

# INSTALLATION INSTRUCTIONS

## AMPHENOL TELEVISION ANTENNA ARRAY Model No. 114-005

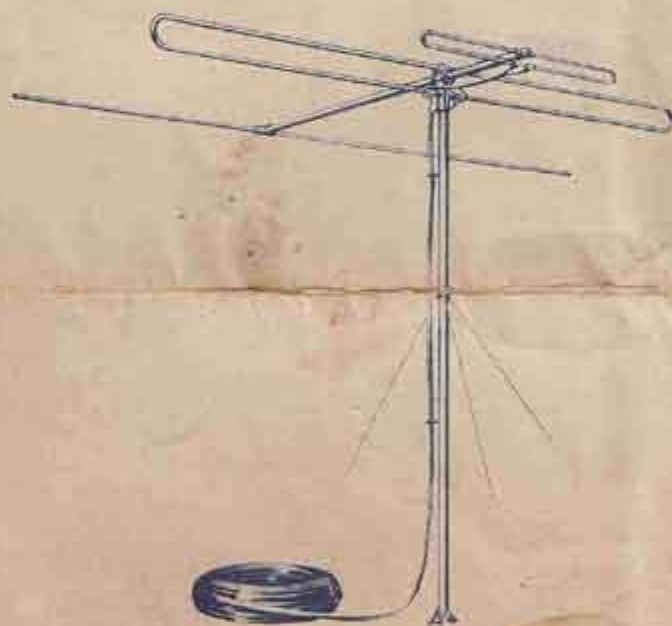


Figure 1—Amphenol  
Folded Dipole Television  
Antenna Array

You will get brilliant reception on all channels in both bands with the Amphenol Television Antenna Array. Its added gain results in brighter pictures and its directional pattern eliminates "ghosts" caused by multipath pickup.

Two broadbanded folded dipoles and a low band reflector, with a common transmission line, provide reception over both television bands—174-216 mc and 54-88 mc. The unique design of this new Amphenol antenna permits the large folded dipole (for the 54-88 mc band) to be used as a reflector for the small folded dipole which is tuned to the 174-216 mc band. No element length adjustment is required.

Constructed entirely of lightweight aluminum and rustproof steel, this Amphenol antenna is attractive in appearance, resists weather and corrosion and withstands high winds and severe ice loading. Because of its simple design it is easy to install. Simply follow the procedure outlined on the following pages.

**AMPHENOL**

**AMERICAN PHENOLIC CORPORATION**

1830 South 54th Avenue

Chicago 50, Illinois

## INSTALLATION INSTRUCTIONS

### Location

Usually this antenna will give the strongest signal pickup if it is installed as high as possible above the level of objects that might interfere with its operation, such as chimneys, metal roofs, copings, etc.

Because of its swivel type universal mounting bracket the antenna may be mounted in almost any location—on flat or sloping roofs, etc.

