DEPARTMENT OF THE ARMY
TECHNICAL MANUAL

TM11-2615

DEPARTMENT OF THE
AIR FORCE MANUAL

AFM101-5

Per Change 1, 18 March 1949, title of manual is changed to read as follows:

ANTENNA SUPPORT

AB-105A/FRC AND AB-105B/FRC

DEPARTMENTS OF THE ARMY AND THE AIR FORCE

2 AUGUST 1948

copy 1 /2

WARNING

Operator and maintenance personnel should be familiar with the requirements of TB SIG 291 before attempting installation or operation of the equipment covered in this manual. Failure to follow the requirements of TB SIG 291 could result in injury or DEATH.

TM 11-2615 *AFM 101-5*

This manual supersedes TM 11-2615, 18 July 1944

ANTENNA SUPPORT

AB-105A/FRC

United States Government Printing Office
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DEPARTMENTS OF THE ARMY AND THE AIR FORCE
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TM 11-2615—AFM 101-5, Antenna Support AB-105A/FRC, is published for the information and guidance of all concerned.

[AG 300.7 (14 May 1948)]

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For explanation of distribution formula see TM 38-405.

CONTENTS

DESTRUCTION NOTICE

WHY —To prevent the enemy from using or salvaging the equipment.

WHEN—When ordered by your commander.

HOW —1. Smash—Use sledges, axes, handaxes, pickaxes, hammers, crowbars, heavy tools.
2. Cut—Use axes, handaxes, machetes.
3. Burn—Use gasoline, kerosene, oil, flame throwers, incendiary grenades.
4. Explosives—Use firearms, grenades, TNT.
5. Disposal—Bury in slit trenches, fox holes, other holes. Throw in streams. Scatter.

USE ANYTHING IMMEDIATELY AVAILABLE FOR DESTRUCTION OF THIS EQUIPMENT

WHAT—1. Smash—Guy insulators, supporting posts, braces, channels, anchors, shackles, turnbuckles, plates.
2. Cut—Guys.
3. Bend—Turnbuckles, plates, clips.
4. Bury or scatter—All that remains.

DESTROY EVERYTHING

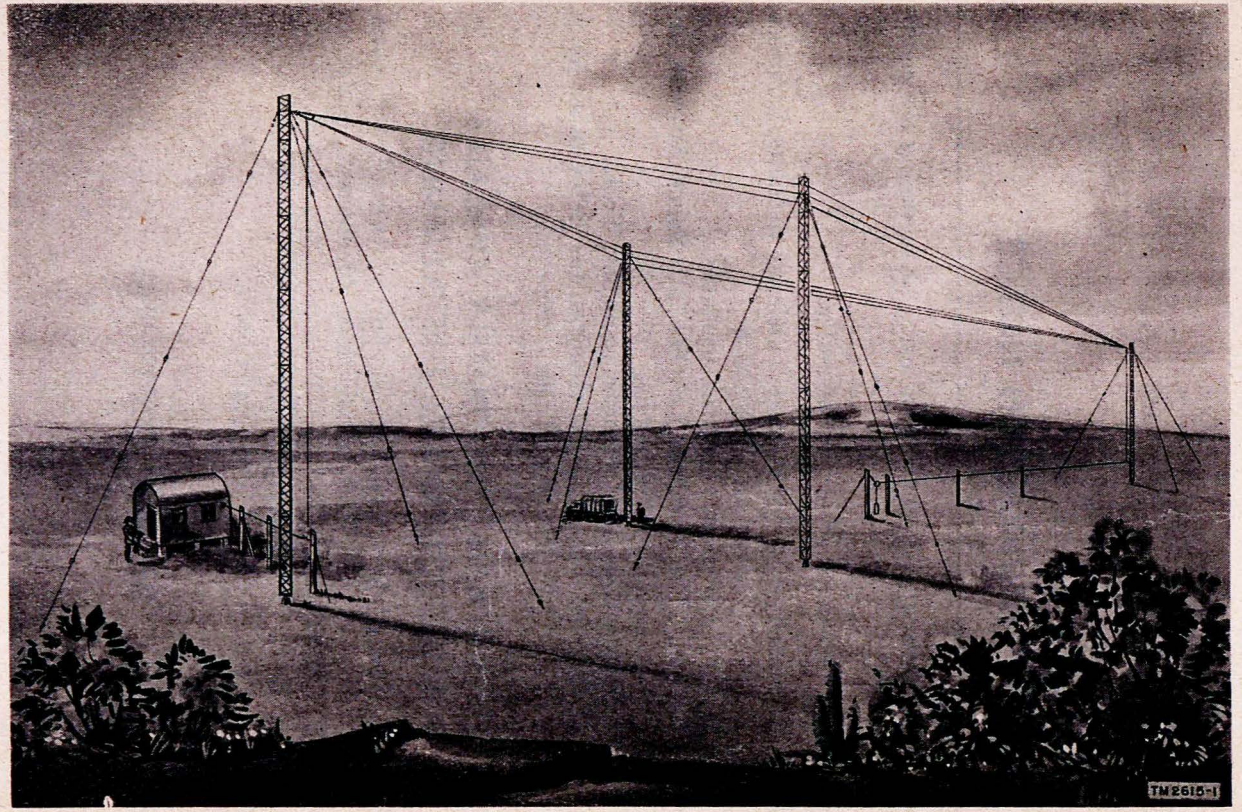


Figure 1. Antenna Support AB–105A/FRC.

This manual supersedes TM 11-2615, 18 July 1944.

PART ONE
INTRODUCTION

Section I. DESCRIPTION

1. General

Antenna Support AB-105A/FRC is a guyed, latticed tower used in groups of four (two end and two side supports) to support horizontal rhombic antennas. The support is a triangular-shaped assembly which consists of mast sections, guys, turnbuckles, anchors, anchor rods, antenna guy attachments, and a steel pedestal base. The assembled support is 73 feet, 7 inches high and includes five 10-foot sections, two 6-foot sections, one 5-foot section, and one 2½-foot section. The base section is 4 feet high. All sections are steel with hot-dipped galvanized finish. Heights lower than 73 feet, 7 inches may be obtained by omitting one or more sections as required.

2. Technical Characteristics

Material ---------- Structural grade steel.
Loading ---------- Designed to withstand 11,000 pounds (lb) horizontal load at center antenna attachment plate or horizontal loads of 1,450 lb at each of three antenna attachment plates.
Mounting ---------- Hinged base.
Foundation ---------- Steel pedestal or concrete.
Guys, breaking strength ---- (⅝-inch diameter) 28,500 lb; (5/16-inch diameter) 6,600 lb.
Anchors ---------- Four- and two-way expansion types.

3. Table of Components

Component	Required No.	Height (in.)	Depth (in.)	Length (in.)	Weight (lb.)
Supporting post G1----------	3	2	2½	35¾	6.3
Supporting post G2----------	3	2	2½	29¾	5.2
Supporting post G3----------	3	2	2½	60¾	10.7

Component	Required No.	Height (in.)	Depth (in.)	Length (in.)	Weight (lb.)
Supporting post G4	15	2	2½	119¾	21.0
Supporting post G5	3	2	2½	71¾	12.6
Supporting post G6	3	2	2½	71¾	
Splice plate G7	27	1¾	2¾	12	2.0
Diagonal brace G8	132	½	1½	27½	1.0
Diagonal brace G9	32	½	1½	27⅛	0.9
Horizontal brace G10	21	½	1½	23	0.6
Angle G44	6	1¼	1¼	27⅛	23.0
Step G11	27	½	3⅞	5½	0.3
Step G12	29	½	3⅞	5½	0.3
Base channel G17	3	1½	4	24	10.8
Angles G18, G19	2(1 each)	2½	2	23	5.3
Angle G20	1	3	2	23	7.7
Angles G22, G23, G24, G33, G34.	5(1 each)	1¼	1¼	23	1.9
Angle G25	2	2	1½	30⅜	5.8
Angles G27, G28	2(1 each)	1½	1½	23	3.4
Angle G29	1	2½	2	23	5.2
Angle G35	1	2	1½	23	2.8
Bottom plate G15	2	3	4½	4½	2.3
Bottom plate G16	1	3	5¾	6	3.6
Antenna attachment plate G21.	2	3/16	2¼	23¾	2.9
Antenna attachment plate G30.	1	¼	3	21¾	4.6
Antenna attachment plate G31.	2	¼	3	4¼	0.9
Gusset plate G32	1	3/16	6	9⅛	1.8
Gusset plate G36	2	3/16	8⅛	9¾	3.5
Guy attachment plate G37, G38.	2(1 each)	3/16	4¼	18¾	4.7
Filler plate G45	1	½	4⅜	6⅝	1.7
Guy attachment plate G46, G47.	4(2 each)	3/16	4¼	8⅛	1.7

Component	Required No.	Height (in.)	Depth (in.)	Length (in.)	Weight (lb.)
Bottom assembly G14	1	-------	11⅞	16¾	12.0
Guy WR2	2	-------	5/16 diam	100 ft. 8 in.	51.0
Guy WR1	1	-------	⅝ diam	101 ft. 5 in.	127.0
Expanding anchor, two-way	2	8	8		
Expanding anchor, four-way	1	10	10	---------	25.0
Anchor rod for four-way anchor.	1	-------	1 diam	120	34.0
Anchor rod complete with turnbuckle body.	2	-------	⅝ diam	96	9.0
Ground rod	1	-------	½ diam	96	4.5
Pedestal base consisting of—	1				
Corner post	4	2	2	54	
Base angle, inside	4	3	2½	41¾	
Base angle, outside	4	3	3	45¾	
Cap	1	5⅛	9⅝	9⅝	
Hardware.					
Set of running spare parts:	1				
Guy insulator for ⅝-inch guy.	1				
Guy insulator for 5/16-inch guy.	1				
Wire rope clip for ⅝-inch guy.	3				
3-bolt clamp	1				
Tail clip for 5/16-inch guy	2				
Seizing wire	----------	-------	----------	12 ft.	

Note. This list is for general information only. See appropriate publications for information pertaining to requisition of spare parts.

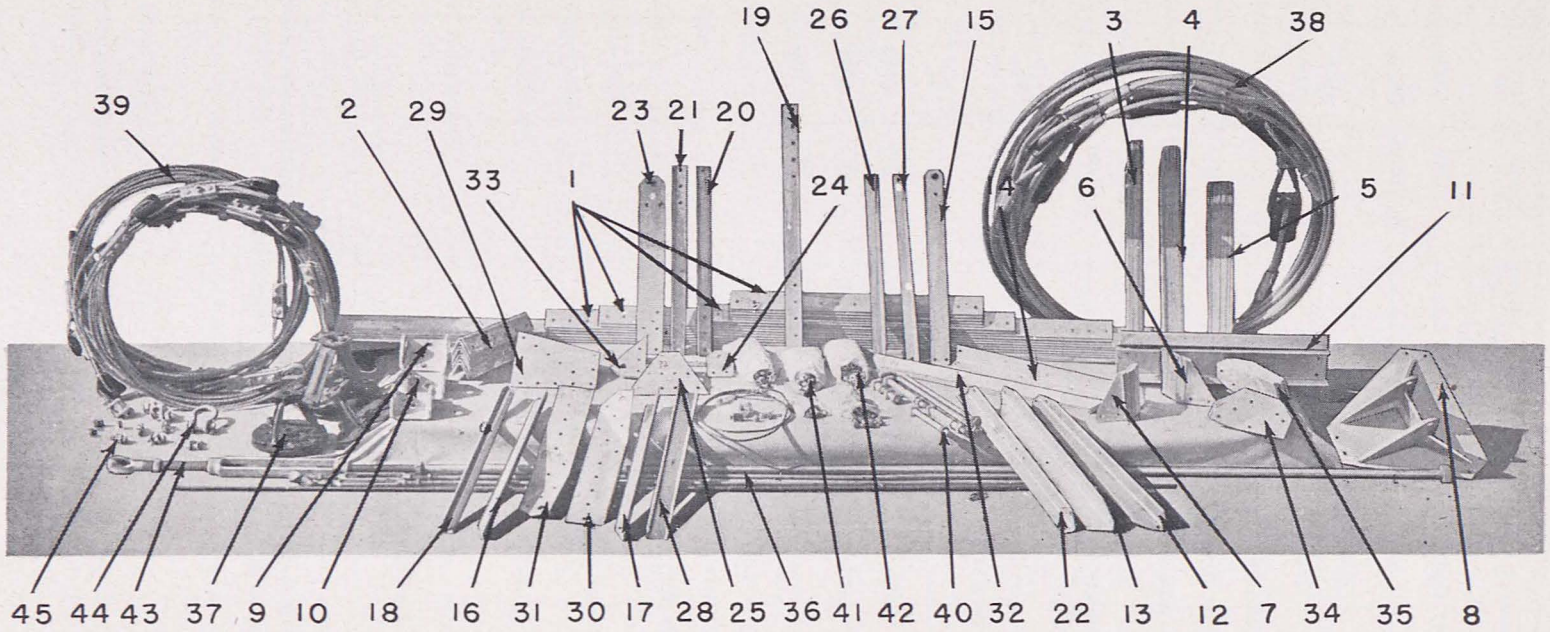


Figure 2. Antenna Support AB–105A/FRC, component parts less pedestal base.

Item No.	Name of part
1	Supporting posts G1 through G6
2	Splice plate G7
3	Diagonal brace G8
4	Diagonal brace G9
5	Horizontal brace G10
6	Left-hand step G11
7	Right-hand step G12
8	Bottom assembly G14
9	Bottom plate G16
10	Bottom plate G15
11	Base channel G17
12	Angle G18
13	Angle G19
14	Angle G20
15	Antenna attachment plate G21
16	Angle G22
17	Angle G23
18	Angle G24
19	Angle G25
20	Angle G27
21	Angle G28
22	Angle G29
23	Antenna attachment plate G30
24	Antenna attachment plate G31
25	Gusset plate G32
26	Angle G33
27	Angle G34
28	Angle G35
29	Gusset plate G36
30	Guy attachment plate G37
31	Guy attachment plate G38
32	Angle G44
33	Filler plate G45
34	Guy attachment plate G46
35	Guy attachment plate G47
36	Anchor rods
37	Anchor
38	Guy WR1
39	Guy WR2
40	Shouldered bolt and pipe spacer
41	Bolts and nuts
42	Locknuts
43	Turnbuckle
44	Shackle
45	Wire rope clamp

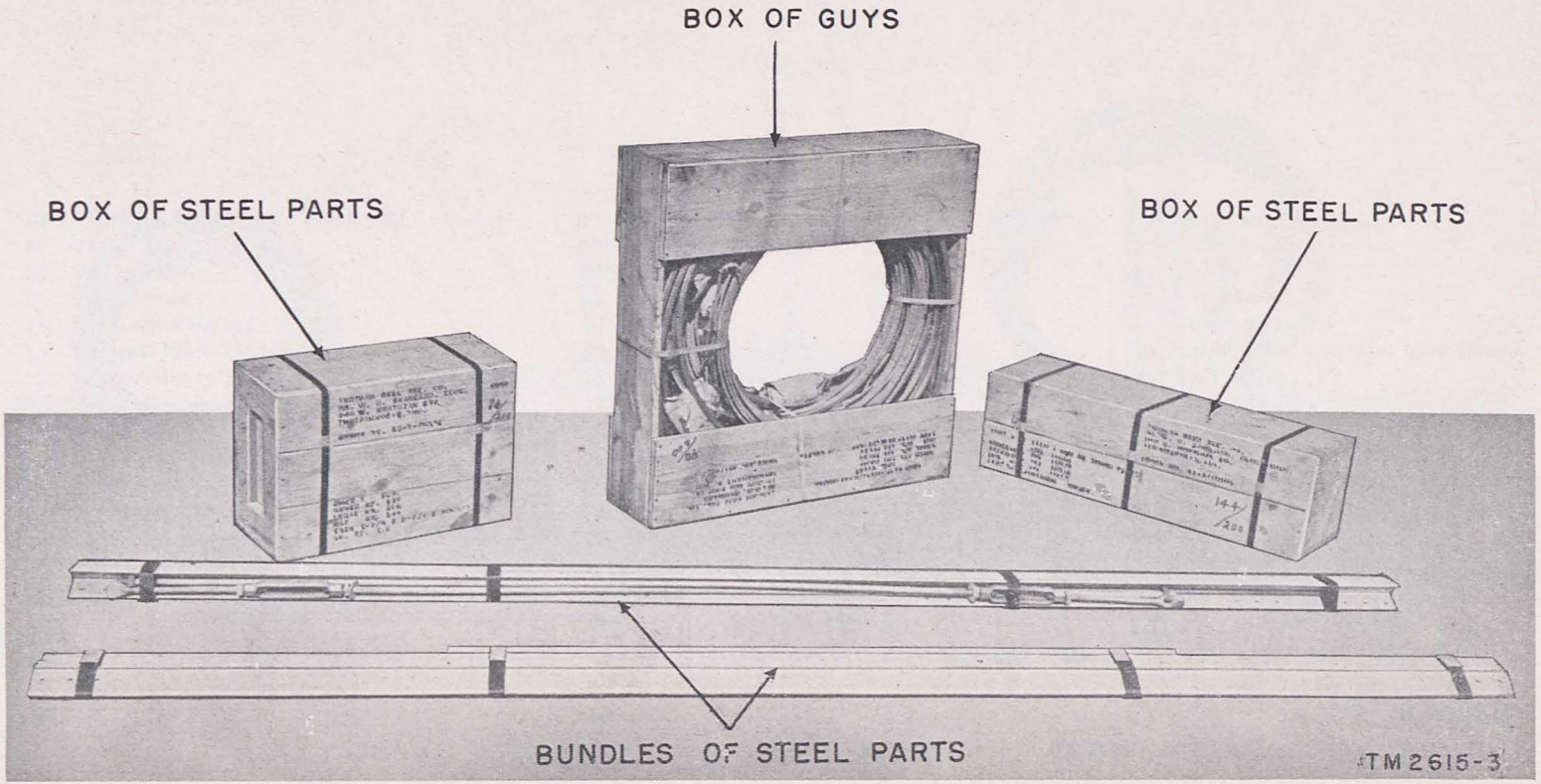


Figure 3. Antenna Support AB–105A/FRC, packed for shipment.

4. Packaging Data

a. Antenna Support AB–105A/FRC (less pedestal base (*b* below)) is shipped completely disassembled into component parts and is packed in two bundles and three boxes (fig. 3). All wooden boxes are nailed and banded with steel straps. All hardware is contained in cloth bags. The following table lists the container sizes, weights, and contents:

Item	Container	Size (in.)	Weight (lb.)	Contents	
				Quan.	Item
1	Bundle of steel parts.	2½ x 5½ x 120	260	2	Supporting post G1.
				1	Supporting post G2.
				8	Supporting post G4.
				3	Supporting post G5.
				2	Anchor rod. Complete with turnbuckle body.
				1	Copperweld ground rod.
2	Bundle of steel parts.	2½ x 6 x 120	272	1	Supporting post G1.
				2	Supporting post G2.
				3	Supporting post G3.
				7	Supporting post G4.
				3	Supporting post G6.
				1	Anchor rod.
3	Box of steel parts.	10¾ x 10-¾ x 33¾	360	132	Diagonal brace G8.
				32	Diagonal brace G9.
				21	Horizontal brace G10.
				6	Angle G44.
				27	Step (left-hand) G11.
				29	Step (right-hand) G12.
				3	Base channel G17.
				1	Angle G18.
				1	Angle G19.
				1	Angle G20.
				1	Angle G22.

Item	Container	Size (in.)	Weight (lb.)	Contents	
				Quan.	Item
				1	Angle G23.
				1	Angle G24.
				2	Angle G25.
				1	Angle G27.
				1	Angle G28.
				1	Angle G29.
				1	Angle G33.
				1	Angle G34.
				1	Angle G35.
				2	Bottom plate G15.
				1	Bottom plate G16.
				2	Antenna attachment plate G21.
				1	Antenna attachment plate G30.
				2	Antenna attachment plate G31.
				1	Gusset plate G32.
				2	Gusset plate G36.
				1	Guy attachment plate G37.
				1	Guy attachment plate G38.
				1	Filler plate G45.
				2	Guy attachment plate G46.
				2	Guy attachment plate G47.
				1	Shackle (with pin and thimble formed in place).
				2	Anchor bolt.
4	Box of miscellaneous parts.	16⅜ x 9⅞ x 23½	212	1	Bottom assembly G14.
				27	Splice plate G7.
				2	Pipe spacer G43.

