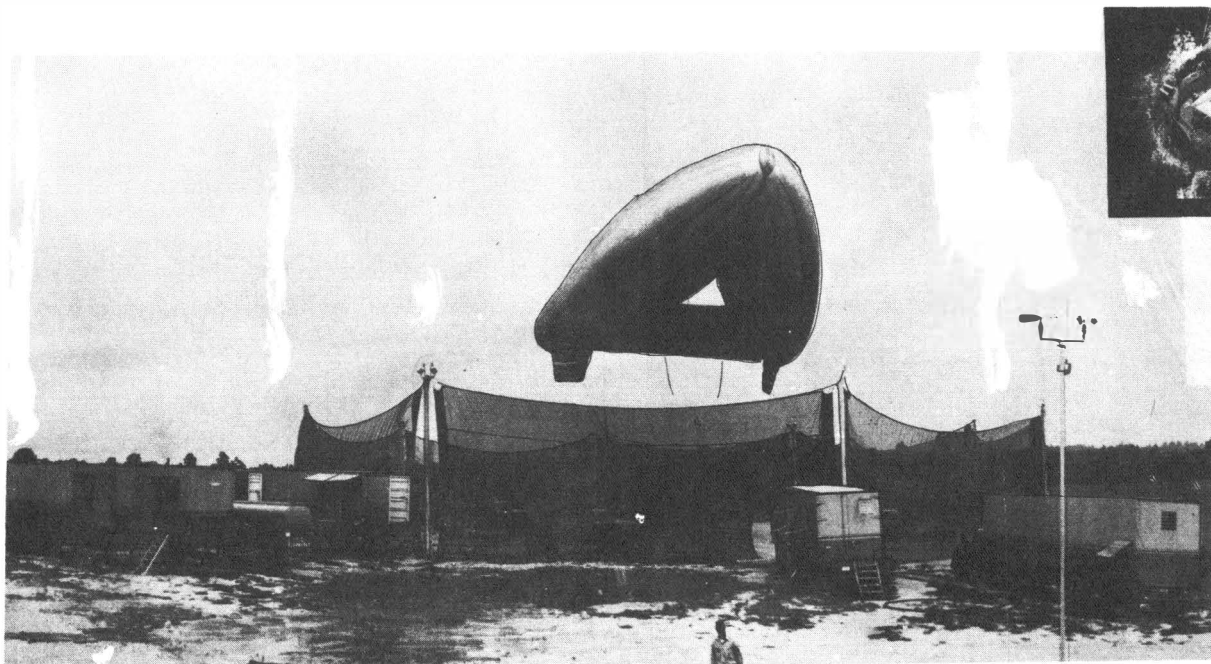
USN

USAF

TYPE CLASS:

Used by

MANUFACTURER'S NAME/CODE NUMBER: General Electric Co., (03538).



COMMUNICATION SET, RADIO AN/MRC-99(XN-1)

1.5 AN/MRC-99(XN-1): 1

CONFIDENTIAL

COMMUNICATION SET, RADIO AN/MRC-99(XN-1)

FUNCTIONAL DESCRIPTION:

Communication Set, Radio AN/MRC-99(XN-1) is a broadband transmitting communication system having transportable capabilities that only a mobile installation offers and serves as an emergency long range communications facility for short term use. The transmitting system operates within the frequency range of 15 to 30 kilocycles. A radiated power of 100 kilowatts or greater is available between 20 and 30 kilocycles with a somewhat reduced power handling capability from 15 to 20 kilocycles. The most significant difference between this transportable very low frequency system and any other very low frequency system is the unique antenna configuration. The antenna is a long-line monopole, up to 10,000 ft in length, that is vertically suspended by a V-shaped balloon. Because of this design feature, the system offers relatively high antenna efficiency and broadband transmission capability. The land-based system is contained in a fleet of 12 semitrailers and support vehicles and is capable of traveling over class 1 roads, gravel roads, and improved terrain to a suitable location for system set-up, launch, and transmit. A reasonably fast set-up time of four to six hours is possible with a trained and experienced crew, assuming relatively level and clear terrain and suitable weather conditions. When the system arrives at a proposed site, an octagonal-shaped launch/retrieve area, approximately 65 feet on a side, is laid out using a triangular survey template. Launch site communication and exterior lighting equipment are installed, and a radial wire ground system is constructed outward from the periphery of the launch area. Operating and support trailers are then positioned and intercabled.

No field changes in effect at time of preparation (12 April 1967).

RELATION TO OTHER EQUIPMENT: None.

EQUIPMENT REQUIRED BUT NOT SUPPLIED: None.

TECHNICAL CHARACTERISTICS:

PRIMARY POWER REQUIREMENTS: 440 v ac, 3 ph, 60 cps at 400 kva.

SECONDARY POWER REQUIREMENTS: 208 v ac, 3 ph, 60 cps, 45 kva; 14,000 v dc, 15 amp.

TYPE OF AMPLIFIER: Class AB₁ linear.

MODULATION: Capable of FSK, PSK, or CW operation from the test exciter. Modulation inputs from TTY lines, and hand keyed lines, and for introduction of 1000 wpm data locally are provided; also accepts any type of low-level excitation from an external exciter, or a suitable Frequency-Synthesizer-Modulator.

POWER AMPLIFIER PLATE EFFICIENCY: 60% nom.

ANTENNA

TYPE: Monopole.

DIRECTIONAL CHARACTERISTICS: Omni-directional.

BANDWIDTH: 500 to 2500 kc.

WAVELENGTH: Less than one-quarter wavelength.

VOLTAGE RATING: 50 kv-rms max base voltage.

FREQUENCY ASSIGNMENTS

VLF TEST FREQUENCIES: 15 designated frequencies, in 15 kc to 29 kc freq range.

OTHER ASSIGNED TEST FREQUENCIES:

TELEMETRY (AIR TO GROUND LINK): 217.5 mc.

DESTRUCT (GROUND TO AIR LINK): 252.4 mc.

COMMUNICATION SET, RADIO AN/MRC-99(XN-1)

MAJOR COMPONENTS

QTY	ITEM	DIMENSIONS (INCHES)	WEIGHT (LBS)
1	Communication Set, Radio AN/MRC-99(XN-1) includes:		
2	Main Winch Trailer		
1	Cargo Trailer		
1	Transmitter/Control Trailer		
1	Antenna Tuning and Matching Trailer		
1	Primary Power Trailer		
4	Helium Trailer		
1	Headquarters and Maintenance Trailer		
1	Fuel Truck		
1	Transmitter/Control Trailer Tractor		
1	Antenna Tuning and Matching Trailer Tractor		
1	Primary Power Trailer Tractor		
1	Auxiliary Winch Tractor		
1	Headquarters and Maintenance Trailer Tractor		
1	Utility Vehicle		
1	LTA Vehicle		
1	Ground Cloth Equipment		
1	Windscreen Equipment		
1	Grounding System		

REFERENCE DATA AND LITERATURE:

NAVSHIPS 0967-156-5010: Experimental Equipment Manual for Transportable Very Low Frequency Communications System AN/MRC-99(XN-1)(U).

SHIPPING DATA

PKGS VOLUME (CU FT) WEIGHT (LBS)

PROCUREMENT DATA

PROCURING SERVICE: USN DESIGN COG: USN, NavShips
SPEC &/OR DWG:

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX. UNIT COST
General Electric Co.	Syracuse, N. Y.	N0bsr 85505	