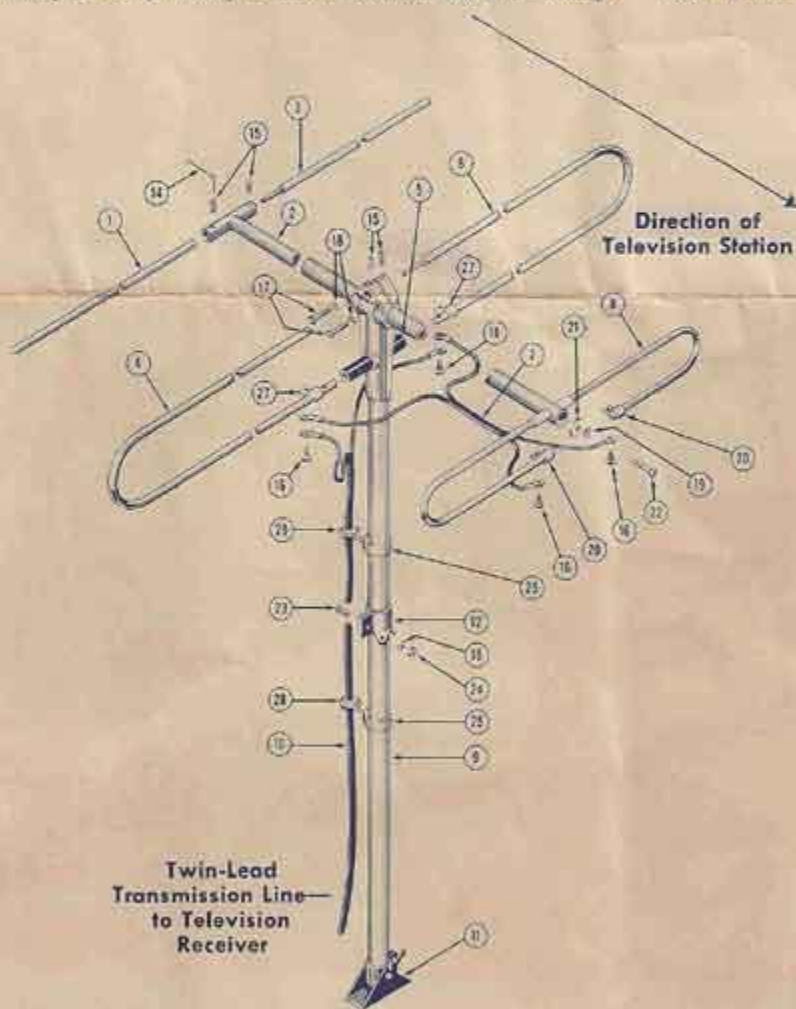
### Assembly

1) On Mast 9, assemble from the bottom one  $\frac{1}{16}$ " Tube Clamp 25, Guy Clamp 12 and the other  $\frac{1}{16}$ " tube clamp.

Locate the guy clamp for the best support or about midpoint on the mast. Attach the guy clamp securely with  $\frac{5}{8}$ " Round Head Machine Screw 23, Lockwasher 18 and Hex Nut 24. Temporarily attach the tube clamps loosely by means of Screw Eye Insulators 28.

2) Insert Crossarm 2 thru the large hole in the mast head. Insert  $1\frac{1}{4}$ " Hex Head Machine Screws 17 with Lockwashers 18 in the mast head. *Do not tighten.*

3) Assemble the Small Folded Dipole 8 thru the hole in the crossarm near the end opposite the "tee" and fasten with 1" Round Head Machine Screw 22, Lockwasher 19 and Cap 21. The screw will engage threaded holes in the sleeve and folded dipole element.



### PARTS LIST

Item No.	Description	Quantity
1	Reflector Element	1
2	Crossarm	1
3	Reflector Element with Plug	1
4	Large Folded Dipole Element	1
5	Tubular Insulator	1
6	Large Folded Dipole Element with Plug	1
7	Short Transmission Line	1
8	Small Folded Dipole Element	1
9	Mast	1
10	Twin-Lead Transmission Line	75 feet
11	Swivel Type Mounting Bracket	1
12	Guy Clamp	1
13	Stand-off Insulators	4
14	$\frac{1}{4}$ " Allen Wrench	1
15	Allen Set Screws	4
16	$\frac{3}{8}$ " Parker-Kalon Self-Tapping Screws	4
17	$1\frac{1}{4}$ " Hex Head Machine Screws	2
18	$\frac{1}{4}$ " Lockwashers	3
19	No. 8 Lockwasher	1
20	$\frac{3}{8}$ " Tube Clamps	2
21	Cap	1
22	1" Round Head Machine Screw	1
23	$\frac{5}{8}$ " Round Head Machine Screw	1
24	Hex Nut	1
25	Tube Clamps (Wittek)	2
26	$\frac{3}{4}$ " Round Head Wood Screws	4
27	$\frac{1}{2}$ " Tube Clamps	2
28	Screw Eye Insulators	2

Figure 2—Exploded view Amphenol Television Antenna Array Model 114-005

4) Push Tubular Insulator 5 thru hole in the mast head so that it will extend equally on both sides.

5) Place  $\frac{1}{2}$ " Tube Clamps 27 over the ends of Folded Dipole Elements 4 and 6 as shown and assemble to mast head. Slightly tighten  $\frac{1}{4}$ " Allen Set Screws 15.

6) Attach securely two leads of the Short Transmission Line 7 to Small Folded Dipole 8 by means of Tube Clamps 20 and Parker-Kalon Screws 16. Attach the other leads of Short Transmission Line 7 to Tube Clamps 27 loosely with Parker-Kalon Screws 16. *Do not twist this short transmission line.*

7) Adjust the spacing between the large and small folded dipoles by moving Crossarm 2. This spacing is correct when the short transmission line is pulled taut without bending the small folded dipole—or  $13\frac{3}{4}$ " from center to center. The small folded dipole and reflector should be parallel with the large folded dipole. *It is very important that the butted ends of the large folded dipole elements are accurately centered in the mast head slot.* Tighten the crossarm in place with Machine Screws 17. Tighten the Allen Set Screws 15 on the top of the mast head.