Item	Container	Size (in.)	Weight (lb.)	Contents	
				Quan.	Item
				3	Shoulder bolt.
				6 ft	#4 B&S 7-strand soft-drawn copper wire.
				1	Thimble-eye rod for four-way expanding anchor.
				1	Turnbuckle body for 10-foot anchor rod.
				1	Expanding anchor (4-way).
				2	Expanding anchors (2-way).
				105	Bolts (¾").
				524	Bolts (1").
				60	Bolts (1¼").
				6	Bolts (1½").
				2	Bolts (1⅝").
				3	RH stove bolts (¾").
				695	Standard lockwashers for ⅜" bolts.
				3	Standard cut washers for ¼" bolt.
				3	Standard lockwashers for ¼" bolt.
				2	Connector lugs for #4 stranded wire.
				1	Ground wire clamp.
				2	TM 11–2615.
5	Box of guys and spare parts.	11 x 37½ x 37½	300	1	Guy WR1.
				2	Guy WR2.
				3	Wire rope clip (⅜-inch).
				2	Three-bolt clamp.
				1	Guy insulator (for guy WR1).
				1	Guy insulator (for guy WR2).
				2	Tail clips (5/16-inch).
				12 ft	Seizing wire.

b. The steel pedestal base is shipped from depot stock completely disassembled into its component parts and is packed in two bundles secured with metal bands. The following table lists the container sizes, weights, and contents:

Bundle	Size (in.)	Weight (lb.)	Contents	
			Quan.	Item
1	5⅞ x 11½ x 11½	31	1	Cap, plate steel.
			2	Bolt (⅝" x 2") with two nuts.
			40	Bolt (⅜" x 1½") with two nuts.
			2	Paint, black, asphalt, 1-pint can.
			1	Brush, paint.
2	5½ x 6½ x 54	190	4	Corner post.
			4	Base angle, inside.
			4	Base angle, outside.

5. Description of Major Components

a. Supporting Posts. All supporting posts used with Antenna Support AB–105A/FRC are hot-dipped galvanized, V-shaped (60°) steel angle irons. The posts are used as tower legs in the various sections of the antenna support and are designated as G1, G2, G3, G4, G5, and G6.

(1) *G1.* Each supporting post G1 is 2 feet, 11¾ inches long and has three holes of 13/32-inch diameter punched in each 2-inch face of the V at both ends. Three additional holes are provided in the left face; the first of these holes is located 1 foot, 6⅞ inches from the bottom. Three supporting posts G1 are required in the C1 section of each antenna support.

(2) *G2.* Each supporting post G2 is 2 feet, 5¾ inches long and has three holes of 13/32-inch diameter punched in each 2-inch face of the V at both ends. Three additional holes are provided in the left face; the first of these holes is located 1 foot, 2⅞ inches from the bottom. Three supporting posts G2 are required in the C2 section of each antenna support.

(3) *G3.* Each supporting post G3 is 5 feet, ¾ inches long and has three holes of 13/32-inch diameter punched in each 2-inch face of the V at both ends: Three additional holes are provided in the right face (starting 2 feet, 6⅜ inches from the bottom), and six additional holes are provided in the left face. Three pieces are required in the C3 section of each antenna support.

(4) *G4.* Each supporting post G4 is 9 feet, 11¾ inches long

and has three holes of 13/32-inch diameter punched in each 2-inch face of the V at both ends. Three additional sets of three holes each are provided in the right face; four other sets of three holes each are provided in the left face. Fifteen supporting posts G4 are required per antenna support and are used as legs in the C4 and C5 sections.

(5) *G5.* Each supporting post G5 is 5 feet, 11¾ inches long and has three holes of 13/32-inch diameter punched in each 2-inch face at the bottom. Five holes are provided in each face at the top, two additional sets of three holes each in the right face, and nine additional holes in the left face. Three supporting posts G5 are required per antenna support and are used as legs in the C6 section.

(6) *G6.* Each supporting post G6 is 5 feet, 11¾ inches long and has three holes of 13/32-inch diameter punched in each face at the bottom. Nine additional holes are provided in the right face and nine in the left face. Three supporting posts G6 are required per antenna support and are used as legs in the C7 section.

b. Splice Plates. The reinforcing (splice) plates G7 are V-shaped, 10-gauge steel formed angles, 12 inches long. Each plate is provided with six holes of 13/32-inch diameter punched in each face of the V, spaced 1 inch from each end and 2 inches apart. The splice plates are used to connect adjacent supporting posts together when the various tower sections are connected to form the legs of the triangular-shaped antenna support. Twenty-seven reinforcing plates are required per antenna support.

c. Diagonal Braces. All diagonal braces used with Antenna Support AB–105A/FRC are L-shaped, hot-dipped galvanized, formed angles fabricated of 14-gauge steel. Each brace is provided with flattened ends, each of which contains a single hole of 13/32-inch diameter. The braces are used to provide diagonal bracing to the antenna support.

(1) *G8.* Each diagonal brace designated G8 is 2 feet, 3½ inches long. One hundred and thirty-two braces G8 are required per antenna support and are used in sections C3, C4, and C5.

(2) *G9.* Each diagonal brace G9 is 2 feet, 3⅛ inches long. Thirty-two braces G9 are required per antenna support and are used in sections C1, C2, C6, and C7.

d. Horizontal Braces. The horizontal braces G10 are L-shaped, hot-dipped galvanized, formed angles and are fabricated of 14-gauge steel. Each brace G10 is 1 foot, 11 inches long and is provided with flattened ends, each of which contains a single hole of 13/32-inch diameter. Twenty-one horizontal braces are required per antenna support and are used to provide horizontal bracing in sections C1, C2, C3, and C4.

e. Steps. Each section of the antenna support is provided with left- and right-hand steps on face A to facilitate climbing the sup-

port for maintenance and repair. Left-hand steps are designated G11; right-hand steps are designated G12. All steps are L-shaped and are fabricated of 16-gauge steel. Each step is 5½ inches long and has two holes of 13/32-inch diameter punched in the wider (triangular-shaped) face. Twenty-seven left-hand steps G11 and 29 right-hand steps G12 are required per antenna support.

f. Bottom Assembly. The bottom plate assembly G14 is a hot-dipped galvanized steel plate, 11⅞ inches wide by 16¾ inches long by ¼ inch thick, with an assembly of two welded support plates and two welded wing connection (hinge) plates. The plate is six-sided in shape, three sides 1 foot, 1¾ inches long and the remaining three alternate sides 3 inches long. Six holes of 13/32-inch diameter are located in three sets of two holes each (spaced 2 inches apart) in the three sides of shorter dimension. Each of the wing connection (hinge) plates is provided with a hole to accommodate a shoulder bolt. One bottom assembly is required per antenna support and serves as a mounting for the support.

g. Bottom Plate G15. This plate is a ⅜-inch thick, U-shaped steel plate with a base 4½ inches square and vertical sides 2¾ inches long. The sides are bent at a 90° angle to the base; each side is provided with a hole of 25/32-inch diameter 1 inch from the top. The sheared ends taper from 4½ inches at the base to 1 inch at the top. The base is provided with one center hole of 25/32-inch diameter. Two bottom plates G15 are connected together by means of a ¾-inch by 1⅝-inch bolt and also to the bottom assembly G14 (*f* above) and the bottom plate G16 (*h* below) by means of a ¾-inch by 6¾-inch bolt and by pipe spacer G43. Bottom plates G15 are used as part of the swivel (at the base of the antenna support) that is required to erect the support to a vertical position.

h. Bottom Plate G16. This U-shaped plate is a hot-dipped galvanized steel plate with sides bent at a 90° angle from the base. The plate is 5⅜ inches wide by 6 inches long by 3 inches high by ⅜-inch thick. The sheared ends taper from 6 inches at the base to 1 inch at the top. One hole of 25/32-inch diameter is provided in each tapered side at a distance of 1 inch from the top; two holes of 13/16-inch diameter are provided in the base, 1 inch from each side. One plate G16 is used per antenna support to mount the base swivel to the concrete foundation by means of two ⅝-inch by 18-inch anchor bolts.

i. Base Channels G17. These channels are formed steel channels 4 inches wide and 2 feet long. Each of the two flanges is 1½ inches high. Two 13/32-inch diameter holes are punched in each end of the channel; two 13/32-inch diameter holes are punched in the center of one web. Three base channels G17 are used per antenna support to connect the bottom assembly G14 to section C1 (fig. 8).

j. ANGLES. Various formed steel angles of different dimensions are provided with Antenna Support AB–105A/FRC for use as horizontal and diagonal braces in the various antenna support sections. Angles will be designated hereinafter as horizontal or diagonal braces, according to their use ((1) or (2) below).

(1) *As horizontal braces.* (*a*) *Angles G18 and G19.* Angles G18 and G19 are each 1 foot, 11 inches long and 3/16 inch thick and each is provided with a 2-inch face and a 2½-inch face. All ends of each angle are cut back. Each 2-inch and 2½-inch face is provided with two holes of 13/32-inch diameter. One angle G18 and one angle G19 are used in section C5 of each antenna tower.

(*b*) *Angle G20.* Each angle G20 is 1 foot, 11 inches long and ¼ inch thick and is provided with a 3-inch and a 2-inch face. Both ends of the 3-inch face are cut back. The 3-inch face is provided with four holes of 13/32-inch diameter and the 2-inch face with five holes of the same diameter. One angle G20 is used in section C5 of each antenna support.

(*c*) *Angles G22, G23, G33, and G34.* These angles are each 1 foot, 11 inches long and ⅛-inch thick and are provided with two 1¼-inch faces. Both ends of one face are cut back while the other face is provided with one hole of 13/32-inch diameter at each end. One angle G22 and one G23 are used in section C6 of each antenna support; one G33 and one G34 are used in section C7 of each antenna support.

(*d*) *Angle G24.* This angle is 1 foot, 11 inches long and ⅛ inch thick and is provided with two 1¼-inch faces. One face contains one hole of 13/32-inch diameter punched at each end; the other face is blank. One angle G24 is used in section C6 of each antenna support.

(*e*) *Angles G27 and G28.* Angles G27 and G28 are each 1 foot, 11 inches long and 3/16-inch thick and are provided with two 1½-inch faces. Both ends of one face of each angle are cut back; the other face is provided with four holes of 13/32-inch diameter. One angle G27 and one angle G28 are used in section C6 of each antenna support.

(*f*) *Angle G29.* This angle is 1 foot, 11 inches long and 3/16 inch thick and is provided with a 2½-inch face and a 2-inch face. The 2½-inch face is cut back at each end; this face is provided with a hole of 13/32-inch diameter at each end and with another hole in the center of the face. The 2-inch face contains one hole of 13/32-inch diameter at each end. One angle G29 is used in section C6 of the antenna support.

(*g*) *Angle G35.* This angle is 1 foot, 11 inches long and ⅛ inch thick and is provided with a 2-inch face and a 1½-inch face. One hole of 13/32-inch diameter is provided in each end of the 1½-inch

face. No holes are provided in the 2-inch face. One angle G35 is used in section C7 of each antenna support.

(2) *As diagonal braces.* (*a*) *Angle G25.* This angle is 2 feet, 6⅜ inches long and 3/16 inch thick and is provided with one 2-inch face and one 1½-inch face. One end of the 1½-inch face is cut back; ten holes of 13/32-inch diameter are punched in the 2-inch face. Two angles G25 are used in section C6 of each antenna support.

(*b*) *Angle G44.* This angle is 2 feet, 3⅛ inches long by ⅛ inch thick and is provided with two 1¼-inch faces. Both ends of one face are cut back; the other face is provided with one hole of 13/32-inch diameter located ⅝ inch from each end and ¾ inch out from the point of the angle. Six angles G44 are used in section C6 of each antenna support.

k. Antenna Attachment Plates. Three different types of antenna attachment plates are supplied with the equipment and are provided for use in sections C5, C6, and C7. Two antenna attachment plates G21 are required per antenna support, one in section C5 and one in section C7. One antenna attachment plate G30 is used in conjunction with two antenna attachment plates G31 in section C6 of the antenna support.

(1) *G21.* Antenna attachment plate G21 is a hot-dipped galvanized steel plate, 2¼ inches wide by 3/16 inch thick by 1 foot, 11¾ inches long. One end is cut back ¼ inch on each side; the other end is cut back ⅝ inch on each side. Each end is provided with two holes of 13/32-inch diameter.

(2) *G30.* Antenna attachment plate G30 is a hot-dipped galvanized steel plate, 3 inches wide by ¼ inch thick by 1 foot, 9¾ inches long. One end of the plate is cut back 1 inch on each side. The cut-back end is provided with one hole of 11/16-inch diameter and with two holes of 13/32-inch diameter. Six holes of 13/32-inch diameter are punched at the other end.

(3) *G31.* Antenna attachment plate G31 is a hot-dipped galvanized steel plate, 3 inches wide by ¼ inch thick by 4¼ inches long. One end of the plate is cut back 1 inch on each side. This cut-back end is provided with one hole of 11/16-inch diameter; the other end is provided with two holes of 13/32-inch diameter.

l. Gusset Plates. Two types of gusset plates are supplied for use with each antenna support. One gusset plate G32 ((1) below) is used in section C6 of each antenna support in conjunction with horizontal braces G27 and G28 and with antenna mounting plate G30. Two gusset plates G36 ((2) below) are used in section C6 of each antenna support in conjunction with diagonal braces G25.

(1) *G32.* Gusset plate G32 is a hot-dipped galvanized, four-sided, steel bracing plate 6 inches long by ⅜ inch thick. The plate tapers from a width of 9⅛ inches at the base to a width of 2¼ inches at the top. Ten holes of 13/32-inch diameter are punched in the plate

(fig. 2); these holes are distributed in three rows of 2, 4, and 4 holes respectively.

(2) *G36.* Gusset plate G36 is a hot-dipped galvanized, four-sided steel bracing plate, 9¾ inches long by 3/16 inch thick. The plate is 8⅛ inches wide at the base and tapers on one side to 5⅛ inches at the top. This plate is provided with 12 holes of 13/32-inch diameter.

m. Filler Plate. Filler plate G45 is a hot-dipped galvanized steel plate 8¼ inches long by ½ inch thick. The plate has four sides of the following lengths: 8¼ inches, 2 inches, 1⅝ inches, and 6¾ inches. The plate is provided with one hole of 25/32-inch diameter and with three holes of 13/32-inch diameter. One filler plate G45 is used as a filler piece between guy attachment plates G37 and G38 in section C6 of each antenna support.

n. Guy Attachment Plates. Guy attachment plates marked G37, G38, G46, and G47 are provided with the equipment as means of attaching the guys to the antenna support. One guy plate G37 and one plate G38 ((1) below) are used in conjunction with filler plate G45 as attachments for the guys of ⅝-inch diameter in section C6 of each antenna support (fig. 18). Two guy plates G46 and two plates G47 ((2) below) are used as attachments for guys of 5/16-inch diameter in section C6 of each antenna support (fig. 18).

(1) *G37 and G38.* Guy attachment plates G37 and G38 are hot-dipped galvanized steel plates, 4¼ inches wide by 3/16 inch thick by 1 foot, 6¾ inches long. One end of each plate is cut back and is bent to the right at a 30° angle on a diagonal line starting approximately 2½ inches in from the cut-back side. One hole of 25/32-inch diameter is punched in the cut-back end. The bent portion of each plate is provided with three holes of 13/32-inch diameter. The flat portion of the plate is provided with eight holes of 13/32-inch diameter.

(2) *G46 and G47.* Guy attachment plates G46 and G47 (fig. 2) are hot-dipped galvanized steel plates, 4¼ inches wide by 3/16 inch thick by 8⅛ inches long. Both sides of one end are cut back; the other end is bent to the right at a 30° angle and is provided with three holes of 13/32-inch diameter. The flat portion of the plate also is provided with three holes of 13/32-inch diameter.

o. Guy WR1. Guy WR1 is made of high-strength, 19-strand, galvanized steel wire of ⅝-inch diameter. The wire has a breaking strength of 28,100 pounds and an over-all length of 101 feet, 5 inches. A fixed ⅝-inch guy thimble is spliced in the guy at one end with a guy wire clip; the other (dead) end is provided with a 21-foot, 3-inch tail piece. The guy is fabricated with five insulators spliced in place and secured by means of ⅝-inch aluminum compression sleeves. One guy WR1 is required per antenna support and is mounted to the support at the 64-foot, 10½-inch elevation point

by means of connecting shackle and guy plates G37 and G38 and filler plate G45.

p. Guy WR2. Guy WR2 is made of seven-strand, galvanized steel wire of 5/16-inch diameter. The wire has a breaking strength of 5,350 pounds and an over-all length of 100 feet, 8 inches. A fixed 5/16-inch guy thimble is spliced into the guy at one end and secured with a three-bolt guy clamp; the other end is provided with a 16-foot tail piece. The guy is fabricated with five insulators spliced in place and secured by means of three-bolt clamps. Two guys WR2 are required per antenna support and are mounted to the tower at its 64-foot, 10½-inch elevation point with connecting shackle and guy plates G46 and G47.

q. Four-way Expansion Anchor. The four-way expansion anchor is a rustproof iron anchor. The anchor has a diameter of 10 inches when closed and an expanded area of 200 square inches. The anchor has a holding power of 20,000 pounds in sand and accommodates the 10-foot anchor rod (1-inch diameter). One four-way expansion anchor is required per antenna support and is used as the anchor for the 5/8-inch back guy.

r. Two-way Expansion Anchor. The two-way expansion anchor is a rustproof iron anchor with an 8-inch diameter when closed. The expanded anchor has an area of 100 square inches. The anchor has a holding power of 7,000 pounds in sand and accommodates the 6-foot, 5-inch anchor rod of 5/8-inch diameter. Two two-way expansion anchors are required per antenna support and are used as the anchors for the 5/16-inch side guys.

s. Anchor Rod for Guy WR1. This anchor rod is a hot-dipped galvanized steel rod, 10 feet long and 1 inch in diameter. One end of the rod is threaded with 1-inch standard right-hand thread; the other end is threaded with 1-inch standard left-hand thread. The rod is provided with one 1-inch standard-thread square nut for securing the rod to the four-way expansion anchor (*q* above). One anchor rod is used per antenna support in conjunction with the 1-inch by 12-inch turnbuckle and four-way expansion anchor for fastening the 5/8-inch back guy.

t. Anchor Rod for Guy WR2. Each anchor rod is a hot-dipped galvanized steel rod, 6 feet, 5 inches long and 5/8 inch in diameter. One end of the rod is threaded with 5/8-inch standard left-hand thread; the other end is threaded with 5/8-inch standard right-hand thread. The rod is provided with one 5/8-inch standard-thread square nut for securing the rod to the two-way expansion anchor. Two anchor rods are used per antenna support in conjunction with the 5/8-inch by 6-inch turnbuckles and the two-way expansion anchors for fastening the 5/16-inch side guys. Each anchor rod is supplied complete with thimble eye rod and turnbuckle body assembled on it.

u. Ground Rod. The ground rod is a copper-coated steel rod provided with a cone point; the rod is 8 feet long and has a ½-inch diameter. One ground rod is used per antenna support in conjunction with the ground clamp, two connecting lugs, and 6 feet of #4, seven-strand copper wire to ground the support.

v. Steel Pedestal Base. The steel pedestal base consists of four steel formed angle corner posts, four inside and four outside steel base angles, a plate steel cap (⅜ inch thick), and necessary hardware and paint. The height of the assembled steel pedestal base is 4 feet. The steel cap is 9⅝ inches square at the base and is provided with sloping sides which taper to a 5¾-inch square cap top. Each side of the cap is provided with four holes for attachment to the corner posts. The corner posts have a straight portion 4 feet, 2⅞ inches long and a bent portion at one end 3⅛ inches long. Each 2-inch face of the post is provided with two holes at each end. The outside base angle has two faces, each 3 inches high, and is 3 feet, 9¾ inches long; one face is provided with two holes at each end for attachment to a corner post. The inside base angles are 3 feet, 5¾ inches long; one bottom face is cut back at each end. Two holes are provided on each type base angle for bolting together during assembly (par. 8*b*).

Section II. INSTALLATION

6. Siting

a. If possible, locate Antenna Support AB–105A/FRC on level or evenly sloping ground. If the site is a wooded area, clear away the area, as necessary, to facilitate base and anchor installations and to provide adequate clearance for the guys. See TM 11–2617, Antenna Kit for Rhombic Transmitting Antenna, for detailed information covering the requirements for a rhombic antenna installation. Antenna Support AB–105A/FRC is designed primarily to mount a rhombic antenna; the conditions which determine a satisfactory site are governed by the antenna to be supported. Figure 4 illustrates a general layout plan showing the positions of the supports in a typical installation. A cleared level strip of 5-foot minimum width and 80-foot length is required for each support before raising.

b. Determine the locations of the end foundations by direct standard steel tape measurements along the major axis or bearing line of the antenna. To determine the locations of the side foundations, proceed as follows: Locate a stake on the major axis at the midpoint of the antenna; lay off perpendiculars on each side of the base line from this midpoint and designate this line as the minor axis; measure the corect distance to the side foundations along the minor axis. Refer to the tabular data in TM 11–2617 for support spacing along the major and minor axes.

