# MICROWAVE ANTENNAS
# KS-15676 HORN-REFLECTOR AND WAVEGUIDE SYSTEM
# INSTALLATION
# ANTENNA INSTALLATION

## 1. GENERAL

1.01 This issue which supersedes Issue B covers provision of a Temporary Talking pair and a Permanent Talking pair where required between the top of the tower and the ground or truck. A method for eliminating possibility of water entering and remaining in the 3 inch circular waveguide and its WR229 rectangular waveguide is also covered.

1.02 Substitute 2.01 (4) of this addendum for 2.01 (4) of the main section and add Part (3), Permanent Talking Pair.

## 2. METHOD OF INSTALLING

2.01 (4) Temporary Talking Pair required for telephone communication between the top of the tower and the ground shall be placed within the tower structure. Wire placed outside the tower structure may be blown away from the structure and come in contact with power conductors supplying the station.

## 3. PERMANENT TALKING PAIR

3.01 A permanent talking pair required for communication between the top of the tower and the ground level should consist of C Rural Wire or PLW214CW Wire. The former is furnished by the Western Electric Company and the latter may be obtained from the Superior Cable Corporation, Hickory, North Carolina.

3.02 The wire should be terminated at both ends in a 1305A Protector per AB66.130.

3.03 Attach the wire to the tower by one of the following methods:

1. Lash the talking pair to the conduit carrying power to the obstruction lights with Wraplock, at about 20 ft. intervals, at locations which can be conveniently reached from the tower members.

2. Place the pair in the inside of the angle forming the vertical legs of the tower ladder. Fasten the wire to the angle by means of No. 4 cable clamps and 3/8" #8 self tapping metal screws. Metal screws should be Z type, Parker-Kalon or equivalent. Drill holes with a #24 drill (.152" diam.). An alternative method of fastening the No. 4 clamps is by means of 3/4" #8-32, galvanized round head machine bolts, lock washers and nuts. Use a #18 (.170" diam.) drill. Place clamps on the angle leg parallel to the ladder rungs, at 10 or 20 ft. intervals.

3.04 Support the talking pair at 100 ft. intervals by means of the dead end support described in Bell System Practices G34.120.2, and use a dead end support at the top of the tower.

## 4. EXCLUSION OF WATER FROM WAVEGUIDE WHEN INITIALLY INSTALLED.

4.01 Every effort should be made to eliminate possibility of water entering and remaining in the 3 inch circular waveguide and its connecting WR229 rectangular waveguide and that moisture is not present in the waveguide at the time the antenna and waveguide are installed.

4.02 Prior to erection of the antenna, the interior of the antenna should be visually inspected to determine the presence of ice or water. If any is found, it should be entirely removed before attachment of the feed horn. If ice is present it may be necessary to play hot air from a heater blower over the antenna in order to melt the ice.

Standard Bell System ventilating - heaters are available and may be used for this purpose.

They may be ordered as follows:

Ventilating Heater AT-C170X per BSP 649-510-120 (G96.140.1)

Hoses for conveying hot air from ventilating heater must be ordered separately.

4.03 Immediately after the antenna and waveguide are installed connection should be made where possible, to the dehydrator air supply system. Where this cannot be done, several methods can be followed, depending upon circumstances.

1. When the waveguide and antenna cannot be connected to the dehydrator at the time of installation, the antenna circular

© American Telephone and Telegraph Company, 1961
Printed in U.S.A.



TCI Library: www.telephonecollectors.info

and rectangular waveguide shall be vented inside the building to enable the system to breathe the warm and comparatively dry air inside the building.

2. In case neither of the above methods can be employed the antenna should be vented either at the bottom of the antenna or the 3 inch circular waveguide.

4.04 If an appreciable length of time has elapsed between antenna erection and connection to the circular waveguide, weather conditions might cause the formation of frost on the interior surfaces of the antenna. If this is suspected at about the time that the antenna is to be oriented, it may be necessary to use a heater blower mentioned in Paragraph 4.02 to remove the moisture.

4.05 In all cases, prior to orienting the antenna, it is recommended that the rectangular waveguide be opened at its lowest elevation and drained of any possible accumulation of water; after which it should be connected to the dehydrator for at least 24 hours, before orienting.



TCI Library: www.telephonecollectors.info