8) Select the location for the Screw Eye Insulators 28 and tighten securely with the screw eye in horizontal plane and extending in the direction of the reflector.

9) Attach the terminal lugs of Transmission Line 10 to Tube Clamps 27 on the large folded dipole and tighten the Parker-Kalon Screws securely. Snap the transmission line into the Screw Eye Insulators 28 leaving some slack at the top to remove strain from the connections. With pliers squeeze the screw eye of Screw Eye Insulators 28 so that the insulators are held in place firmly.

10) Insert Reflector Elements 1 and 3 in the "tee" of Crossarm 2. Make certain the elements extend equally from the "tee" and attach securely with  $\frac{1}{4}$ " Allen Set Screws 15 using Allen Wrench 14.

11) Fasten the Base Mounting Bracket 11 in the selected location on the building and insert mast into the

mounting bracket. Turn antenna in the general direction of the station or stations to be received.

12) Fasten 3 guy wires to Guy Clamp 12 and anchor the antenna.

13) To run the transmission line into the house, drill a hole thru the casing or wall. Push a porcelain tube thru the hole and run the lead-in thru the tube into the house. With this type of entry you do not have to cut the lead-in. If for some reason, the lead-in must be spliced, reconnect the conductors at the splice with the insulation butted together as closely as possible. If the lead-in is too long, cut off the end portion not required in order to make as direct a run as possible between the antenna and the receiver.

The transmission line should be installed as far as possible from metal objects (pipes, drains, metal roofs and copings, etc.). Never run it thru metal conduit. 4 Amphenol Stand-off Insulators 13 and 4 Wood Screws 26 are provided for support of the transmission line.

NOTE: Transposing the transmission line to the receiver will reduce noise pickup in the lead-in. To transpose, twist lead-in one-half turn every 3 or 4 feet.

14) The crossarm tip on which the small folded dipole is mounted should be aimed toward the television station from which maximum reception is desired. If the television stations to be received are spread over a general area, aim the antenna at the lowest powered station. Best orientation of the antenna can be accomplished by slowly adjusting the aiming of the antenna while another person is observing the television screen. It may be found that best reception is obtained with the antenna aimed at a point a few degrees away from the true direction of a given station.

15) Tension guy wires by pulling up guy clamp on mast and tightening screw assembly. Securely tighten clamp in mounting bracket.

## Lightning Protection

Lightning protection is provided by connecting a wire from the grounding lug of Mounting Bracket 11, to a suitable ground which can be either a water pipe or a rod driven at least 5 feet into moist soil. Use at least No. 12 wire for this purpose. The ground wire must be kept as far as possible from the transmission line thruout its entire length.

## Note:

After all screws and nuts are tightened in the final assembly of the antenna, a drop of spar varnish or aluminum paint on each screwhead and over each nut will prevent loosening and will insure good electrical contact for years of troublefree service.



AMPHENOL TELEVISION ANTENNA  
Model 114-008 Manual File I-1.7  
54-80 mc and 174-210 mc 3-1-48

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Chicago 90, Illinois



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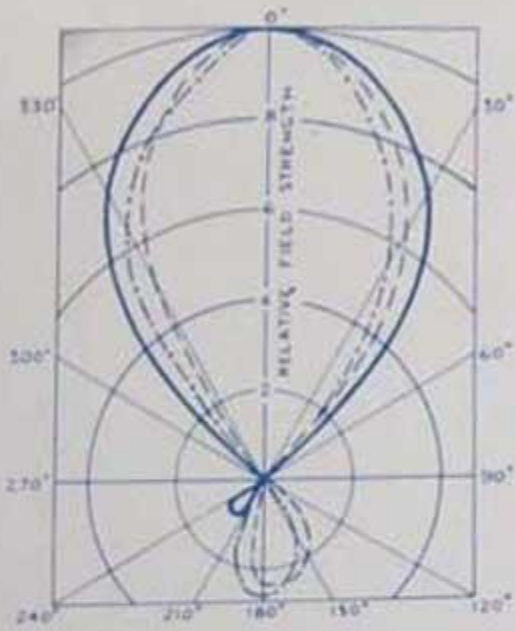
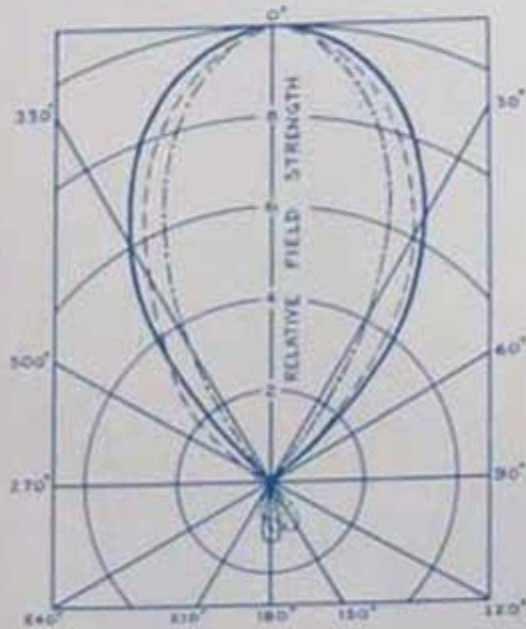