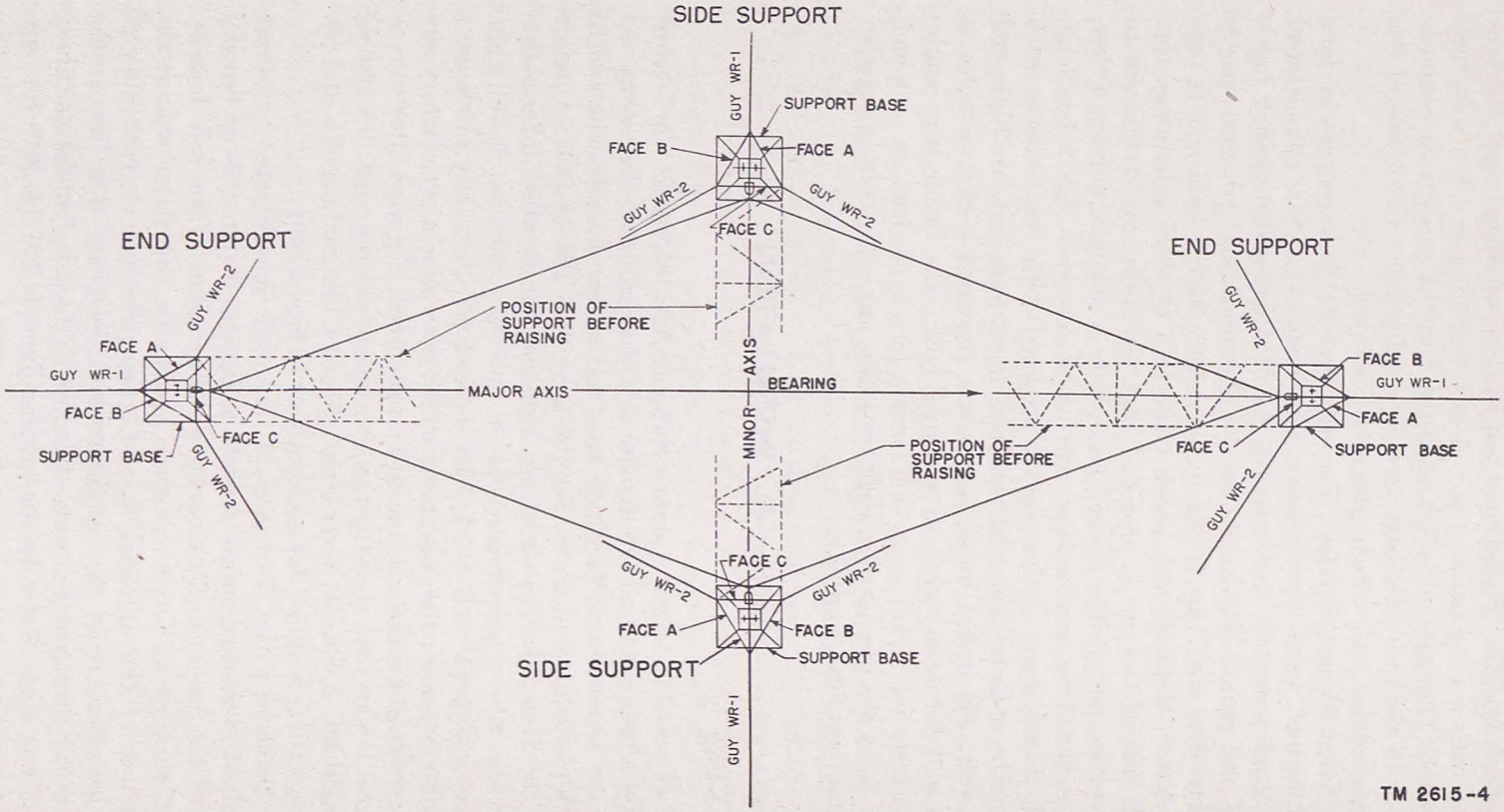


Figure 4. Typical location plan.

7. Unpacking, Uncrating, and Checking

a. Place the packing cases for each of the four antenna supports as near each erection location as is convenient.

b. Cut the steel straps around the cases and bundles.

c. Remove the nails, using a nail puller, and remove sides of the cases.

d. Antenna Support AB–105A/FRC is shipped completely disassembled into component parts. Each of the four supports (less pedestal base) is packed in two bundles and three boxes; each part is individually numbered. The pedestal base is shipped in two bundles. Segregate the various parts into piles of similar pieces, grouping them about the base location where each part will be readily accessible.

e. Inspect the parts for damage after removal from packing case; check the parts against the master packing slip or against the packaging data (par. 4).

8. Installation of Base and Anchors

Each antenna support is mounted either on a steel pedestal base (par. 5*v*) or on a concrete pier. The steel pedestal base is a prefabricated structure and is supplied as a component of Antenna Support AB–105A/FRC. Two anchor bolts of 5/8-inch diameter and 18 inches in length, threaded 3 inches and provided with one hexagonal and one jam nut, are supplied with each support and are used with the concrete pier.

a. Concrete Pier (fig. 5). The concrete pier is designed for use in normal soil capable of safely resisting a load of 4,000 pounds per square foot at the bottom of the pier. If poor foundation soil conditions exist (such as loam, marsh, etc.) the design features given below may be altered as necessary in the field. However, *the dimensions A and B (fig. 5) must be maintained to provide the necessary clearances for raising the support.*

(1) Excavate a hole approximately 4 to 5 feet deep and 3 feet in diameter.

(2) Construct the wooden forms (used when pouring the concrete) with dimensions as specified in figure 5. The foundation is 5 feet high, 2 feet square at the base, and tapers to 8 inches square at the top. The foundation top protrudes 9 inches above the ground line.

(3) Use a 1-2-4 concrete mix and work well while pouring to eliminate the possibility of voids.

(4) Use bottom plate G16 as a template to obtain the bolt locations as illustrated in figure 5.

(5) After the concrete is poured, insert into the concrete the

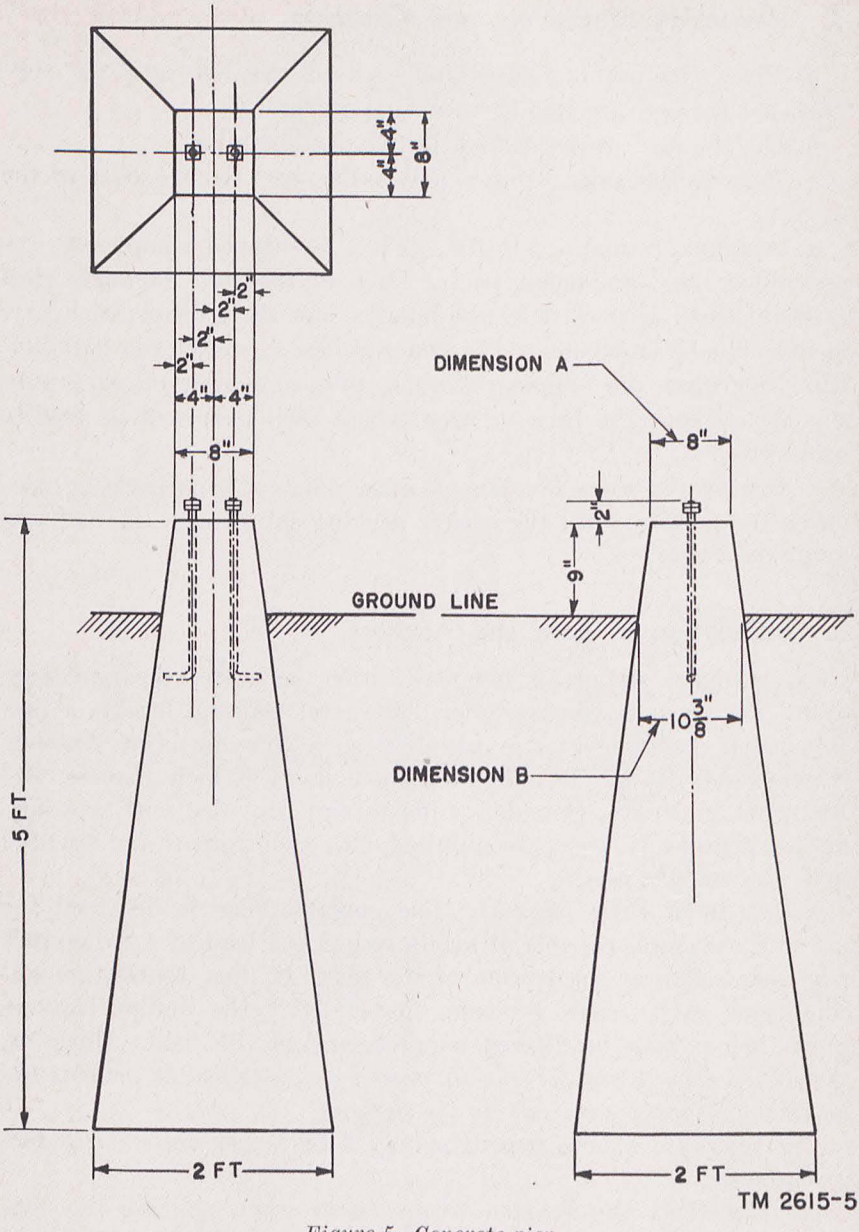


Figure 5. Concrete pier.

two anchor bolts (⅝-inch diameter by 18 inches long). Allow 2 inches of each bolt to be exposed above the top of the foundations; be sure that the bolts are vertical to the template.

(6) Tap the template lightly so that the bottom surface rests lightly on top of the concrete but not in it.

(7) Allow the concrete to set for approximately 1 hour, and provide a ½-inch chamfer around the edge.

b. Steel Pedestal Base. (1) *Assembly.* Assemble the steel pedestal base as follows at a convenient location where the ground is level:

(*a*) Place the inside and outside base angles in proper order and arrangement on the ground (fig. 6). The base angles so arranged form a square with sides 4 feet long. On each side, one inside and one outside base angle are adjacent to each other.

(*b*) Use ⅜- by 1½-inch bolts and secure the inside and outside base angles together. Make all nuts fingertight.

(*c*) Use four ⅜- by 1½-inch bolts and secure a corner post in each corner of the square formed by the base angles. Two bolts are required to bolt one face of the corner post to one base angle and another two to bolt the other face to the adjacent angle. Make all nuts fingertight.

(*d*) Fit the cap over the four corner posts so that the posts rest in the four corners of the cap.

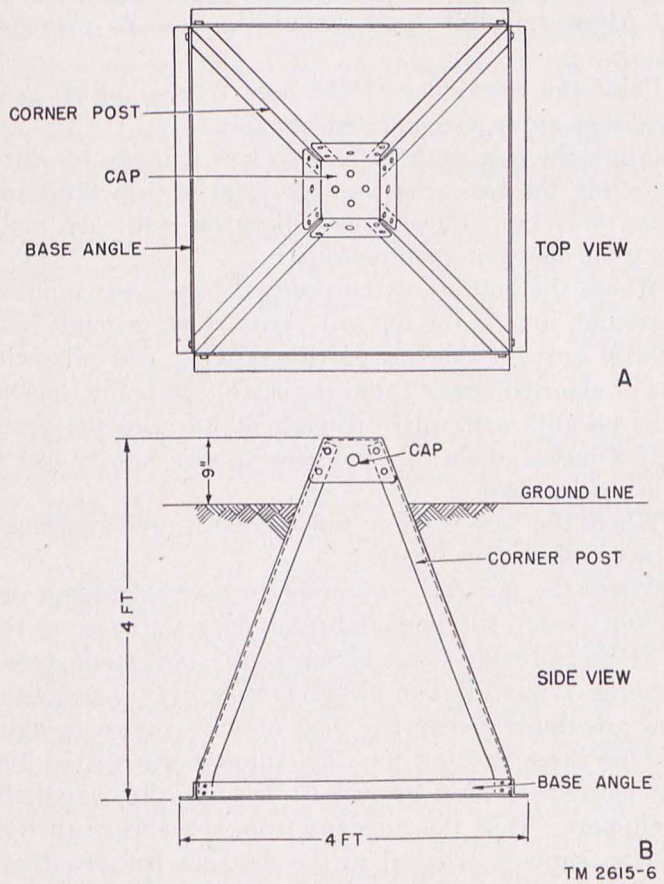


Figure 6. Steel pedestal base.

(*e*) Use 3/8- by 1½-inch bolts and secure the corner posts to the cap. Four bolts are required to secure each post to each cap corner. Make all nuts fingertight.

(*f*) When all base components are in place, line up the assembly and tighten the nuts with a wrench. Be careful not to overtighten the bolts; overtightening may either strip the threads or break the bolts.

(*g*) Place locknuts on the bolt ends and tighten with the fingers until each locknut is snug against the regular nut. Always apply the locknut with the open side out, then tighten the locknut with a wrench; turn the locknut about a ¼ turn. Maximum holding power of the locknut is obtained at a ¼ turn beyond the fingertight position.

(2) *Painting.* The entire surface of the assembled steel pedestal base, including the bolts and nuts, must be painted with two coats of the black asphalt paint provided with the base.

(*a*) Place the pedestal base on one side and paint the under side of the top cap.

(*b*) Set the base in an upright position on corner blocks or stones. Allow sufficient space under the base to provide for air drying.

(*c*) Paint the remainder of the base (corner posts, base angles, etc.), and then apply a second coat of paint.

(*d*) Allow the base to dry; the base now is ready for setting.

(3) *Setting the base.* Set the base level in firm earth to a depth of 3 feet, 3 inches. Excavating, filling, or both are required depending upon elevation requirements.

(*a*) Where the bottom of the pedestal base is set unusually high in the ground, remove the top soil (loam, dust, or mud) and replace with gravel or with the best earth available, and mix with stones or rocks of assorted sizes. Tamp the earth well before leveling. Also tamp the backfill well; place enough fill to raise the ground level to within 8 inches of the cap and over an area 8 to 10 feet in radius from the pedestal base.

(*b*) Where the base is set in low terrain, provide adequate drainage to carry off surface water.

(*c*) Where the pedestal base is set in marshy ground or in poor bearing soil (loam, silt, colloidal sand, etc.), excavate to reasonably firm earth and provide a mat of concrete, mixed stone, or rock.

c. Anchor Location and Installation. (1) *Location.* Anchor positions are illustrated in the plan of guys shown in figure 7. In general, the three anchors for each support are spaced 120° apart and are located on level ground 67 feet, ¼ inch from the center of the support. Thus the distance from the anchor to the base of the antenna support is equal to the distance between the point of guy attachment (on the support) and the base of the antenna

support; this is called a one-to-one lead. The guys, when installed and attached to the anchor, must form an angle of approximately 45° with respect to the ground level. On irregular ground where there is a difference in ground elevation between the anchor and the foundation of the support, the distance of the anchor location from the foundation must be corrected for the difference in ground elevation (fig. 7); the anchor will be located at a distance from the center of the antenna support equal to the total vertical distance between the point of guy attachment and the ground level at the anchor location. Thus, if the distance from the support base to the point of guy attachment is labeled B and if the distance C indicates the difference between the elevation at the support base and the ground level of the anchor, the distance A indicating the distance between anchor location and the center of the support equals B + C (fig. 7).

(*a*) The anchor for guy WR1 (⅝-inch diameter) always is located outside the antenna net (fig. 4). Establish an anchor line which passes through the center of the foundation and which is perpendicular to the edge parallel to face C of the antenna support. Locate the anchor for guy WR1 on this line at the distance determined in (1) above.

(*b*) The anchors for guys WR2 are located at the designated distance ((1) above) on anchor lines established 120° to the left and right of the anchor line for guy WR1.

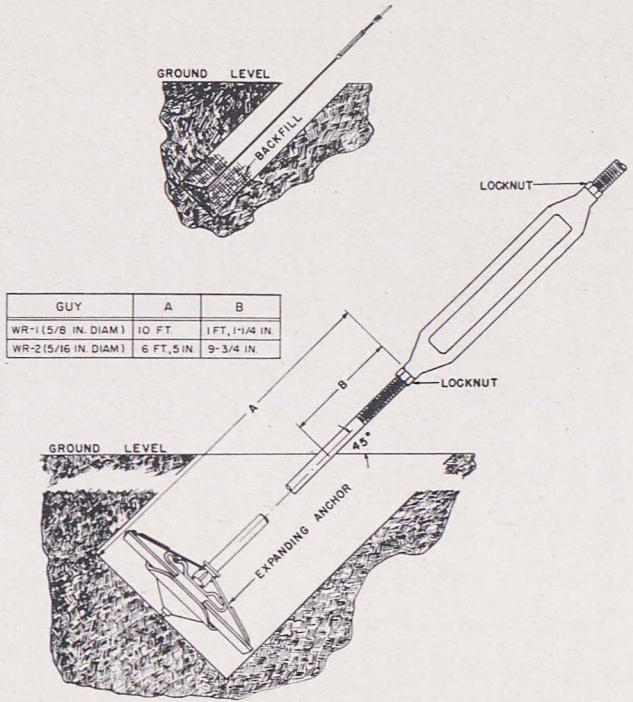
(2) *Installation.* (*a*) *Four-way expansion anchor.*

1. Bore or dig a hole (at a 45° angle with respect to the ground level) 8 feet, 10¾ inches deep for the four-way expansion anchor for guy WR1 (fig. 7). Make the hole large enough in diameter to accommodate the 10-inch unexpanded or closed anchor.

2. Assemble the 10-foot anchor rod of ½-inch diameter on the anchor. Thread the bottom nut up the anchor rod until the nut rests against the bottom plate of the anchor. Center punch or peen the threads so that the nut will not loosen when the turnbuckle is adjusted. Assemble the turnbuckle (with its thimble eye rod) on the anchor rod and secure in place with the hexagonal nuts and locknuts supplied with the turnbuckle.

3. Keep the blades of the anchor closed and drop the anchor into the hole. Approximately 1 foot, 1¼ inches of the anchor rod should extend above the ground line.

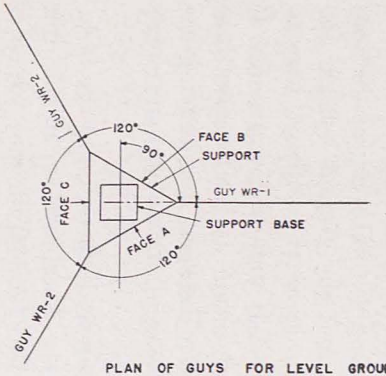
4. Use a tamping bar and expand the blades by hitting down upon the tamping block of the anchor until a thud indicates the anchor is cocked into a fully expanded position.



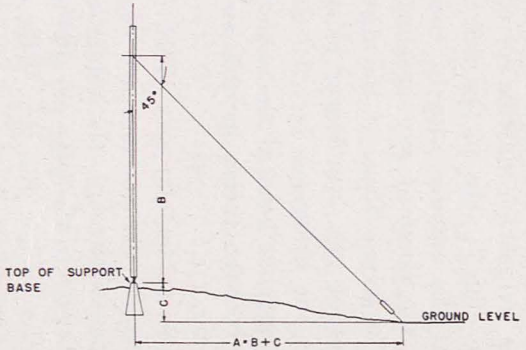
GUY	A	B
WR-1 (5/8 IN. DIAM.)	10 FT.	1 FT, 1-1/4 IN.
WR-2 (5/16 IN. DIAM.)	6 FT, 5 IN.	9-3/4 IN.

ANCHOR DETAIL

NOTE:
ON LEVEL GROUND ALL ANCHORS ARE LOCATED 67 FT, 1/4 IN. FROM CENTER OF SUPPORT BASE.



PLAN OF GUYS FOR LEVEL GROUND



ANCHOR DISTANCE — IRREGULAR GROUND

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Figure 7. Guy and anchor plan.

5. Fill the hole carefully by tamping the backfill, every few inches, thoroughly into place.

(*b*) *Two-way expansion anchor.*

1. Bore or dig a hole (at a 45° angle with respect to the ground level) 5 feet, 7¼ inches deep for each two-way expansion anchor for guy WR2. Make the hole large enough in diameter to accommodate the 8-inch unexpanded or closed anchor.

2. Assemble the 6-foot, 5-inch anchor rod (⅝-inch diameter) on the anchor and then complete the installation of the two-way expansion anchor by following the procedures of (*a*)*2* through *5* above. Approximately 9¾ inches of the anchor rod should extend above the ground line.

Note. The anchors supplied with Antenna Support AB–105A/FRC have a holding power in ordinary soil equal to the rated breaking strength of the guy strand. In solid rock, use a rock anchor; in soft ground or dry sand, use a concrete pier or similar type of anchorage.

9. Assembly of Support Sections

a. General. (1) Antenna Support AB–105A/FRC is assembled by first bolting the various components into sections and then by connecting the sections together in the correct order and position. For example, section C2 is connected to section C1, and section C3 then is connected to the open end of section C2. All sections are loose-bolted; none of the bolts is tightened until all sections are assembled and all bolts are inserted into place.

(2) All bolts used on the supporting posts must be inserted from the inside of the support and a lockwasher and nut placed on the external surface of whatever piece they bear against. Bolts of the correct length must be used for each connection; bolt sizes are indicated on the various section assembly illustrations. Unless otherwise specified, all bolts are ⅜ inch by 1 inch.

(3) Supporting posts G1 through G6 are identified by labels at the bottom end of each post.

