



NOTE: ONLY THE FIRST 3 AND LAST ELEMENT OF
THE 18 ELEMENT IN-LINE ARRAY ARE SHOWN

Antenna Group AN/FPA-13

DESCRIPTION OF COAST GUARD ELECTRONIC EQUIPMENT

FUNCTIONAL DESCRIPTION:

Antenna Group AN/FPA-13 provides all of the components, except for the ground system, necessary for installing a Loran-A comb receiving antenna array at a Loran-A Station. The comb antenna array is an in-line end-fire array of 18 vertical elements spaced 60 feet apart, connected and phased by means of a non-resonant transmission line. The array is designed for an individual frequency of either 1850 kc, 1900 kc, or 1950 kc. The frequency to which the array is tuned is indicated by a nameplate on the top cover of the antenna coupling units. The comb receiving antenna array is used at Loran-A Stations to improve the signal-to-noise ratio of the received signal, thus improving the synchronization between master and slave stations.

RELATION TO OTHER EQUIPMENT:

The AN/FPA-13 Antenna Group is used for the reception of signals at Loran "A" stations in association with the AN/FPA-2 Switching Group or similar.

EQUIPMENT REQUIRED BUT NOT SUPPLIED:

RG-148/U cable is required for the R. F. transmission line connecting the antenna coupler of the first antenna element to the signal building.

A ground system should be installed as outlined in the technical manual for Antenna Group AN/FPA-13.

ELECTRICAL AND MECHANICAL CHARACTERISTICS:

Type of reception—Loran-A signals.

Frequency Range—Fixed tuned—1850 kc, 1900 kc, or 1950 kc. Tuned frequency of array determined by tuned frequency of antenna couplers used.

Output Impedance—52 ohms (termination for coaxial cable RG-148/U).

Beam Width (Single Array)—Approximately 45° horizontal, 20° vertical.

Where and How Installed—At Loran-A Stations at a site which will allow the line of the array to be oriented on the Great Circle Path between paired stations.

Area Required—a. 125 feet wide by 1120 feet long.

b. If this area is not available, it may be installed as a dual 9-element array by means of a Dual Array Kit Stock No. CG-5985-L01-4176. Area required 450 feet wide by 580 feet long.

MANUFACTURER'S OR CONTRACTOR'S DATA:

Manufactured by Monitor Electronics Co., 89 Walnut Street, Montclair, New Jersey.

Drawing Number 232D151

Contract Tcg-41384 (CG-47,917-A) dated 26 February 1960.

Purchase Description EEE-6-6C

REFERENCE DATA AND LITERATURE:

Technical Manual for Antenna Group AN/FPA-13 — Publication No. CG-273-69.

SHIPPING DATA:

Box No.	Contents	Volume (Cu. Ft.)	Length x Width x Height (Inches)			Weight Packed (Pounds)
1 of 6	Interconnecting Cables	20.2	44	18	44	775
2 of 6	Guy Anchors, Base Plates	14.7	36	32	22	252
3 of 6	Misc. Hardware	6.1	31½	24¾	13½	116
4 of 6	Upper Mast Sections P/O AT-1018/FPA-13	56	22'5"	20½	17½	600
5 of 6	Lower Mast Sections AT-1018/FPA-13 1 Upper Mast Section Epoxy Mixing Kit	58	24'5"	18½	18½	1000
6 of 6	Antenna Coupler CU-870/FPA-13 Terminal Box J-1222/FPA-13 Test Data Installation Drawings Technical Manuals CG-273-69	5.7	27	26	14	150

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EQUIPMENT SUPPLIED:

Quantity	Nomenclature	Length x Width x Height (Inches)			Weight (Pounds)
19	Antenna Elements AT-1018/FPA-13 shipped in kit form, consisting of the following items:				
19	Upper Mast Sections	21'7"	5	4 1/4	17.6
19	Lower Mast Sections	23'3"	2 3/4	4	38
19	Base Mounting Plates	2 1/2	5 1/4	5 1/4	2.8
19	Hinge Pins—1/2-13 by 2 hex. head machine bolt with lock washer and nut	2 1/4	7/8	7/8	
114	Thimbles 1/4 Line	2	1 1/4	3/8	
76	Lag Bolts 1/4 x 2	2 1/4	3/8	3/8	
57	Guy Anchors	3 1 1/2	2 3/4 dia.		2.12
2	1100 ft. Rolls 1/4" dia. Polypropylene Line	11	13 1/2	13 1/2	17
1	Gallon Epoxy Resin	7 1/2	6 3/4 dia.		9
1	Gallon Catalyst	7 1/2	6 3/4 dia.		9
1	Can of Asbestos Filler	5	4 1/4 dia.		1.4
12	8 oz. Paper Cups				
12	32 oz. Paper Cups				
24	Small Mixing Sticks				
6	24" Mixing Sticks				
2	Pairs of Gloves				
20	Antenna Couplers CU-870/FPA-13 includes:	10 3/4	8 1/2	3 1/4	4.5
40	Mounting Brackets	2 5/8	5 3/8	1	
1	Terminal Box J-1222/FPA-13 (Terminating Unit) includes:	11 3/4	6 1/2	3 1/2	3
2	Gaskets for Cover	9	6	3/32	
17	Cables, Interconnecting 65 ft. long	65'	3/4 dia.		34
1	Cable, Interconnecting, 35 ft. long	35'	3/4 dia.		18.5
1	Coaxial Plug PL-259	1 1/2	3/4 dia.		
2	Technical Manuals CG-273-69	11 1/2	9	1/2	
2	Installation Drawings				
1	Set of Test Records				

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