Figure 4. Radiation Pattern of Amphentol Model 114-005 Antenna.

----- 50 mc  
 \_\_\_\_\_ 80 mc  
 - - - - - 100 mc

Figure 5. Radiation Pattern of Amphentol Model 114-005 Antenna.

----- 174 mc  
 \_\_\_\_\_ 194 mc  
 - - - - - 210 mc



DATA SHEET FILE OF INFORMATION ON  
ANTENNAS and RADIO FREQUENCY COMPONENTS

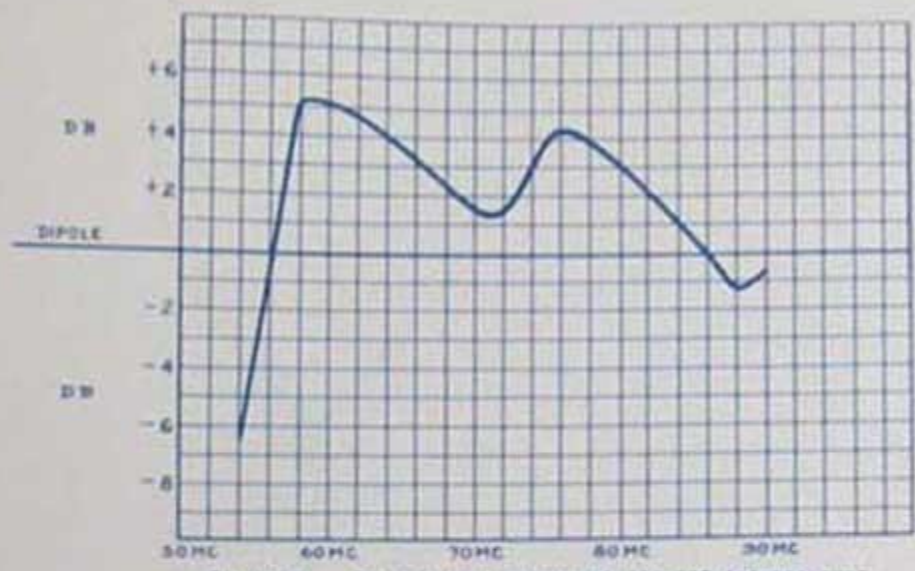


Figure 2. Gain of Amphenol Model 11a-005 Antenna over a dipole, 54 to 88 mc.

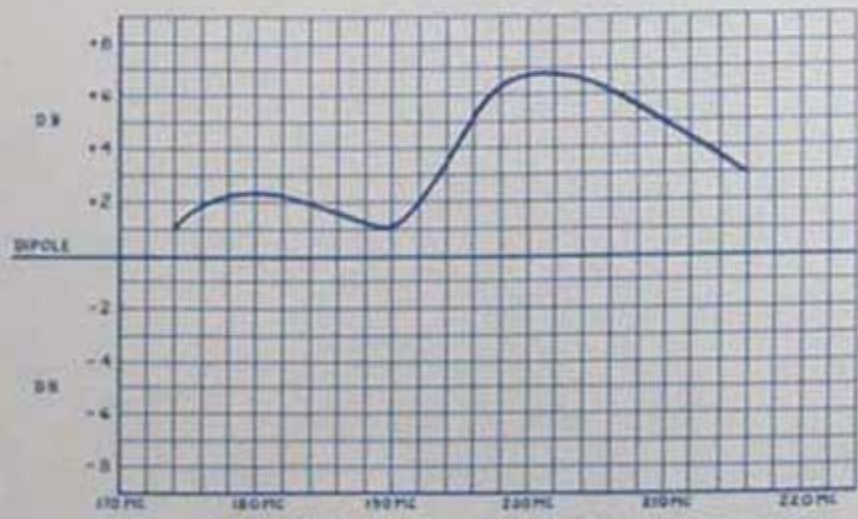


Figure 2. Gain of Amphenol Model 11a-005 Antenna over a dipole, 174 to 216 mc.