(4) Assembly of the sections is facilitated if they are laid out on level ground and blocked to provide access to the bolts near the ground.

b. Assembly of Section C1 (fig. 9). (1) The following component items are used to assemble section C1 (remove them from the wooden boxes and place them in a convenient location where they will be readily available during assembly of the section):

3 supporting posts G1
3 splice plates G7
6 diagonal braces G9
3 horizontal braces G10
1 step, right-hand, G12
1 bottom assembly G14
2 bottom plates G15
1 shouldered bolt, 3/4 inch by 6 3/4 inch with brass cotter pin
1 bottom plate G16
3 base channels G17
5 bolts, 3/8 inch by 3/4 inch
51 bolts, 3/8 inch by 1 inch
6 bolts, 3/8 inch by 1 1/4 inch
62 lockwashers for bolts of 3/8-inch diameter
2 pipe spacers
1 bolt, 3/4 inch by 1 5/8 inch
2 connector lugs for ground wire
2 lockwashers for bolts of 1/4-inch diameter
2 stove bolts, roundhead, 1/4 inch by 3/4 inch
2 washers, 1/4 inch, for 1/4-inch bolts

(2) Select three supporting posts marked G1 (fig. 9). Each supporting post bears an identification mark at its base end (*a*(3) above).

(3) Place two supporting posts on the ground with their angled edges facing out. Designate the left post G1L and the right post G1R; the completed assembly of this side will be considered face A.

(4) Hold a base channel G17 so that the two flanges face out and the flange provided with two holes faces down. Place the bracing channel in this position against the supporting posts G1L and G1R, so that the bottom holes of the supporting posts match the end holes in the face of the channels used. Insert a 3/8-inch by 1-inch bolt through each of the bottom holes of supporting posts G1L and G1R and through the corresponding end holes of the channel. Place lockwashers on the bolts and thread the nuts fingertight.

(5) Insert a 3/8-inch by 3/4-inch bolt through the bottom end of a diagonal brace G9 and through the third hole from the bottom on supporting post G1L. Be sure that the angled edge of the diagonal faces in. Secure the diagonal to the inside of the post.

(6) Insert a 3/8-inch by 1-inch bolt through the free end of the first diagonal (connected to supporting post G1L ((5) above) and through the first brace hole in supporting post G1R (figs. 8 and 9)). Place another diagonal brace G9 on this bolt on the outside of the supporting post; be sure that the angled edge of the diagonal faces out. Insert a lockwasher on the bolt and thread a nut fingertight. This second diagonal brace is bolted to the outside of the supporting posts.

Note. Secure the diagonal braces to the supporting posts so that the two ends of one brace are bolted first to the inside of the supporting posts and the two ends of the next brace are bolted to the outside of the same supporting posts and so on, alternately. As a result, each bolt that carries two diagonal braces will have an end of one brace outside and one end of the

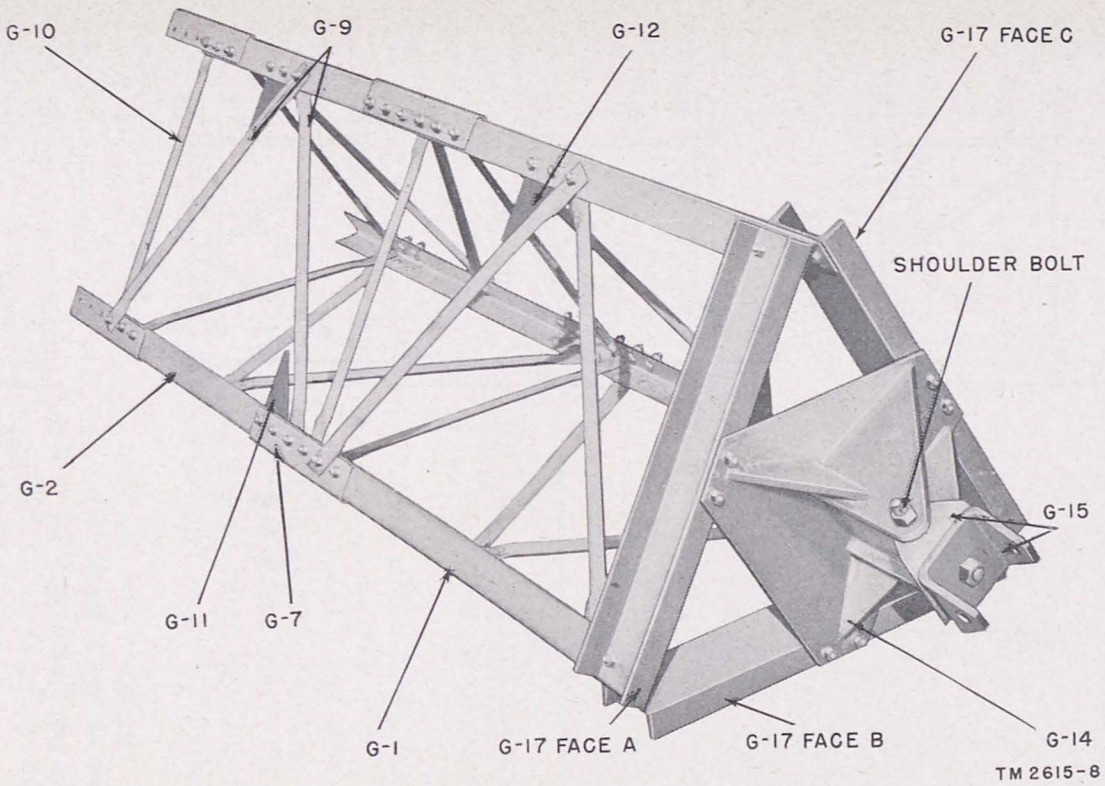
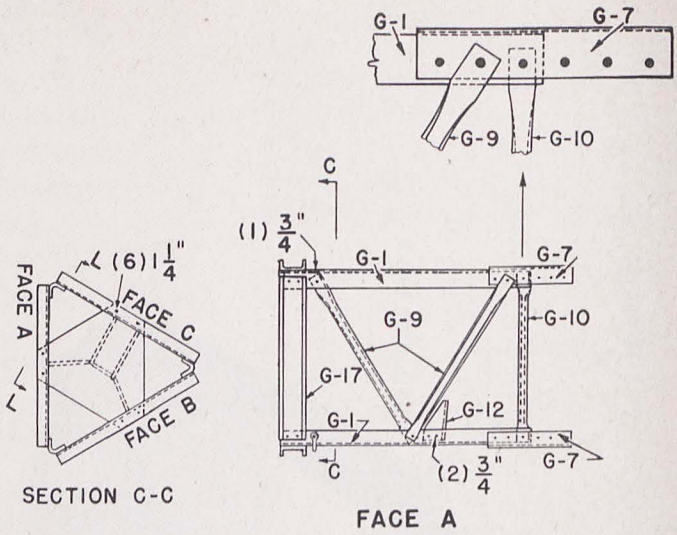
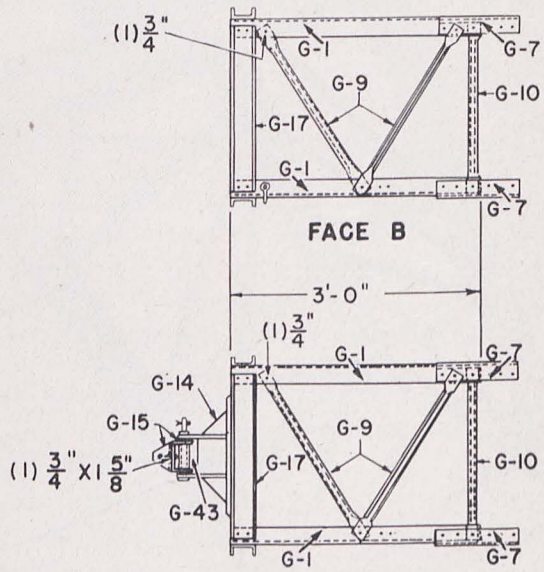
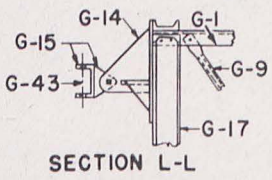


Figure 8. Section C1.





NOTE:
EXCEPT AS NOTED, ALL BOLTS ARE $\frac{3}{8}$" DIAM BY 1" LONG.



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SECTION C1

Figure 9. Section C1, showing assembly of faces A, B, and C.

other brace inside the supporting post involved. *Each diagonal brace inside the supporting posts will have its angled edge facing in; each brace outside the supporting post will have its angled edge facing out.*

(7) Locate a right-hand step G12 (figs. 8 and 9) so that its two holes line up with the two holes on supporting post G1R immediately above the hole to which the diagonal braces are secured ((6) above). The bent portion of the step fits inside the post and the triangular portion points toward supporting post G1L. Secure the step in place fingertight with 3/8-inch by 3/4-inch bolts.

(8) Select a splice plate G7 and a horizontal brace G10. Insert a 3/8-inch by 1-inch bolt through the hole on one end of the G10 and then through the top hole of G1L; the horizontal brace (angled edge facing in) is bolted to the inside of the supporting posts. Position a splice plate G7 on post G1L so that the three bottom holes of each face of the splice plate align with the three top holes of the supporting post. The splice plate extends 6 inches above the end of the post and provides three holes for attachment to the next supporting post (*c* below). Continue the 3/8-inch by 1-inch bolt through the corresponding hole on the splice plate; place a lockwasher on the bolt and thread the nut fingertight.

(9) Insert a 3/8-inch by 1-inch bolt through the hole directly below the top hole of post G1L ((8) above), through the splice plate, and secure the free end of the second diagonal brace G9 in place on the outside of the splice plate.

(10) Insert a 3/8-inch by 1-inch bolt through supporting post G1L and through the bottom hole of the splice plates; thread the nut fingertight.

(11) Select another splice plate G7 and position it on supporting post G1R so that the three bottom holes of the plate align with the three top holes of the supporting post. Insert a bolt through the free end of the horizontal brace G10, through the top hole of supporting post G1R, and through the aligned hole of splice plate G7. Thread a nut fingertight. Use 3/8-inch by 1-inch bolts through the two bottom holes of the splice plate and secure it fingertight to supporting post G1R.

(12) Position the third supporting post ((2) above) for connection to supporting posts G1L and G1R. Designate this post G1C. With the exception of the connection for right-hand step G12, the remaining two faces (designated B and C) of the support are assembled as described for face A. Assemble faces B and C in the manner described in (3) through (11) above. Steps are not installed on faces B and C. On face C, make the first diagonal brace connection to supporting post G1R; on face B, make the first diagonal brace connection to supporting post G1C.

(13) Locate bottom assembly G14 against the bottom of section

C1 so that the two holes on each of the shorter sides of the assembly line up with the two holes on the bottom flange of each of the base channels G17. Insert six 3/8-inch by 1¼-inch bolts through the aligned holes in the bottom channel flanges and the plate (fig. 8) and secure the bottom assembly in place.

(14) Assemble the two bottom plates G15 by placing the bottom faces of the plates adjacent to each other and oriented so that the planes of the vertical faces are perpendicular to each other (fig. 8). Align the bottom hole in each plate, and then insert a ¾- by 1⅝-inch bolt. Thread the nut on the bolt fingertight, but be sure that the nut clears the end of the bolt. Locate the assembly on a block so that the head of the bolt is supported. Use a heavy hammer and peen the bolt end along the nut to insure a lock fit and to obtain a swivel joint between the two plates.

(15) Insert a bottom plate G15 between the bottom assembly (G14) hinge plates, and align the holes (fig. 9, section L–L). Insert a ¾- by 6¾-inch bolt through the hole in one hinge plate and through the aligned hole of plate G15. Continue the bolt through pipe spacer G43 and then through the opposite aligned holes in plate G15 and the other hinge plate. Thread a nut fingertight on the end of this bolt.

c. Assembly of Section C2 (fig. 10). (1) The following components are required for the assembly of section C2 (locate the components so that they will be readily accessible during the assembly of the section):

3 supporting posts G2
3 splice plates G7
6 diagonal braces G9
3 horizontal braces G10
1 step, left-hand, G11
1 step, right-hand, G12
2 bolts, 3/8 inch by ¾ inch
36 bolts, 3/8 inch by 1 inch
3 bolts, 3/8 inch by 1¼ inch
41 standard lockwashers for bolts of 3/8-inch diameter

(2) Place two supporting posts G2 on the ground (*b*(3) above). Designate the left post G2L, the right post G2R, and the completely assembled side as face A.

(3) Insert a 3/8- by 1¼-inch bolt through one end of a horizontal brace G10. The horizontal brace is to be secured inside the supporting post, its angled edge faces in.

(4) Position a splice plate G7 on supporting post G2L so that the three bottom holes of each face of the splice plate align with the three top holes of the supporting post. The splice plate extends 6 inches above the top of the post and provides three holes for attachment to the next supporting post.

(5) Continue the bolt through horizontal brace G10 ((3) above), through the top hole of supporting post G2L, and through the aligned hole in the splice plate. Place a diagonal brace G9 over the

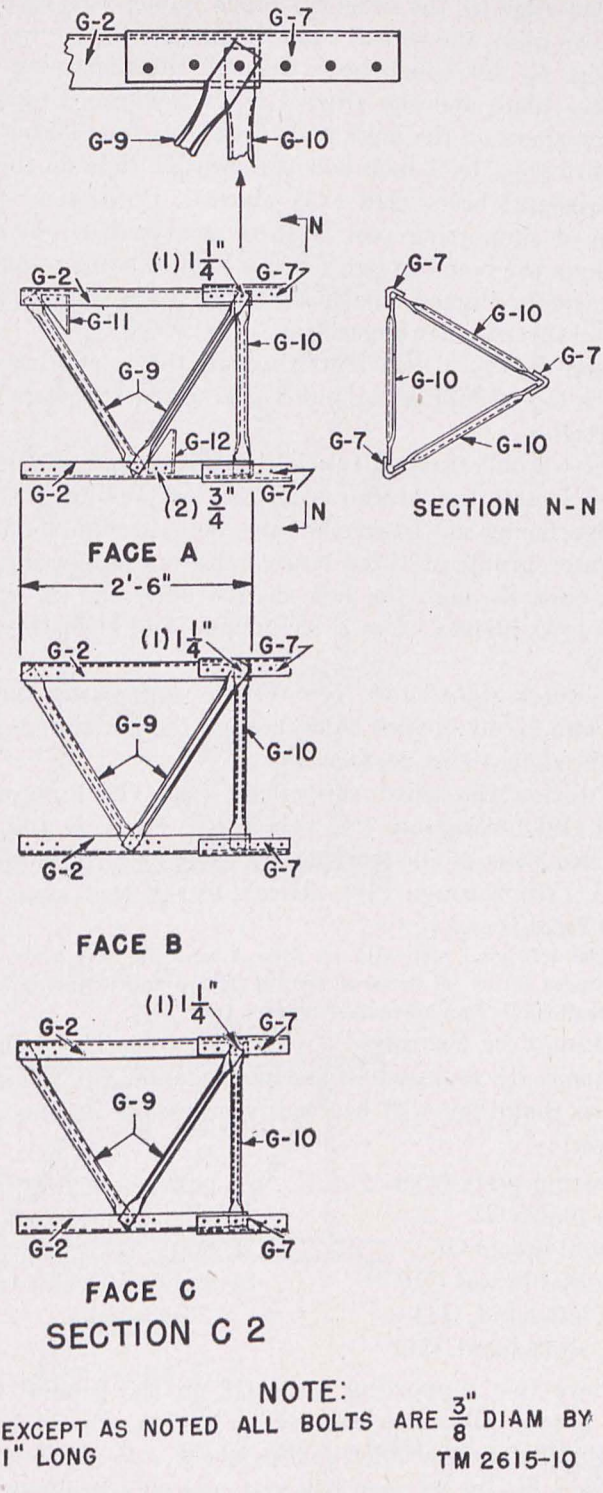


Figure 10. Section C2, assembly details.

bolt (angled edge of the diagonal brace facing out); then place a lockwasher in place and thread a nut fingertight.

(6) Insert 3/8- by 1-inch bolts through the remaining two holes in the splice plate and the aligned holes in supporting post G2L; place lockwashers on the bolts and thread the nuts fingertight.

(7) Insert a 3/8- by 1-inch bolt through the hole on the open end of the horizontal brace G10 ((3) above). Position a splice plate to the top of supporting post G2R as described in (4) above, and then continue the bolt through the top hole of supporting post G2R and the correctly aligned hole on the splice plate. Place a lockwasher in place and thread a nut fingertight.

(8) Insert 3/8- by 1-inch bolts through the remaining two splice holes at the top of supporting post G2R; use lockwashers and thread nut fingertight.

(9) Insert a bolt through the hole at one end of another diagonal brace G9; install the brace inside the supporting posts with its angled edge facing in. Insert the same bolt through the bottom hole of the center group of three brace holes on supporting post G2R (fig. 10), then through the hole on the open end of the diagonal brace G9 ((5) above). Use a lockwasher and then thread the nut fingertight.

(10) Connect right-hand step G12 to supporting post G2R by means of two 3/8- by 3/4-inch bolts through the remaining center brace holes (*b*(7) above) (fig. 10, face A).

(11) Position the third supporting post G2 for connection to G2R and G2L; designate this post G2C. Faces B and C (the remaining two faces of the section) are assembled in the same manner as face A ((3) through (10) above), except that steps are not installed in faces B and C.

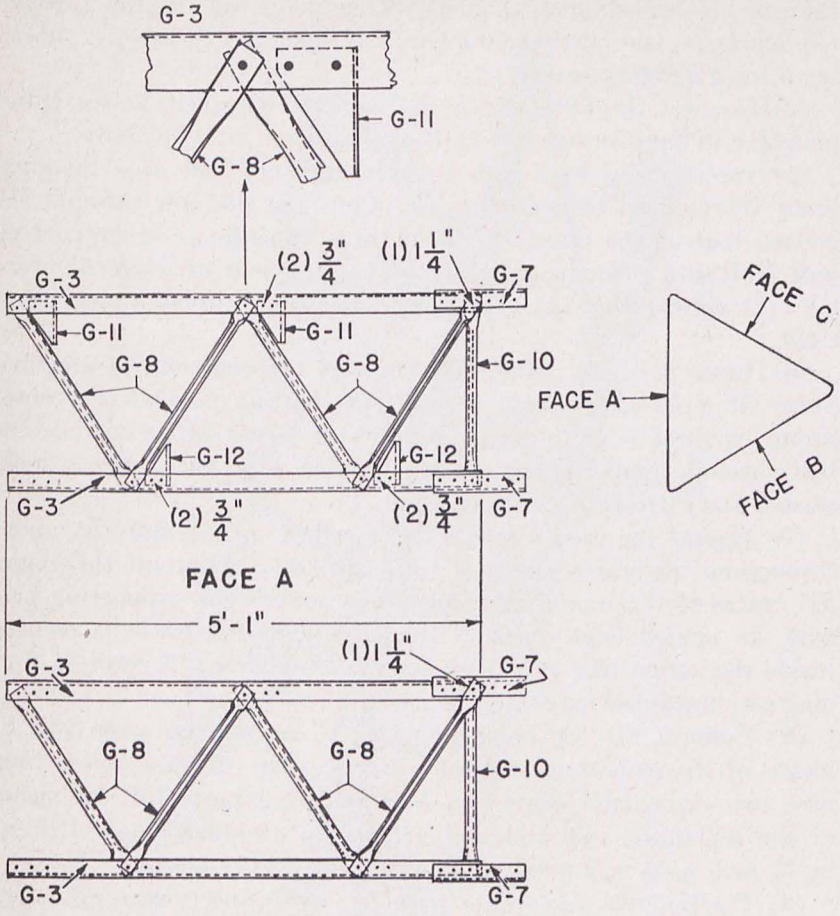
Note. The left-hand step G11 on face A and the free ends of the lower diagonal braces G9 on all faces of section C2 are bolted during final assembly of all the sections into an assembled support (par. 10*f*).

d. Assembly of Section C3 (fig. 11). (1) The following component items are required to assemble section C3 (locate the components so that they will be readily accessible during assembly of the section):

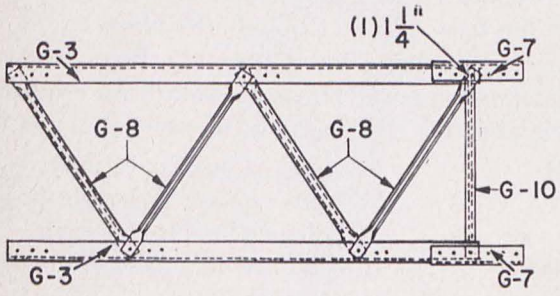
3 supporting posts G3
3 splice plates G7
12 diagonal braces G8
3 horizontal braces G10
2 steps, left-hand, G11
2 steps, right-hand, G12
6 bolts, 3/8 inch by 3/4 inch
42 bolts, 3/8 inch by 1 inch
3 bolts, 3/8 inch by 1 1/4 inch
51 standard lockwashers for 3/8-inch bolts

(2) Place two supporting posts G3 on the ground as described in *b*(3) above. Designate the left post G3L, the right post G3R, and the completely assembled side as face A.

(3) Use a 3/8- by 1 1/4-inch bolt and connect a horizontal brace G10 (angled edge in), a splice plate G7, and a diagonal brace G8 through



FACE B



FACE C

SECTION C 3

NOTE:

EXCEPT AS NOTED, ALL BOLTS ARE $\frac{3}{8}$" DIAM BY 1" LONG.

TM 2615-11

Figure 11. Section C3, assembly details.

the top hole of supporting post G3L as described in *c*(4) through (7) above for supporting post G2L. (Diagonal brace G8 is substituted for diagonal brace G9).

(4) Connect the open end of horizontal brace G10 and a splice plate G7 to supporting post G3R as described in *c*(7) above.

(5) Insert a 3/8- by 1-inch bolt through one end of a diagonal brace G8 (angled edge facing in). Continue the bolt through the bottom hole of the upper group of three brace holes on supporting post G3R and through the hole on the open end of diagonal brace G8 ((3) above) (fig. 11). Use a lockwasher and thread a nut fingertight.

(6) Insert a 3/8- by 1-inch bolt through the open end of diagonal brace G8 ((5) above) and through the bottom hole of the center group of three brace holes on supporting post G3L. Continue the bolt through another diagonal G8 (angled edge out). Use a lockwasher and thread the nut fingertight.

(7) Repeat the same operations described in (5) and (6) above throughout the entire length of G3R and G3L. Alternate the diagonal braces so that one diagonal brace is outside the supporting post with its angled edge out and the next diagonal brace is secured inside the supporting post with its angled edge in. A total of four diagonal braces are located on face A.

(8) Connect the left-hand step G11 to supporting post G3L by means of the remaining two holes in the group of brace holes. Connect two right-hand steps G12 to supporting post G3R by means of the remaining two holes in each group of brace holes. Use 3/8- by 3/4-inch bolts and proceed as described in *b*(7) above.

(9) Position the remaining post G3 for connection to G3L and G3R. Designate this post G3C. With the exception of steps G11 and G12 which are not installed on these faces of the section, assemble the remaining two faces (designated faces B and C) in the same manner described for face A ((3) through (8) above).

e. Assembly of Section C4 (figs. 12 and 13). (1) Four sections C4 are required per antenna support. Have the following required components readily available for the assembly of each section C4:

3 supporting posts G4	14 bolts, 3/8 inch by 3/4 inch
3 splice plates G7	54 bolts, 3/8 inch by 1 inch
24 diagonal braces G8	3 bolts, 3/8 inch by 1 1/4 inch
3 horizontal braces G10	71 standard lockwashers for 3/8-inch bolts
4 steps, left-hand, G11	
4 steps, right-hand, G12	

(2) Use three supporting posts G4 and assemble each section C4 in the same manner described for section C3 (*d* above). Each section C4 is 10 feet long and requires the installation of eight diagonal braces G8 on each face and four left-hand steps and four right-hand steps on face A; section C3, however, is only 5 feet, 1 inch long and

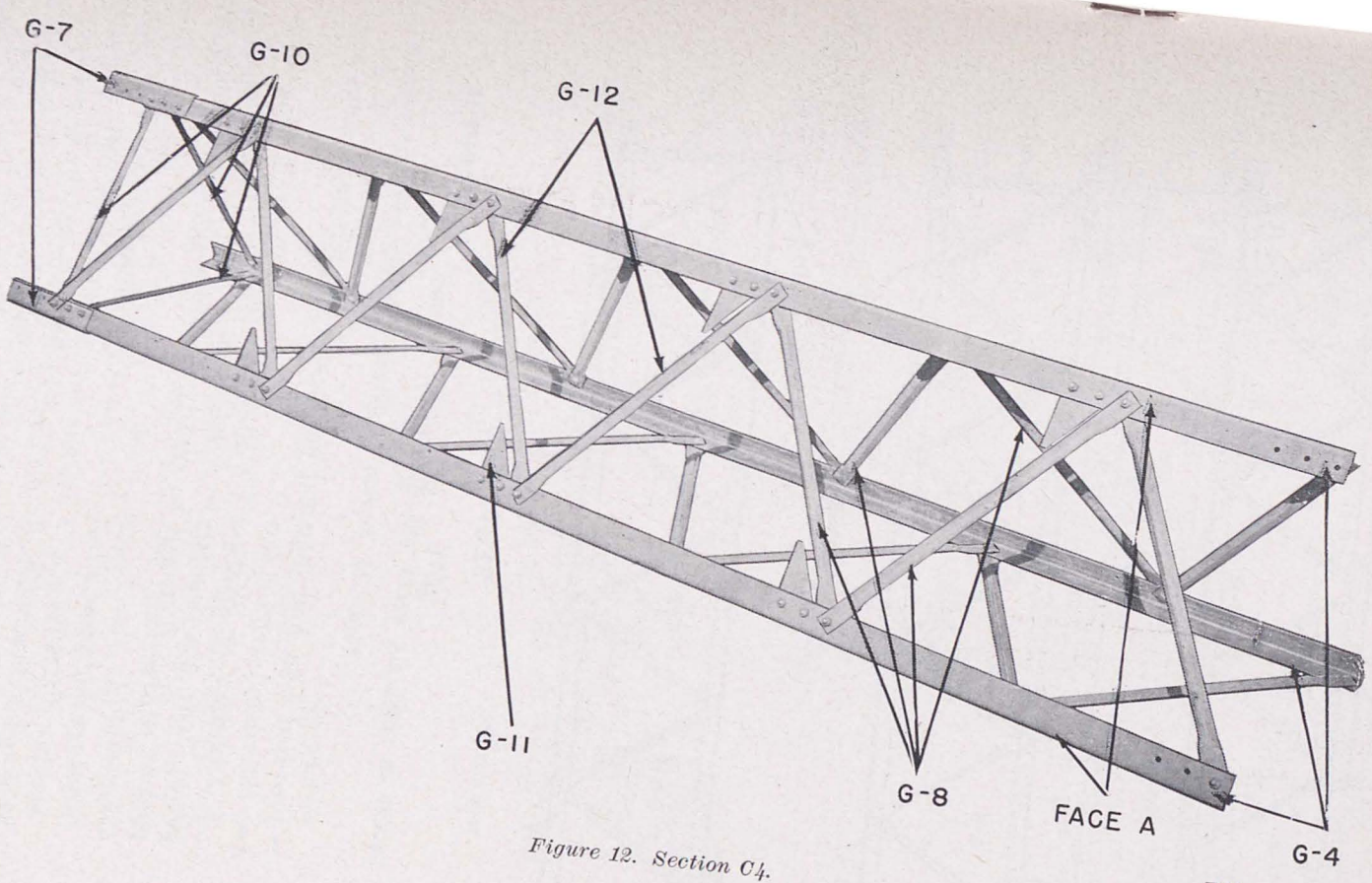


Figure 12. Section C4.

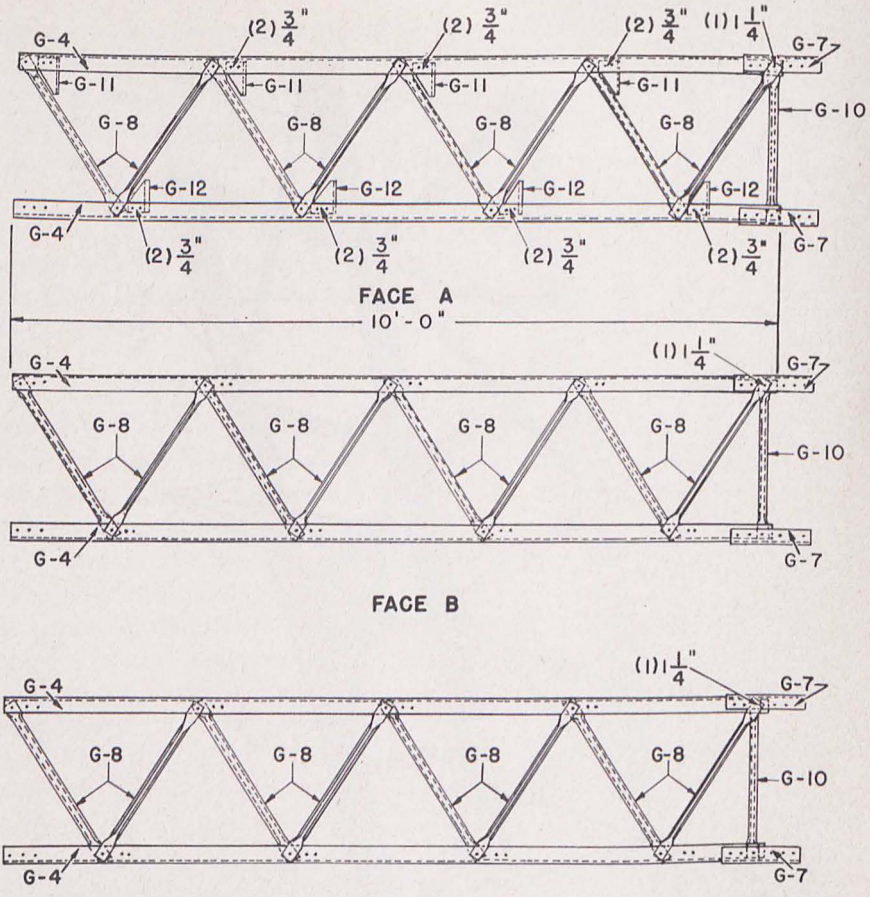


Figure 13. Section C4, assembly details.

is provided with four diagonal braces and two left-hand steps and two right-hand steps on face A.

f. Assembly of Section C5 (fig. 14). (1) The following component items are required to assemble section C5 (locate the components so that they will be readily accessible during assembly of the section):

3 supporting posts G4
3 splice plates G7
24 diagonal braces G8
4 steps, left-hand, G11
4 steps, right-hand, G12
1 horizontal brace G18
1 horizontal brace G19
1 horizontal brace G20
1 antenna plate G21
14 bolts, 3/8 inch by 3/4 inch
55 bolts, 3/8 inch by 1 inch
7 bolts, 3/8 inch by 1 1/4 inch
76 standard lockwashers for 3/8-inch bolts

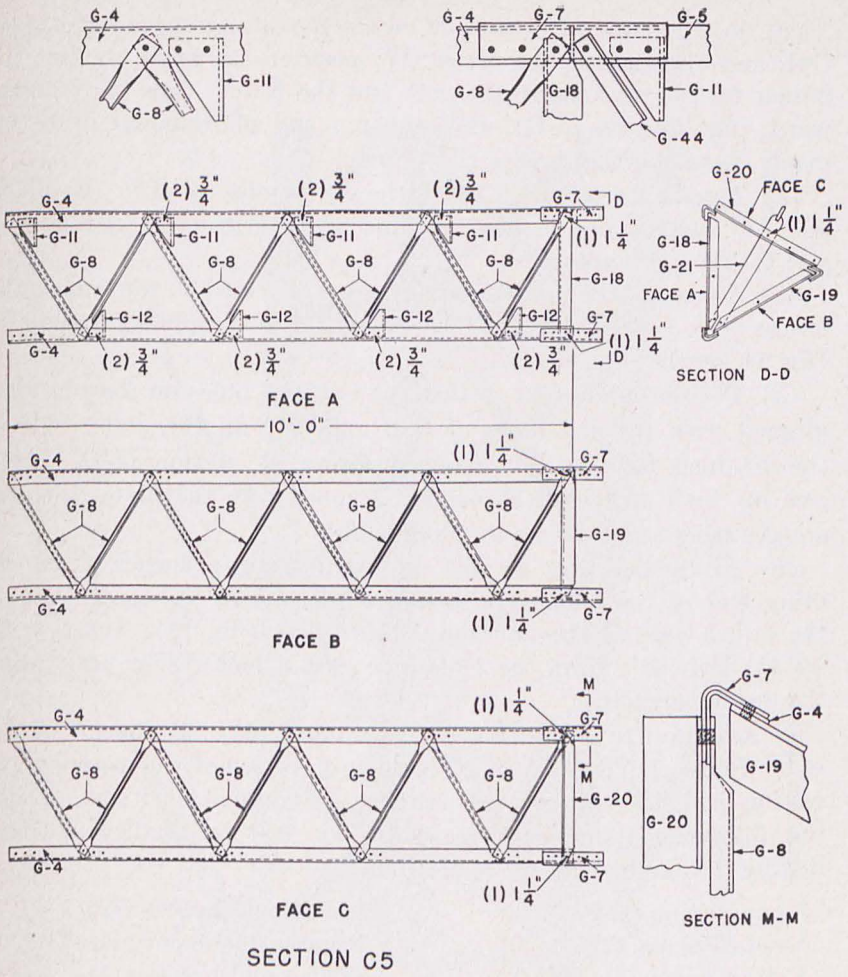


Figure 14. Section C5, assembly details.

(2) The procedure for assembling and bolting the various components of section C5 is the same as that described for sections C3 and C4. Section C5, however, substitutes top horizontal braces G18, G19, and G20 on faces A, B, and C, respectively, for horizontal brace G10 used on sections C3 and C4. In addition, the assembly of section C5 also includes the installation of plate G21 ((4) below).

(*a*) Figure 14, section D–D, illustrates the position and assembly of horizontal braces G18, G19, and G20. Bolt braces G18 and G19 on faces A and B respectively *inside* supporting posts G4; position the braces so that each 2-inch side bears against the post and each 2½-inch side faces downward.

(*b*) Bolt horizontal brace G20 on the outside of supporting posts G4L and G4C and splice plates G7; position the brace so that the 2-inch face bears against the post and the 3-inch face faces downward (fig. 14, sec. D–D). Bolt the top end of diagonal brace G8 *inside* the supporting post at this point.

(3) Assemble section C5 (with the exceptions noted in (2) above and (4) below) in the same manner as described for sections C3 and C4 (*d* and *e* above).

(4) Antenna attachment plate G21 is connected to top horizontal braces G18, G19, and G20 after section C5 is completely assembled (fig. 14, sec. D–D).

(*a*) Position plate G21 so that the two end holes on the plate are aligned with the end holes of G18 and G19 on the under side of the 2½-inch faces as illustrated in figure 14, section D–D. Insert two ⅜- by 1-inch bolts through the holes from the plate side; use a lockwasher and thread a nut fingertight.

(*b*) Align the hole located approximately 4 inches from the other end of the antenna attachment plate with the center hole in the 3-inch side of the horizontal brace G20 (fig. 15). Insert a ⅜- by 1¼-inch bolt from the plate side; use a lockwasher and thread the nut fingertight.

g. Assembly of Section C6 (figs. 15 and 16). Section C6 of Antenna Support AB–105A/FRC is the guy section of the support; this section includes the greatest number of component items. Locate the following components so that they will be readily available during the assembly of the section:

3 supporting posts G5
3 splice plates G7
5 diagonal braces G9
2 steps, left-hand, G11
2 steps, right-hand, G12
1 horizontal brace G27
1 horizontal brace G28
1 horizontal brace G29
1 antenna attachment plate G30
2 antenna attachment plates G31
1 horizontal brace G22
1 horizontal brace G23
1 horizontal brace G24
2 diagonal braces G25
1 guy attachment plate G38
6 diagonal braces G44
2 guy attachment plates G46
2 guy attachment plates G47
1 filler plate G45
1 gusset plate G32
2 gusset plates G36
1 guy attachment plate G37
6 bolts, ⅜ inch by ¾ inch
83 bolts, ⅜ inch by 1 inch
22 bolts, ⅜ inch by 1¼ inch
5 bolts, ⅜ inch by 1½ inch
116 standard lockwashers for ⅜-inch bolts

(1) *Face A.* (*a*) Locate on the ground two supporting posts G5 as described for the other sections (*c* through *f* above) and designate the left supporting post G5L and the right supporting post G5R. This completely assembled side is designated face A.

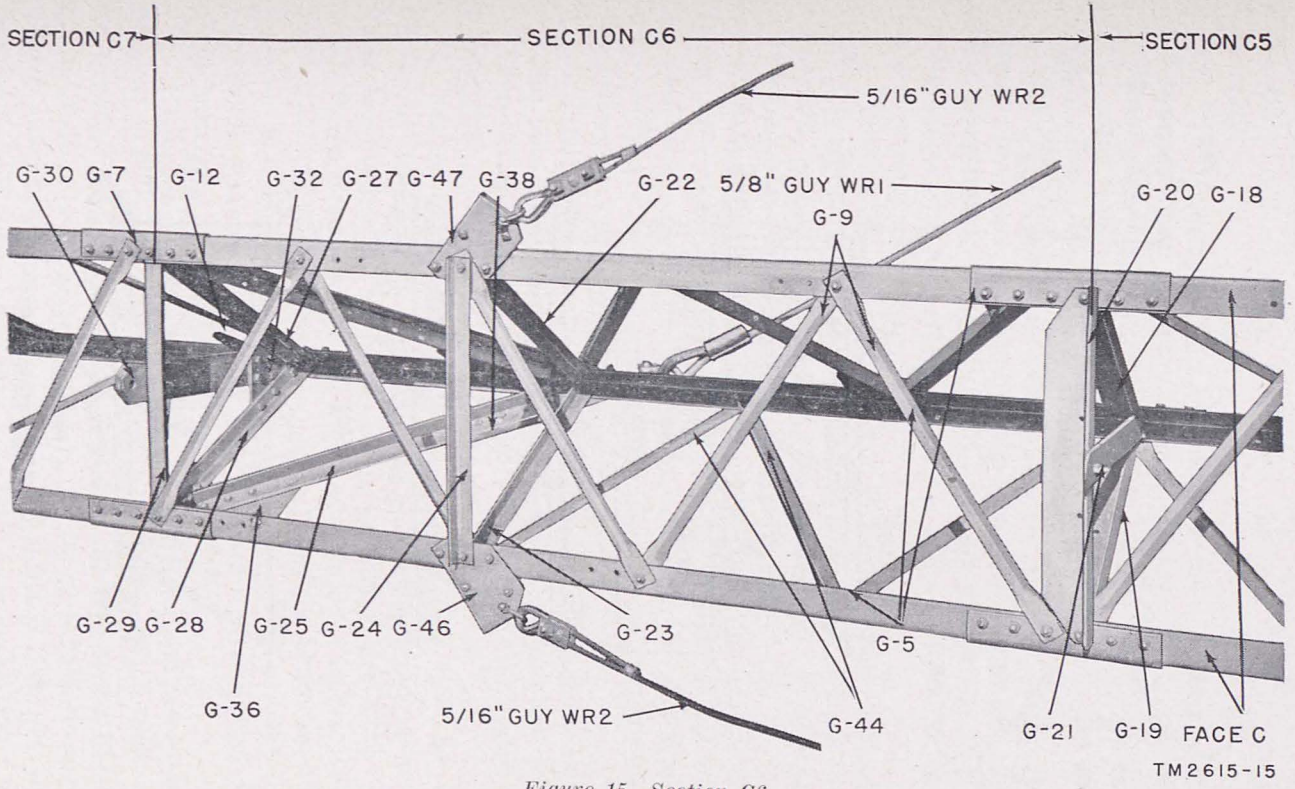
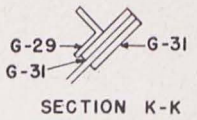
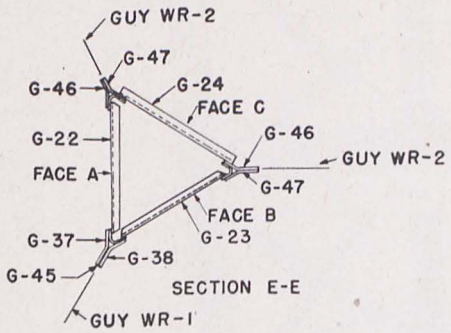


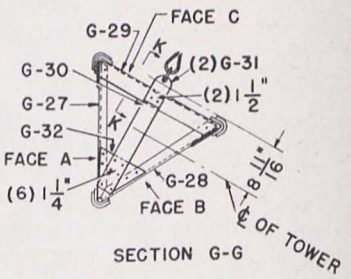
Figure 15. Section C6.



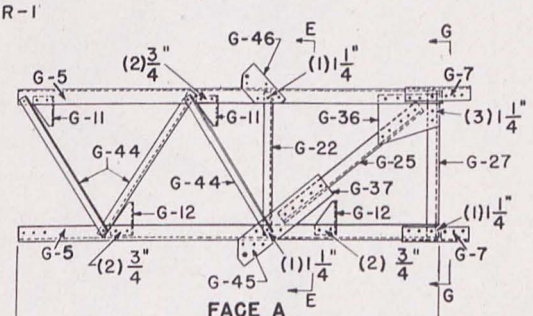
SECTION K-K



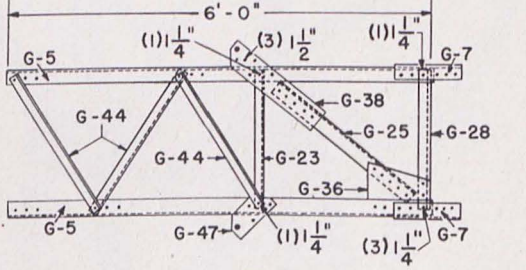
SECTION E-E



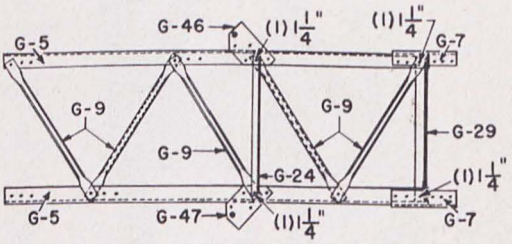
SECTION G-G



FACE A



FACE B



FACE C

SECTION C6

NOTE:

EXCEPT AS NOTED, ALL BOLTS ARE 3/8" DIAM BY 1" LONG.

TM 2615-16

Figure 16. Section C6, assembly details.

(*b*) Begin assembly of face A (fig. 16) by locating horizontal brace G27 so that the face having three holes in one end rests against the inside face of supporting post G5L with the end hole of the brace aligned with the top hole of post G5L. Align the hole on the other end of brace G27 with the end hole of supporting post G5R.

(*c*) Insert a gusset plate G36 between the supporting post G5L and the horizontal brace G27 so that the five holes along one edge of plate G36 are aligned with the top five holes of supporting post G5L; align the three holes along the other edge of the plate with the holes punched in horizontal brace G27 (fig. 16).

(*d*) Locate splice plate G7 on supporting post G5L so that the bottom three holes in the splice plate are aligned with the top three holes of post G5L. The splice plate extends approximately 3 inches above supporting post G5L. Position a splice plate G7 in the same manner on supporting post G5R.

(*e*) Insert a 3/8- by 1¼-inch bolt through the end hole of horizontal brace G27 and the respective previously aligned holes of plate G36, post G5L, and splice plate G7 (*c*) and (*d*) above). Use a lockwasher and then thread a nut fingertight.

(*f*) Secure plate G36 to supporting post G5L and horizontal brace G27 by means of 3/8- by 1-inch bolts; two additional bolts are required to secure the plate to horizontal brace G27 and four additional bolts are required to secure the plate to supporting post G5L. Use lockwashers and thread all nuts fingertight.

(*g*) Insert a 3/8- by 1¼-inch bolt through the top hole of supporting post G5R, the aligned splice plate hole, and the free end of brace G27. Place lockwasher on the bolt and thread a nut fingertight.

(*h*) Secure the splice plate to supporting post G5R by means of 3/8- by 1-inch bolts inserted through the remaining two holes. Place lockwashers on all bolts and thread nuts fingertight.

(*i*) Select a horizontal brace G22 and position it on the inside of posts G5L and G5R so that the end holes of the brace are aligned with the middle hole of the top group of three brace holes on the supporting posts (fig. 16, face A). Be sure that the other flange of the horizontal brace faces up.

(*j*) Position a side guy plate G46 in a diagonal position extending outward from and over post G5L so that the three holes along the cut-back edge of the plate align with the supporting post's top group of three brace holes. Insert 3/8- by 1¼-inch bolts through the aligned holes and secure together horizontal brace G22, guy attachment plate G46, and supporting post G5L. Use lockwashers on all bolts and thread all nuts fingertight.

(*k*) Lay the long back guy plate G37 diagonally across the supporting post G5R so that the second group of three holes from the

cut-back end of the plate are aligned with the post's middle group of three brace holes; the bent section of the plate G37 must face up. Align the end hole of a diagonal brace G44 (over the back guy plate) with the center hole of the group of three brace holes. Be sure that the top flange of brace G44 faces the top of face A. Insert a 3/8- by 1¼-inch bolt through the aligned holes of brace G22, post G5R, plate G37, and brace G44; use a lockwasher and thread a nut fingertight.

(*l*) Continue to secure plate G37 to supporting post G5R by inserting 3/8- by 1-inch bolts through the remaining aligned holes; use lockwashers and thread nuts fingertight.

(*m*) Position a diagonal brace G25 between plates G36 and G37; align the five holes at each end of the brace with the free five holes in each of the plates (fig. 16); be sure that the remaining diagonal brace flange faces the top end of the section. Insert 3/8- by 1-inch bolts from the brace side of the connection to the plates through all existing holes. Use lockwashers on all bolts and thread nuts fingertight.

(*n*) Align the end hole on the free end of diagonal brace G44 ((*k*) above) with the bottom hole of the second group of three braces holes on supporting post G5L. Align the end hole of another brace G44 on post G5L in the same manner; position this brace inside the supporting post with the remaining brace flange facing the top of the section. Insert a 3/8- by 1-inch bolt from the bottom through brace G44, post G5L, and then through the first brace G44. Use a lockwasher and thread the nut fingertight.

(*o*) Repeat the procedures given in (*n*) above until the installation of diagonal braces on face A is completed. Remember that diagonal braces G44 must alternate in installation so that one brace, at any given point on the supporting post, is inside and the other brace is outside of the supporting post.

(*p*) Secure left-hand steps G11 to supporting post G5L and right-hand steps G12 to supporting post G5R (*b*(7) above). Use the two top holes of each group of brace holes. Use 3/8- by 3/4-inch bolts and lockwashers and thread nuts fingertight.

(*q*) Locate the remaining supporting post G5 so that it can be readily assembled to supporting posts G5L and G5R. Designate this post G5C. Supporting posts G5L and G5C, when assembled, constitute the leg angles for face C; supporting posts G5C and G5R, when assembled, form the leg angles for face B.

(2) *Face B.* Assemble face B in the same manner described for face A ((1)(*b*) through (*o*) above) with the following exceptions:

(*a*) Do not install any steps on face B.

(*b*) The direction of installation of diagonal braces on the top panel of face A is from left to right (fig. 16); the direction of

installation of diagonal braces on the top panel of face B is from right to left. (Panel points for diagonal braces are the bottom holes of each group of three brace holes.)

(*c*) Use horizontal brace G28 instead of horizontal brace G27 ((1)(*b*) above).

(*d*) Use horizontal brace G23 instead of horizontal brace G22 ((1)(*i*) above).

(*e*) Use guy attachment plate G47 instead of plate G46 ((1)(*j*) above) (fig. 16). Also, plate G47 is secured to supporting post G5R.

(*f*) Use long guy attachment plate G38 instead of guy attachment plate G37 ((1)(*k*) above).

(3) *Face C.* (*a*) Position horizontal brace G29 inside supporting posts G5C and G5L, and align the end holes of the brace with the posts' top holes; be certain that the brace flange provided with the two center punched holes faces the top of section C6.

Note. Section C7 need not be installed on the *end* supports; however, always secure splice plates G7 on sections C6 which are to be used as part of the *side* antenna supports.

(*b*) Position a diagonal brace G9 so that its end hole is aligned with the top hole of G5C; be sure that the angled edge of the diagonal faces out. Insert a 3/8- by 1¼-inch bolt through the holes previously aligned ((*a*) above). Use a lockwasher and thread a nut fingertight.

(*c*) Align the hole in the free end of diagonal brace G9 with the brace hole provided on supporting post G5L (fig. 16); align the end hole of another diagonal brace G9 with the same hole. Be sure that the second diagonal brace is inside posts G5C and G5L and that its angled edge faces in. Insert a 3/8- by 1-inch bolt, place a lockwasher on the bolt, and thread a nut fingertight.

(*d*) Align the hole in the free end of the second diagonal G9 with the center hole of the first group of three brace holes in supporting post G5C. Position a guy attachment plate G46 on the outside of supporting post G5C so that the plate extends diagonally outward from post G5C as illustrated in figure 16, and so that the three holes in the plate align with the three holes of the first group of brace holes in supporting post G5C. Next align the end hole of horizontal brace G24 with the center hole of the same group of brace holes. Be sure that the remaining flange of the horizontal brace faces the top of section C6. Insert a 3/8- by 1¼-inch bolt from the inside of the face through the aligned holes in pieces G9, G46, and G24. Place a lockwasher on the bolt and thread a nut fingertight.

(*e*) Secure plate G46 to supporting post G5C by inserting 3/8- by 1-inch bolts through the remaining aligned holes. Place lockwashers on all bolts and thread nuts fingertight.

(*f*) Follow the procedures described in (*d*) and (*e*) above and connect another diagonal brace G9, the free end of horizontal brace G24, and guy attachment plate G47 to supporting post G5L through the second group of brace holes in supporting post G5L. All pieces are located on the outside of supporting post G5L as illustrated in figure 16 with plate G47 adjacent to the supporting post.

(*g*) Continue to assemble face C of section C6 by installing the remaining three diagonal braces G9 (fig. 16).

(*h*) Insert 3/8- by 1-inch bolts through the two holes in the adjacent guy attachment plates G47 and G46 which have been secured to supporting posts G5L and G5C ((*e*) above). Place lockwashers on all bolts and thread nuts fingertight.

(*i*) Insert a filler plate G45 (fig. 16) between adjacent guy attachment plates G37 and G38. Insert three 3/8- by 1-inch bolts through the assembly, place lockwashers on all bolts, and thread the nuts fingertight.

(*j*) Position gusset plate G32 on the top flanges of horizontal braces G27 and G28 as shown in figure 16, section G–G (also fig. 15). Align the three holes along each side of the gusset plate with the three holes in each of the horizontal braces.

(*k*) Position antenna attachment plate G30 over the gusset plate so that the six holes at one end of plate G30 align with the six center holes of the gusset plate (fig. 16, section G–G).

(*l*) Secure gusset plate G32 to horizontal braces G27 and G28 by means of four 3/8- by 1-inch bolts; use lockwashers and thread nuts fingertight.

(*m*) Secure antenna attachment plate G30 to gusset plate G32 and the horizontal braces by means of six 3/8- by 1¼-inch bolts; use lockwashers and thread the nuts fingertight.

(*n*) Insert a plate G31 between antenna attachment plate G30 and horizontal brace G29, and then place another plate G31 on the top of plate G30 as shown in figure 16, section K–K. Align the connector and shackle holes of the three plates. Insert two 3/8- by 1½-inch bolts through the connection holes of horizontal brace G29 and plates G30 and G31; place lockwashers on the bolts and thread the nuts fingertight.

h. Assembly of Section C7 (fig. 17). (1) Locate the following components so that they will be readily available during the assembly of the section:

3 supporting posts G6
15 diagonal braces G9
2 steps, left-hand, G11
3 steps, right-hand, G12
1 antenna attachment plate G21
1 horizontal brace G33
1 horizontal brace G34
1 horizontal brace G35
11 bolts, 3/8 inch by 3/4 inch
18 bolts, 3/8 inch by 1 inch
29 standard lockwashers for 3/8-inch bolts

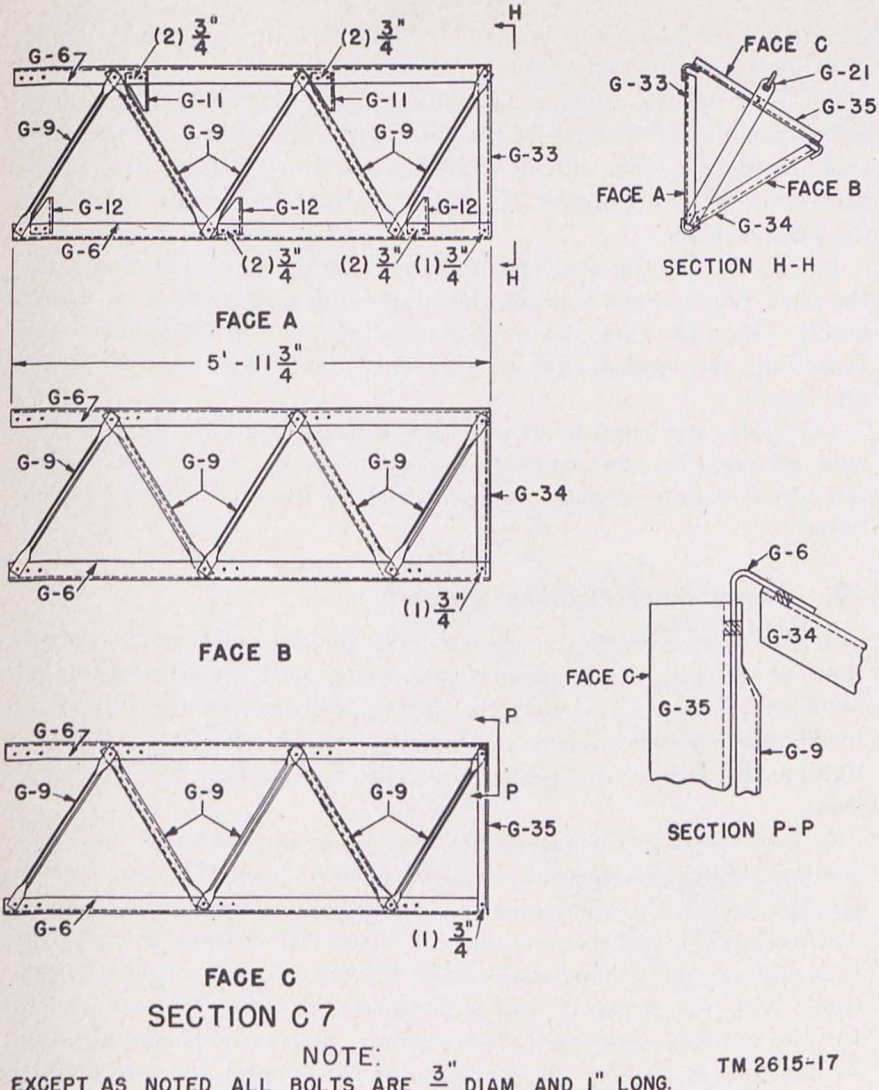


Figure 17. Section C7, assembly details.

Note. Section C7 must be installed on the *side* antenna supports; installation on the end supports is optional.

(2) The procedure for assembly of section C7 is similar to that described for the assembly of section C5 (*f* above). In addition, observe the following:

(*a*) Begin assembly of face A by locating the top horizontal brace G33 against the inside face of supporting post G6L with the end hole of the brace aligned with the top hole of post G6L. Align the other hole on the other end of brace G33 with the end hole of supporting post G6R. Locate top horizontal brace G34 on face B in the

same manner; locate top horizontal brace G35 on the *outside* faces of supporting posts G6L and G6C (face C).

(*b*) Position the antenna attachment plate G21 so that the plate rests upon the top flanges of the three top horizontal braces and so that the plate extends outside of horizontal brace G35, as illustrated in section H–H of figure 17. Use 3/8- by 1-inch bolts to secure the plate in place.

(*c*) Install the top diagonal brace G9 outside the supporting post, the next diagonal brace inside the supporting posts, and so on alternately. Be sure that the angled edge of the top diagonal brace faces out, the angled edge of the next brace faces in, and so on alternately.

(*d*) Left- and right-hand steps are installed only on face A. Secure all steps to the supporting posts with 3/8- by 3/4-inch bolts. All other section components are bolted by means of 3/8- by 1-inch bolts.

10. Assembly of Antenna Support

a. With the exception of the six bolts for the splice plate connections at the upper end of each supporting post, firmly tighten all bolts on all sections so that the spring lockwashers are fully flattened; use a 6-inch wrench for this purpose. Be careful not to overtighten the bolts; overtightening strips the threads and damages bolts.

b. Lay out the various sections in their approximate assembly position; figure 18 illustrates the sequence of assembly (one section C1, one section C2, one section C3, four sections C4, one section C5, one section C6, and one section C7). Turn all sections so that face C is flat on the ground and at the bottom of each respective section. Also see figure 4 which illustrates a typical location plan for the antenna supports before raising. Gather sufficient blocking to facilitate assembly; the condition of the ground level determines the necessary blocking requirements.

c. Insert bottom plate G16 on the steel pedestal base or concrete base so that the two anchor bolts in the base (par. 8*a*(5)) pass through the 13/16-inch diameter holes in the plate; secure the plate in place with nuts and locknuts. *Tighten the nuts fingertight only until the support is raised.*

d. Place section C1 in its proper before-raising position (fig. 4); be sure that face C is parallel to ground at the bottom of the section. Place the necessary blocking under face C of section C1 in order to bring the face parallel to ground level.

e. Insert bottom plate G15 into bottom plate G16 (*c* above) and align the two side holes. Insert a 3/4- by 6 3/4-inch shouldered bolt through the aligned holes in one side of the assembly. Position a pipe spacer G43 (3/4-inch standard pipe, 3 11/16 inches long) so that

the center line of the spacer rests along the center line of the side holes of bottom plate G15. Continue the shouldered bolt through the spacer and through the holes on the other side of the assembly. Thread a nut until it clears the hole drilled through the bolt and

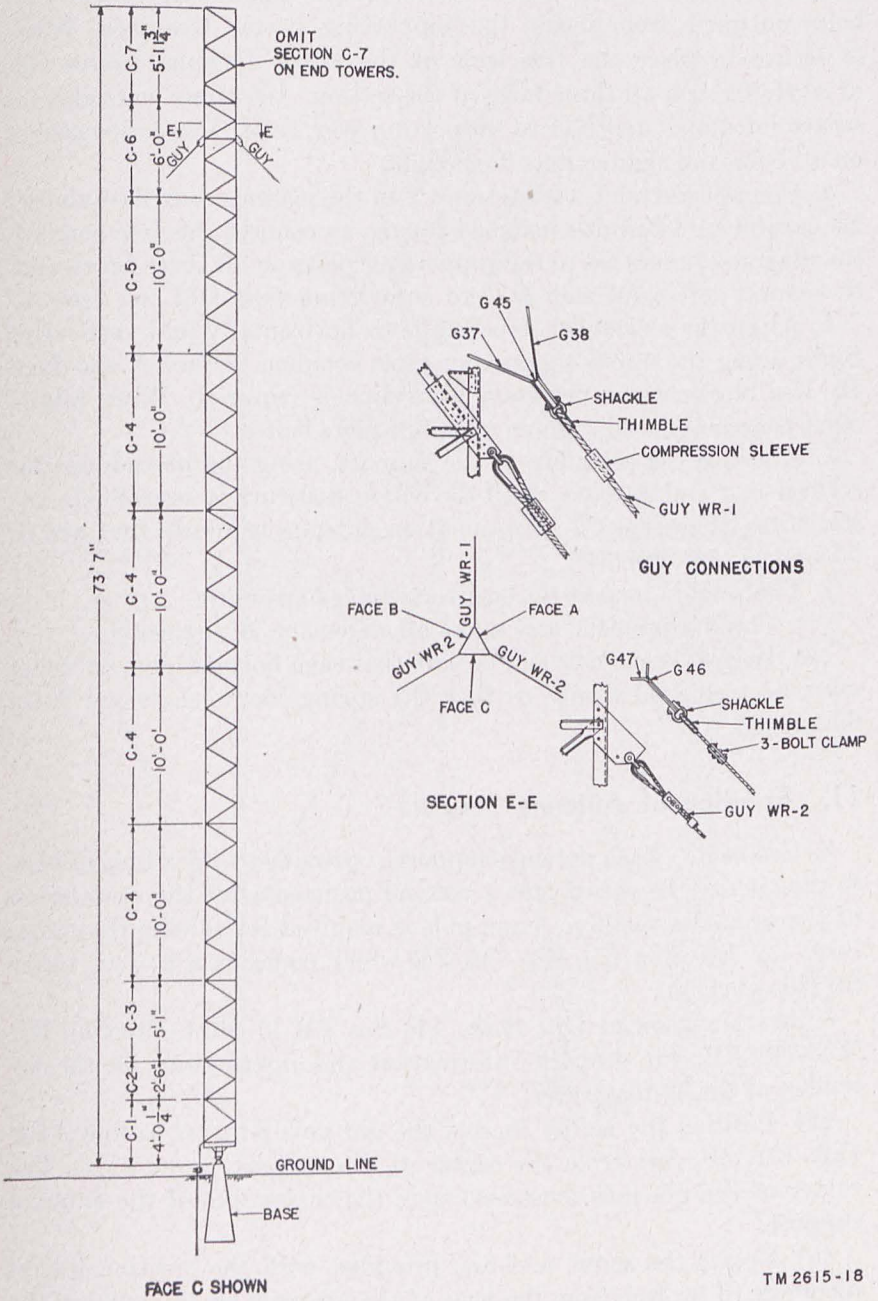


Figure 18. Antenna support, sections assembled together, guy connection details.

then insert a brass cotter pin through the hole and expand the pin.

f. Be sure that face C of section C2 is the bottom face and is parallel to the ground and properly blocked. Connect section C2 to section C1 by means of the splice plate G7 bolted at the top of section C1. Use 3/8- by 1-inch bolts for this connection; insert the bolts outward from inside the supporting posts. Use these bolts to secure in place the free ends of the lower diagonal braces G9 of section C2 on all three faces of the section. Use these bolts also to secure left-hand step G11 to supporting post G2L. Use lockwashers on all bolts and tighten nuts fingertight.

g. Connect section C3 to section C2 in the manner described above. Be careful to determine matched facing, to connect the free ends of the diagonal braces G8 to the supporting posts on all three faces, and to connect left-hand step G11 to supporting post G3L on face A.

h. Align the assembled structure both horizontally and vertically. Sight along the upper supporting posts common to face A and face B. Use blocks where necessary correction is required. When alignment is accomplished, tighten all splice-plate bolts.

i. Continue the assembly of the support, using the procedures described in *f* and *h* above, until the entire structure is assembled. Installation of section C7 is optional on antenna supports that are to be used as *side* supports.

j. Thoroughly inspect the entire assembled structure.

(1) Check alignment and make all necessary adjustments.

(2) Inspect every bolt and be sure that each bolt is tight. All bolts *must* be tightened firmly so that the spring lockwashers are fully flattened.

11. Erection of Antenna Support

a. General. Each antenna support is provided with a hinged base so that it may be raised into a vertical position after the completion of the ground assembly. A gin pole is required for raising the structure; use Erection Kit MX–746/FR which contains a 30-foot tower for this purpose.

b. Installation of Gin Pole. (1) See TM 11–2614, Erection Kit MX–746/FR, for detailed information and instructions on the assembly of the 30-foot tower.

(2) Position the ladder face of the gin pole *parallel* to line ABC (fig. 19), 3½ feet from the center of the support foundation. The center of the gin pole must rest upon the center line of the antenna support.

(3) Locate the screw anchors, provided with the erection kit, at distances of 30 feet from the base of the gin pole on lines 60° to the right and left of the center line as illustrated in figure 19. Screw the screw anchors into the ground so that the anchor rod makes a

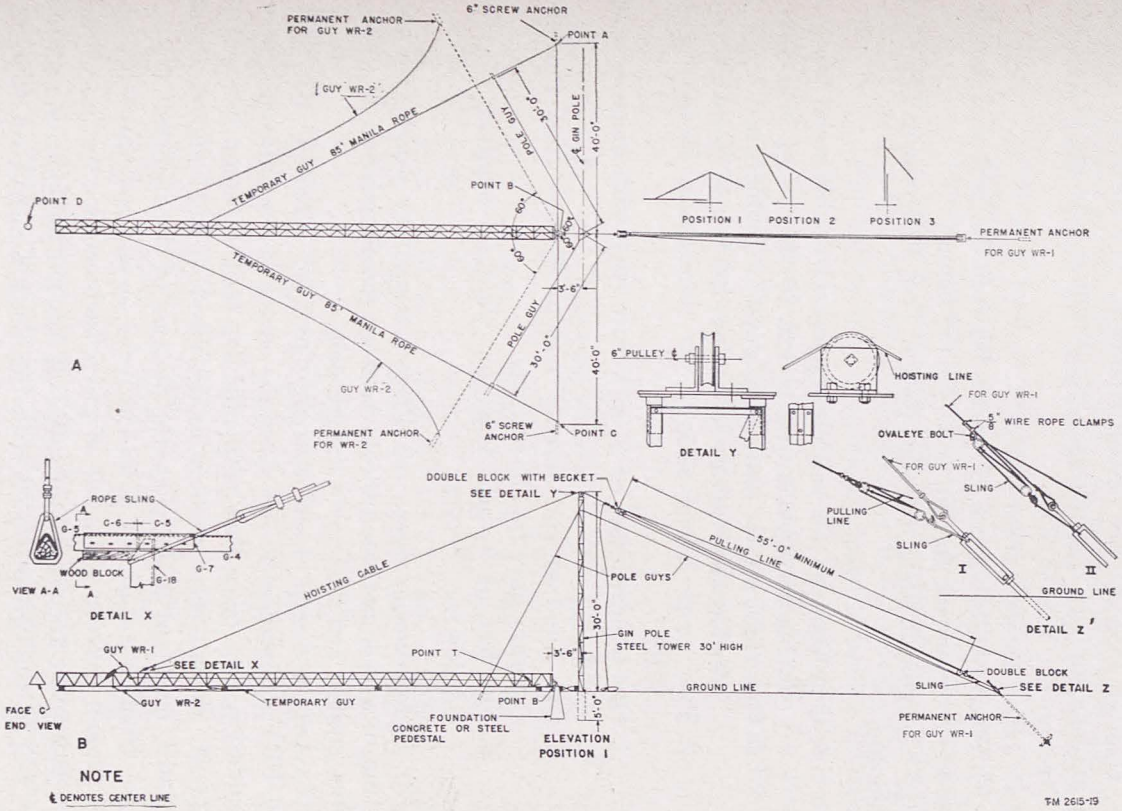


Figure 19. Method of raising support.

45° angle with respect to ground and so that not more than 6 inches of the anchor rod projects above the ground.

(4) Connect the side guys for the gin pole to the screw anchors and the back guy to the permanent anchor for the support (⅝-inch diameter) guy WR1 (par. 8*c* (1) (*a*); fig. 19).

c. Ground Preparation before Hoisting. (1) *General.* To erect the antenna support, the following equipment is required in addition to Erection Kit MX746/FR:

(*a*) Jack (standard truck jack).

(*b*) Wood blocks for use as spacers between the jack and foundation and between jack and gin pole ((2) (*a*) below).

(*c*) Component items of radio station Tool Equipment TE–87–A including—

1. One block set for raising support (1 double wood block, 1 double wood block with becket, 300 feet of ¾-inch rope).
2. One block set for tensioning guys (1 double wood block, 1 double wood block with becket, 100 feet of ½-inch rope).
3. Two grips (come-a-long) for tensioning 5/16-inch guys WR2.
4. One hundred feet of ½-inch wire rope with loops on each end.
5. One hundred and seventy feet of ¾-inch rope for temporary guys for the support.
6. Six feet of ¾-inch rope for sling on support ((2) (*g*) below).

(2) *Installation of guys.* (*a*) Place a temporary wood strut consisting of a jack and wood blocks between the foundation of the antenna support and the base of the gin pole.

(*b*) Locate 6-inch screw anchors (part of Erection Kit MX–746/FR) at distances 40 feet from the center of the antenna support foundation and on a line perpendicular to the center line of the support. Install these anchors as described in *b* (3) above. Points A and C on figure 19 designate the position of the anchors.

(*c*) Stand a coil of guy WR2 (5/16 inch) on end and unroll it along the ground between the point of guy attachment on section C6 and the permanent anchor for the guy (fig. 19; par 8*c* (1)); be sure that the end of the coil provided with the shackle is located, after unrolling, near the guy attachment plates on section C6. Repeat the same procedure with the second guy WR2 and with guy WR1 and their respective anchors. Attach the shackle provided with the 5/16-inch guys WR2 to the support guy connection consisting of plates G46 and G47 (fig. 18); attach the shackle provided with the ⅝-inch diameter guys to the guy attachment plates G37 and G38 (fig. 18). Be sure that a thimble is inserted between the guy and its shackle.

(*d*) Dimension E (fig. 20) is the theoretical length of the guy from the point of guy attachment on the support and the center of the eye of the anchor rod when the turnbuckle is open to its full travel. Use table I and the actual dimension A as determined in 8*c*(1) to ascertain the dimension E.

Note. On level ground where A is 67 feet, ¼ inch long, dimension E is 89 feet, 9¾ inches long for guy WR1 and 90 feet, 11¾ inches long for guys WR2.

1. Table I is used to determine the dimensions E for guys WR1 and WR2 and also to determine the proper guy tension. Locate the given dimension A in the first column of table I, and then find the corresponding value for E in the columns labeled *E(Guy WR1)* and *E(Guy WR2)*. For values of A not actually listed in table I interpolate the corresponding values of E. For example, for a given value of 63 for A, the corresponding value for E(Guy WR1) is 85.54; for a given value of 61.6 for A, the corresponding value for E(Guy WR2) is 83.29.

Table I

A (ft)	D (ft)	E (Guy WR1) (ft)	E (Guy WR2) (ft)	V1	V2	V3	V4
74	104.64	99.67	100.83	108	94	103	56
72	101.81	96.84	98.00	111	97	106	57
70	98.98	94.01	95.17	114	100	109	59
68	96.15	91.18	92.34	118	103	113	61
66	93.32	88.35	89.51	122	106	116	63
64	90.50	85.53	86.69	126	109	120	65
62	87.67	82.70	83.86	130	113	124	67
60	84.84	79.87	81.03	134	117	128	69
58	82.01	77.04	78.20	139	121	132	72
56	79.18	74.21	75.37	144	125	137	75
54	76.35	71.38	72.54	149	130	142	78
52	73.53	68.56	69.72	155	135	148	81
50	70.70	65.73	68.89	161	140	154	84
48	67.87	62.90	64.06	168	146	161	87
46	65.04	60.07	61.23	176	153	168	91

Column V1—vibrations per minute, guy WR2, 1,600-lb. initial tension, all supports.
Column V2—vibrations per minute, guy WR2, 1,200-lb final tension, end supports.
Column V3—vibrations per minute, guy WR2, 1,460-lb final tension, side supports.
Column V4—vibrations per minute, guy WR1, 1,600-lb initial tension, all supports.

2. Lay out the calculated length E along guy WR2. Use a three-bolt clamp and attach each guy WR2 to the thimble eye (fig. 20) of the permanent anchor at that length. After the support is raised, some further adjustment may be necessary; therefore, wrap the guy around the thimble eye in a loose loop to avoid kinking. Do not cut off any extra length at this time.

Note. Determine the dimension E for each guy WR2 individually. Under certain conditions where the ground is not uniform in slope, dimension E for one guy WR2 may differ from dimension E for the other guy WR2.

(*e*) Obtain an 85-foot length of manila rope of ¾-inch diameter; use this length of rope as a temporary guy. Secure one end of the rope at the top horizontal brace G20 of section C5. Secure the rope around the horizontal brace and the supporting post on the section nearest to location A. Run the free end of the rope through the thimble eye of the screw anchor at point A and then snub with several turns around the projecting rod.

(*f*) Repeat the procedure given above and connect another 85-foot length of manila rope to the horizontal brace G20 and supporting post on section C5 nearest location C. Secure the free end of the rope to the screw anchor at location C.

(*g*) Loop and secure the free ends of a 6-foot length of ¾-inch manila rope around the uppermost supporting post G5 of section C6 as shown in figure 19, detail X. Use a wooden block, as illustrated, to avoid cutting the rope. Use two wire rope clips and connect one end of a 100-foot, ½-inch wire-rope hoisting cable to the sling thus formed.

(*h*) Lay the hoisting cable parallel to the center line of the antenna support. At a measured distance of approximately 68 feet from the connection to the sling, form a loop in the hoisting cable and secure with two wire rope clamps.

(*i*) Run the block assembly from the permanent anchor for WR1 for a distance not less than 55 feet. Connect the hook of the block with a becket through the loop ((*g*) above) in the hoisting cable.

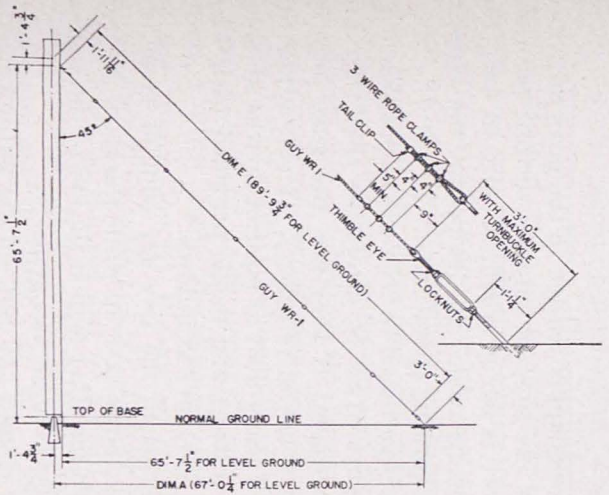
(*j*) Raise the hoisting cable to the top of the gin pole and place the cable on the top sheave as illustrated in figure 19, detail Y. Attach the lower block of the hoisting tackle to the 8-foot attachment cable (part of Erection Kit MX–746/FR) as shown in detail Z–I of figure 19. Keep the thimble eye clear during the raising process (*d* below). The support now is ready for hoisting.

Caution: The process of raising the support is hazardous; irreparable damage can result if anything fails. Inspect all guys, shackles, connections, and equipment before hoisting. Be sure that all persons not specifically assigned to this work are kept clear of the vicinity of the tower.

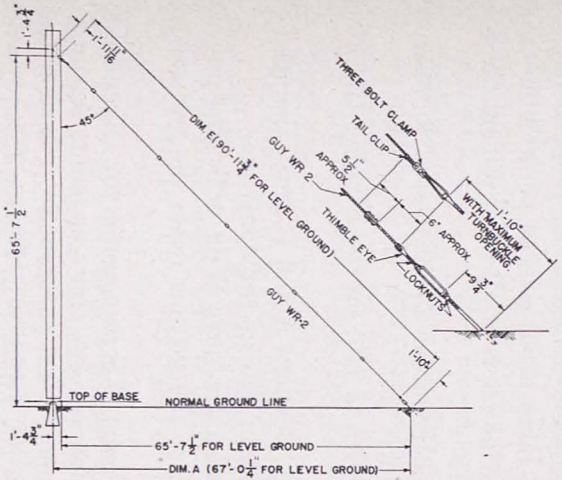
d. Hoisting Antenna Support. (1) Set up the following stations for the hoisting procedure (fig. 19) :

(*a*) Position five men to the running end of the hoisting tackle assembly.

(*b*) Assign two or three men to each temporary guy at points A and C respectively.



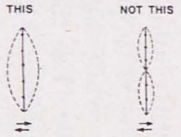
SECTION A-A LEVEL GROUND FOR GUY WR-1



SECTION B-B LEVEL GROUND FOR GUY WR-2

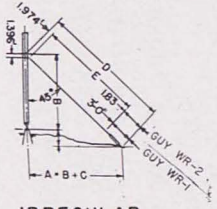
NOTE:

PUSH ON THE GUY SO AS TO SET IT SWINGING BACK AND FORTH (SIDEWAYS).
MAKE SURE THE ENTIRE GUY IS SWINGING IN ONE LENGTH AND NOT IN PARTS.



NOTES:

DIAM. OF GUY WR-1 = 5/8"
DIAM. OF GUY WR-2 = 5/16"



IRREGULAR GROUND

TM 2615-20

Figure 20. Guy diagram.

(*c*) Assign one or two men to each 5/16-inch permanent guy WR2 at the permanent anchor locations.

(*d*) Position one man (second-in-command) at point D (fig. 19).

(*e*) The local commander takes position near point A or C. He must keep positive control of the crews at all times during the hoisting operation.

(2) At the local commander's order to *commence to raise*, the various crews proceed as follows:

(*a*) The hoisting crew begins to pull on the running end of the hoisting tackle.

(*b*) Men at temporary guy locations A and B grasp the open end of the rope and prepare to ease or take up snubbing line.

(*c*) Men positioned on permanent guys WR2 grasp the guy wire and prepare to exert pull when the support nears the vertical position.

(*d*) The man stationed at point D is responsible for alignment and maintains control of the temporary guy crews at points A and C.

(3) Raise the antenna support from position No. 1 through position No. 2 to its final position No. 3 (fig. 19). During this procedure, the following actions occur:

(*a*) The hoisting crew begins to ease off on the tension applied to the tackle assembly.

(*b*) The temporary guy crews exert care to maintain alignment, and ease or take up the snubbing line as ordered by the second-in-command located at point D.

(*c*) The permanent guy crews apply tension to the guys to reduce the accelerated movement of the support into its vertical position.

Caution: While the support is being raised, be sure to keep the support in line with the hoisting cable; do not permit the support to swing sideways during the hoisting operation.

(4) After the support has been raised to its vertical position (fig. 19, position 3), check the guys WR2 to determine that they are properly attached to their anchors; if they are, the guys may be tensioned by means of the turnbuckles (*e* below). If not, adjust the guys while the support is still being held in position by the hoisting tackle. Use the grips (come-a-long) and tackle provided with Tool Equipment TE–87–A (par. 11*c*(1)(*c*)) as follows:

(*a*) Connect one of the grips to the guy far enough from the anchor rod to permit sufficient tackle take-up while the slack is being removed from the guy. Fasten the other grip at the eye of the anchor rod and then hook the tackle between the two grips.

(*b*) Remove the three-bolt clamps and pull on the pulling line of the tackle. Tension each of the side guys to approximately 1,600 pounds (*e*(1) below).

(*c*) Connect the three-bolt clamp approximately 6 inches from the

thimble eye (fig. 20, section B–B). Secure the loose end of the guy in place with a wire rope clip.

(*d*) Remove the grips and tackle.

(5) Run the 5/8-inch back guy WR1 to its permanent anchor and temporarily connect it with a wire rope clamp to the anchor rod (fig. 19, detail Z–I). Fasten an ovaleye bolt (part of Erection Kit MX–746/FR) by means of two 5/8-inch wire rope clamps to guy WR1 as illustrated in figure 19, detail Z–II. Be sure to fasten the ovaleye bolt to the guy far enough away from the anchor to permit sufficient tackle take-up while the slack is being removed from the guy. Shift the hoisting tackle from the pull line to the ovaleye bolt.

(6) Remove the wire rope clamp and with the turnbuckle of the anchor rod for guy WR1 open, take up the slack in WR1 and apply tension (approximately 1,600 pounds) to the guys (*e*(1)(*d*) below). Locate and secure three wire rope clamps as illustrated in figure 20, detail A–A.

Note. The wire rope clamp is designed so that the saddle of the clamp forms a seat and prevents the cutting of the outer guy strands when the load is applied. Always place the saddle on the load side of the connection; always locate the U-bolt around the idle end. Positioning the U-bolt over the load-holding end of the eye connection causes heavy concentration of pressure at the inside crown of the U-bolt; this results in severe cutting of the guy strand.

(7) Remove all temporary guys and hoisting tackle.

(8) Apply Grease, General Purpose, No. 2 (WB), to the threaded parts of the turnbuckles. The grease is a rust preventive and will facilitate adjustment of guy tension (*e* below).

e. Tensioning Guys. The maximum strength of the antenna support is obtained when the guys are installed with the correct initial tension. All supports should have an initial tension of approximately 1,600 pounds before the antenna is attached; tension must be determined under conditions where the support is plumb and there is no wind blowing. To determine guy tension in the field, use table I. The tension of a guy is determined for a given span by observing the natural rate of vibration for the guy.

(1) *Obtaining initial tension, all guys.* (*a*) Determine from column V1 of table I the number of vibrations per minute (for an initial tension of 1,600 pounds) corresponding to the actual guy length (WR2) used. For example, for a given guy WR2 length of 98 feet (dimension E), the correct number of vibrations per minute as determined by table I is 111. Record this vibration rate (par. 18*b*).

(*b*) Push on the guy and set it swinging back and forth in a sideways direction. Make sure that the entire guy is swinging in one length and not in parts (fig. 20). Count the number of complete swings from right to left and back again in 1 minute.

Note. During this operation keep the antenna support plumb. Check the plumbness of the support with a transit; if a transit is not available, line up the corner posts of the support with a plumb line held in the hand.

(*c*) Adjust the turnbuckle until the number of complete swings or vibrations per minute corresponds to the number determined from table I ((*a*) above). Tightening the guys increases the number of vibrations per minute.

(*d*) The correct tension is obtained in guy WR1 if both guys WR2 are tensioned properly and the support is plumb. Column V4 of table I indicates the vibration rate for guy WR1; use this rate for checking purposes only; base all tension measurements for guy WR1 on guys WR2.

(2) *Final tension, end supports.* (*a*) After the guys on all four antenna supports have been tensioned properly, attach the antenna wires in position and pull up to approximately their correct sag in accordance with the instructions given in TM 11–2617, Antenna Kit for Rhombic Transmitting Antenna. When all the wires have been sagged the same amount, adjust and secure the turnbuckles in the ⅝-inch guy WR1 assembly of the two *end supports* of the array. *Do not change the adjustment of the side antenna support guys at this time.*

(*b*) Use the vibration method and check the tension of the 5/16-inch WR2 guys of the *end supports.* Determine from column V2 of table I the number of vibrations per minute (for the final tension of 1,200 pounds) corresponding to the actual guy length used. Tighten or loosen the turnbuckles until the tension of 1,200 pounds is obtained. Adjust all three turnbuckles the same amount to maintain the top of the support in the same position and to prevent a change in the sag in the antenna wires. After the turnbuckles are adjusted, tighten all locknuts, pass safety wire through the turnbuckle body and eye of the thimble eyebolt, and secure the turnbuckle so that it will not turn.

(3) *Final tension, side supports.* Since the load in the side antenna supports is only about one third as much as on the end supports, the tension in the guys of the side supports does not change very much during the stringing operation. The final tension or vibration rate for the 5/16-inch guys WR2 for the side supports is determined from column V3 of table I. The tension on the guys should be approximately 1,460 pounds. Check the tension by the vibration method, make the necessary adjustment in the turnbuckles, tighten the locknuts, and secure the turnbuckle ((2) (*b*) above).

12. Installation of Ground System (fig. 21)

a. Force the 8-foot ground rod into the ground near the base of the support so that approximately 8 to 10 inches of the rod is exposed.

b. Secure a ground wire clamp to the rod; connect two 3-foot lengths of #4 copper wire to the clamp.

c. Secure a connector lug to the free end of each 3-foot length of wire.

d. Use ¼- by ¾-inch stove bolts with a flat washer and lockwasher, and bolt the connector lugs to the supporting posts of section C1. The bolts are inserted through the third hole from the bottom of supporting post G1R and G1C respectively (fig. 9).

13. Final Steps

a. If the installation is permanent, cut off the excess guy lengths on both guys WR1 and WR2 (fig. 20, sections A–A and B–B). However, if the rhombic installation is temporary, do not remove the excess lengths; in the next installation, ground conditions may require the full length of the guy.

b. Lower the gin pole and dismantle (see TM 11-2614). Remove the screw anchors for temporary guys and pole guys.

c. Smooth off any excess excavation material from around the base and anchors.

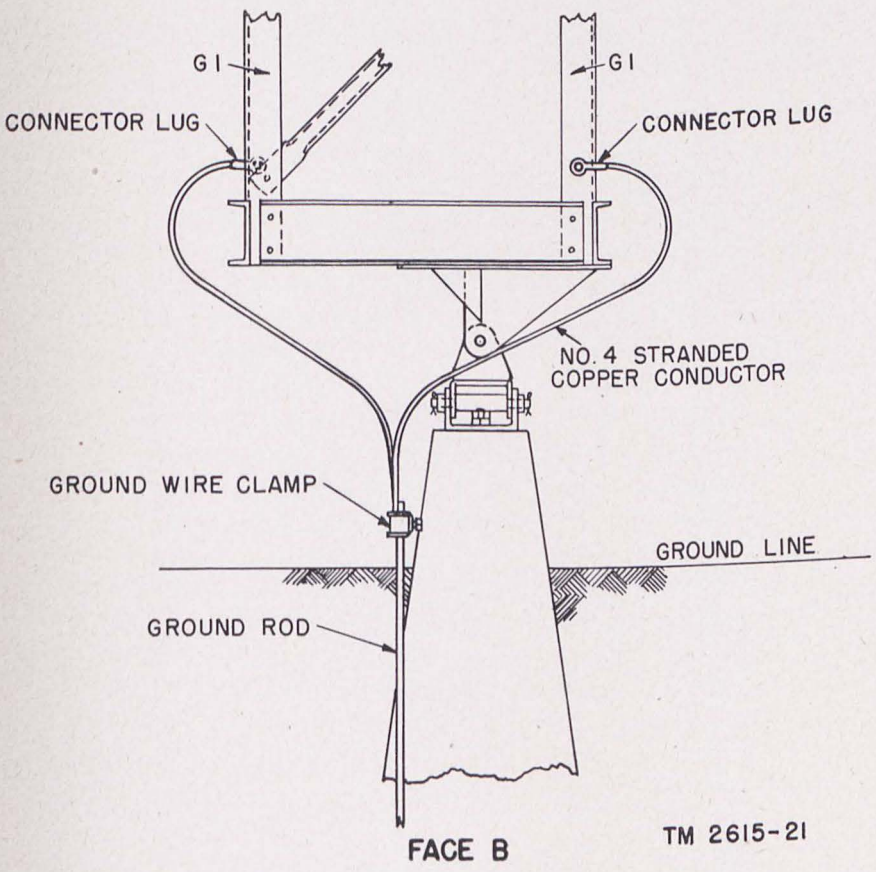


Figure 21. Ground system.

14. Dismantling and Repacking Antenna Support

a. To dismantle the antenna support, reverse the procedures described in paragraphs 8, 9, 10, and 11 for installation, assembly, and erection. Repack all parts and components in boxes and bundles in which they were originally shipped.

b. Install the gin pole, temporary guys, screw anchors, and hoisting cable.

c. Station men at the positions listed in paragraph 11*d*(1). When lowering the support, observe the same safety precautions observed when erecting the support. Slacken off on the hoisting tackle slowly by snubbing on the permanent anchor for WR1; at the same time apply tension to the guys WR2.

d. Disassemble the various sections and then disassemble each section piece by piece.

e. Dig up the anchors.

f. Sort the tower parts and consolidate them as indicated in paragraph 4.

PART TWO
OPERATING INSTRUCTIONS

(Not applicable)

PART THREE
MAINTENANCE INSTRUCTIONS

Section III. PREVENTIVE MAINTENANCE

15. Meaning

PM (preventive maintenance) is a systematic series of operations performed on equipment at regular intervals to prevent major breakdowns and unwanted interruptions in service and to keep the equipment operating at top efficiency at all times. The performance of PM operations on a routine basis enables organizational personnel to locate and correct minor defects or damage before they become serious enough to require major repairs. The importance of PM cannot be overemphasized, and maintenance personnel should be thoroughly familiar with their equipment and the correct maintenance procedures to be followed.

16. Techniques

a. Antenna Support AB–105A/FRC requires routine PM. The performance of PM operations depends to a certain degree upon the climatic conditions encountered in the particular location of the antenna location. Rapid changes in weather (such as heavy rain followed by blistering heat), excessive dampness, snow and ice, tend to cause damage to exposed surfaces. This damage is evidenced by rusting or corrosion of metal parts of the support and of mounting and guying facilities. Rusting of threaded parts of guy wire turnbuckles may cause considerable difficulty when readjustment is necessary. High winds and heavy ice coatings on the supports and on supported antennas may cause loosening of guy wires and anchors.

b. The various components of the antenna support must be inspected, tightened, cleaned, and adjusted. Inspection consists of carefully observing all parts of the equipment, noticing their color, placement, state of cleanliness, and tightness. Be sure that all joints and connections are free from accumulations of dirt, dust, corrosion, and other foreign matter. Never tighten screws, bolts, and nuts carelessly; fittings tightened beyond the pressure for which they are designed will be damaged or broken.

17. Tools and Materials

The following PM tools and materials are needed:

Common hand tools.

Grease, General Purpose No. 2 (WB) or equal.
#000 sandpaper (Sig C stock No. 6Z7500–000).
Paint OD (Sig C stock No. 6G1506.3).
Brush, paint (Sig C stock No. 6Z1558).

18. Performance

The following PM operations should be performed by organizational personnel at monthly intervals, or more frequently if considered necessary by the local commander.

a. Supporting Posts, Braces, Splice Plates, Pedestal Base. (1) Inspect all parts for rust and corrosion. Clean all rusted or corroded parts. Remove rust from all tower surfaces with sandpaper and touch up the surface with the OD (olive drab) paint.

(2) Inspect mounting and assembly bolts for tightness. Tighten all loose connections. Never apply so much force that nuts or bolts are damaged by stripping threads or by shearing off bolt heads.

(3) Inspect grounding wires and terminals at the support base and on the ground rod for tightness and for evidences of corrosion. Clean the electrical contact surfaces with #000 sandpaper and retighten securely.

(4) Visually inspect the entire antenna installation for evidence of misalignment of the supports caused by settling of the mounting base, by loose guy wires, or by insecure guy anchors.

b. Guy Assembly. (1) Inspect the guys *daily* for a short time after the supports have been erected. The tension in the guys may slacken off because of elongation of the loops around insulators and because of compression of the strands. The vibration rate of all guys was recorded at the time of installation. Tighten the turnbuckles as necessary to maintain this same tension. Check the tightness of the nuts in the wire rope clamps at the connection to the anchors and retighten as necessary.

(2) Inspect all guys and turnbuckles for tightness (table I). Adjust the turnbuckles if necessary. Visually inspect the threaded parts of the turnbuckles and determine whether a rust preventive material must be reapplied; if so, use grease (WB) or equivalent. Application of the grease also facilitates adjustment of the guy tension.

Section IV. LUBRICATION

(Not required.)

Section V. WEATHERPROOFING

(Not required.)

PART FOUR
AUXILIARY EQUIPMENT

(Not used.)

PART FIVE
REPAIR INSTRUCTIONS

Section VI. REPAIRS

19. Replacement of Parts

a. General. Replacement of defective components of a completely erected and installed antenna support is best accomplished by first lowering the support to the ground. Damage to an erected antenna support is uncommon and ordinarily results from hurricane winds or bombing which may cause partial or complete destruction.

b. Replacement of Bracing Members. (1) Remove the antenna and lower the antenna support to the ground (par. 14 and TM 11–2617).

(2) Loosen and remove the nuts and bolts that secure the defective component in place. When replacing defective components, replace uppermost ones first and then work down. The top end of each piece is the first to be connected to bolts that hold more than one piece. Use a drift pin as a temporary bolt and as a means of aligning holes preparatory to insertion and securing of a permanent bolt. Loosen only one piece at a time and replace it before loosening and removing a second part. Tighten the replacement securely with a wrench.

c. Replacement of Guy Insulators. To replace a defective insulator, proceed as follows:

(1) Obtain the length of ¾-inch rope supplied as a component of Tool Equipment TE–87–A. Wrap and knot the rope around the supporting post immediately above the permanent guy attachment plates on section C6. Use this rope as a temporary guy.

(2) Run the temporary guy to the anchor for the guy which contains the defective insulator. Place tension on the temporary guy and then secure to the anchor.

(3) Remove the defective guy and replace the insulator.

(*a*) If an insulator in the ⅝-inch guy is to be replaced, use a hack saw and cut the guy wire on both sides of the insulator outside of the compression sleeve. Assemble the replacement insulator into the guy as follows:

1. Insert approximately 1 foot of the guy wire through one of the holes in the guy insulator. Bend the wire back on itself so that the wire forms a loop which engages the insulator. Secure the loop by means of three wire rope clips which are supplied as running spare parts.

2. Turn the insulator so that the second hole which runs at right angles to the guy wire will be inside the loop thus

formed. Insert approximately 1 foot of guy wire through this hole; loop, and secure with three wire rope clips. A total of only three rope clips is supplied with each antenna support; therefore, obtain the second set of three rope clips required from the components of one of the other three antenna supports used in the rhombic installation.

(*b*) A defective insulator in 5/16-inch guy assembly WR2 is replaced, in general, in the same manner as described above for guy assembly WR1. However, the insulators in assembly WR2 are secured by means of three-bolt clamps instead of compression sleeves. To free a defective insulator, remove the three-bolt clamps, and then secure the replacement in place by means of the same clamps. Examine the clamps at this time; if a clamp is defective, use the spare clamp.

(4) Reinstall the guy (par. 11*c*(2)), and remove the temporary guy. Be sure to obtain proper tension on the guy (par. 11*e*).

20. Painting

Paint antenna support components when they begin to rust or show signs of corrosion. Proceed as follows:

a. Remove all rust or corrosion from rusted or corroded parts: channels, braces, nuts, bolts, attachment plates, etc. Use a steel wire brush; obtain a bright smooth finish.

b. Wipe clean with a clean dry cloth.

c. Paint with olive-drab paint; use brush, sash tool, Signal Corps stock No. 6Z1566. Use a high-grade outside paint for metal.

21. Unsatisfactory Equipment Report

a. WD AGO Form 468 (Unsatisfactory Equipment Report) for Equipment Used by the Army. WD AGO Form 468 will be filled out and forwarded through channels to the Office of the Chief Signal Officer, Washington 25, D. C., when trouble occurs more often than is normal, as determined by qualified repair personnel.

b. AF Form 54 (Unsatisfactory Report) for Equipment Used by Department of the Air Force. AF Form 54 will be filled out and forwarded to Commanding General, Air Matériel Command, Wright-Patterson Air Force Base, Dayton, Ohio, in accordance with AF Regulation 15–54.

APPENDIX I
REFERENCES

1. Publications

TM 11–486	Electrical Communication Systems Engineering.
TM 11–2614	Erection Kit MX–746/FR.
TM 11–2617	Antenna Kit for Rhombic Transmitting Antenna.
FM 21–6	List and Index of Department of the Army Publications.

2. Forms

WD AGO Form 468	Unsatisfactory Equipment Report.
AF Form 54	Unsatisfactory Report.

3. Packaging and Packing Instructions

a. Joint Army-Navy Packaging Specifications—

JAN–P–100	General Specifications.

b. U.S. Specifications—

100–2E	Marking Shipments by Contractors (and Signal Corps Supplement thereto).
100–14A	Army-Navy General Specification for Packaging and Packing Overseas Shipment.

c. Signal Corps Instructions—

720–7	Standard Pack.
726–15	Interior Marking.

4. Painting and Preserving

SB 11–76	Signal Corps Kit and Materials for Moisture- and Fungi-Resistant Treatment.
TB SIG 123	Preventive Maintenance Practices for Ground Signal Equipment.

APPENDIX II

IDENTIFICATION TABLE OF REPLACEABLE PARTS

1. Requisitioning Parts

The fact that a part is listed in the table is not sufficient basis for requisitioning the part. Requisitions must cite an authorized basis, such as T/O & E, TE, TA, T/BA, SIG 6, SIG 7, SIG 7–8–10, SIG 10, list of allowances of expendable material, or other authorized supply basis. For an index of available catalogs in the Signal portion of the Department of the Army Supply Catalog, see the latest issue of SIG 1 & 2.

2. Identification Table of Replaceable Parts for Antenna Support AB–105A/FRC

Ref symbol	Name of part and description	Function of part	Signal Corps stock No.
	ANTENNA SUPPORT AB–105A/FRC: steel, galv; uniform triangular cross section; 73 ft 7″ h x 25″ wd ea face; incl guys and anchors; Wind Turbine type.	Used in groups of four to support rhombic antenna installations.	2A248–105A
Figs. 2 and 7	ANCHOR, expansion: 2-way expanding; iron, rustproof finish; 8″ diam closed; less anchor rod; for ⅝″ to ¾″ diam rod; Chance part #826.	Used as a holding device in the ground for the 5/16-inch side guy.	5B102
Figs. 2 and 7	ANCHOR, expansion: 4-way expanding; iron, rustproof finish; 10″ diam closed; less anchor rod; for 1″ diam rod; Chance part #1044.	Used as a holding device in the ground for the ⅝-inch back guy.	5B110
	BOLT, machine: RH; steel, cad pl; ¼″–20; ¾″ lg, thd ¾″.	To secure ground-system terminal lugs to section C1.	6L604–.7
	BOLT, machine: sq hd; steel, galv; ⅜″–16; ¾″ lg, thd 9/16″.	Secures structural members in place.	6L606–.7
	BOLT, machine: sq hd; steel, galv; ⅜″–16; 1″ lg.	Secures structural members in place.	5B1506–1
	BOLT, machine: sq hd; steel, galv; ⅜″–16; 1¼″ lg, thd ⅞″.	Secures structural members in place.	5B1506–1.2

2. Identification Table of Replaceable Parts for Antenna Support AB–105A/FRC (contd)

Ref symbol	Name of part and description	Function of part	Signal Corps stock No.
	BOLT, machine: sq hd; steel, galv; 3/8"–16; 1½" lg, thd 7/8".	To secure guy and antenna attachment plates in place on section C6.	6L606–1.5S
G43	BOLT, machine: sq hd; steel, galv; 5/8"–11, NC–2; 6¾" lg; shoulder ¾" diam x 5½" lg; Wind Turbine part #G–43.	To secure together bottom plates G15 and G16, and also bottom plate G15 and bottom assembly G14.	6L610–6.7
	BOLT, machine: steel, galv; 5/8"–11, NC–2 thd; 1 ft 6" lg; one end thd 3"; unthreaded end formed in L with 3" face.	To secure bottom assembly to concrete pier.	6L610–18.1
	BOLT, machine: sq hd; steel, galv; ¾"–10; 1⅝" lg, thd 1⅛".	To secure together bottom plates G15.	6L212–1.6
	BOLT, eye: steel, galv; machine thd, 1"–8; 8⅞" lg under eye, thd 8¼"; less nut.	Used in conjunction with turnbuckle for four-way expansion anchor to secure and tighten 5/8-inch back guy.	5B1316–8
G10	BRACE, tower: 90° V-shaped center, ends flattened; steel, galv; 1 ft 11" lg, 1½" wd ea side of V, flat ends 2⅛" lg; Wind Turbine part #G–10.	To provide horizontal bracing in sections C1, C2, C3, and C4.	2A377.1–33
G9	BRACE, tower: 90° V-shaped center section, ends flattened; steel, galv; 2 ft 3⅛" lg overall x ¾" face ea side, flat ends 2⅛" lg x 1½" wd; Wind Turbine part #G–9.	To provide diagonal bracing to antenna support in sections C1, C2, C6, and C7.	2A377.1–34
G8	BRACE, tower: 90° V-shaped center section, ends flattened; steel, galv; 2 ft 3½" lg overall x ¾" face ea side, flat ends 2⅛" lg x 1½" wd; Wind Turbine part #G–8.	To provide diagonal bracing to antenna support in sections C3, C4, and C5.	2A377.1–15

2. Identification Table of Replaceable Parts for Antenna Support AB–105A/FRC (contd)

Ref symbol	Name of part and description	Function of part	Signal Corps stock No.
	CLAMP; ground rod; copper; natural finish; 1 bolt type; 13/16" lg x 3/4" wd x 1 1/4" h; for 1/2" diam rod and #2 to #10 AWG wire; Oliver Iron & Steel part #76591.	Used in ground system; clamps copper wire to ground rod.	5B3361C
	CLAMP: guy; steel, galv; no bolts; 3" lg x 1" wd x 1/16" thk; for 9/16" diam wire; JR Kearney part #439.	To secure free end of guy in place.	5B3490
	CLAMP: guy; steel, galv; U-shaped; 3" lg x 2 1/2" wd, 1/2" diam stock; for 5/8" diam wire; Oliver Iron & Steel part #9075.	To secure 5/8-inch diameter guy to turnbuckle.	5B4024
Fig. 20	CLAMP: guy; steel, galv; 3 bolt type; 4" lg x 1 9/16" wd x 3/4" thk; for 1/4" to 7/16" wire; Hubbard part #7449.	Secures 5/16-inch guy to turnbuckle.	5B3450
WR2	GUY: steel, 7 strand, galv; 5/16" diam x 100 ft 8" lg; guy thimble spliced in one end; Wind Turbine part #WR2.	Used as side guy to support antenna support.	2A1344–69
WR1	GUY: steel, 19 wire high-strength, galv; 5/8" diam x 101 ft 5" lg; guy thimble spliced in one end, wire rope clip fastened to other; Wind Turbine part #652–7.	Used as back guy to support antenna support.	2A1344–70
G7	PLATE, reinforcing: steel, galv; 60° V-shaped angle iron; 12" lg x 2" face ea side; Wind Turbine part #G–7.	Reinforces and connects supporting posts.	2A2822–14
Figs. 2 and 7	ROD, anchor: steel, galv; 9 ft 11" lg x 1" diam; one end thd 8 1/4" w/LH thd, other end thd 3 1/2" with RH thd; Wind Turbine part #TA1.	To connect turnbuckle (and guy) to four-way expansion anchor.	2A3186.3–2
Fig. 2	ROD, anchor: incl turnbuckle; steel, galv; open frame style; 6" take-up; 7 ft lg with stubs screwed in; Wind Turbine part #TA–2.	To connect 5/16-inch guy to two-way expansion anchor; also used to tighten guy.	5B9600

2. Identification Table of Replaceable Parts for Antenna Support AB–105A/FRC (contd)

Ref symbol	Name of part and description	Function of part	Signal Corps stock No.
Fig. 21	ROD, ground: copper coated steel; 8 ft lg x ½″ diam; Hubbard #9428.	Used as ground rod to ground antenna support.	2A3189.1
Figs. 15 and 18	SHACKLE: guy; steel, galv; U-shaped; 2¼″ lg x 1½″ wd, 5/16″ diam stock; incl thd pin; Thos Laughlin std 5/16″ w/⅜″ pin.	To secure 5/16-inch guy to guy attachment plates.	5B15406
Figs. 15 and 18	SHACKLE: guy; steel, galv; U-shaped; 4″ lg x 2½″ wd, 9/16″ diam stock; incl ⅝″ x 2½″ pin drilled for ⅛″ diam cotter; Ohio Brass part #79608.	To secure 5/16-inch guy to guy attachment plate.	5B15414
Figs. 15 and 18	SHACKLE: guy; steel, galv; U-shaped; 4″ lg x 3¼″ wd, ⅝″ diam stock; incl thd pin; Thos Laughlin std ⅝″ w/¾″ pin.	To secure ⅝-inch guy to guy attachment plate.	5B15409
Fig. 21	TERMINAL, lug: offset spade type; copper and bronze, tin pl; for #8 AWG solid to #4 AWG stranded cond; 2″ lg x ¾″ wd x 1½″ h, 9/32″ diam stud hole; screw clamp to wire; Thomas & Betts part #LF1.	Used in ground system as connection between wire and supporting post G1.	3Z12060–13.8
Fig. 18	THIMBLE, guy: steel, galv; for 5/16″ diam wire; 2⅜″ lg x 1 25/32″ wd, 7/16″ score; Reese Padlock ⅜″ std.	Used as protective connection between 5/16-inch guy and shackle.	5B18043
Fig. 18	THIMBLE, guy: steel, galv; for ½″ diam wire; 3″ lg x 2″ wd, 9/16″ score; Reese Padlock ½″ std.	Used as connection between ⅝-inch guy and its guy attachment plate.	5B18044
Fig. 2	TURNBUCKLE: steel, galv; open frame style; for 1″–8 bolts; 12″ take-up; 14½″ overall; body only, no stubs; Wind Turbine part #TA1.	To tighten ⅝-inch guy and to connect guy to anchor rod.	5B19016–8
	WASHER, flat: steel, galv; round, 5/16″ ID x ¾″ OD x ⅛″ thk.	Used as seat for head of ¼-inch bolt.	6L58025–12C

2. Identification Table of Replaceable Parts for Antenna Support AB–105A/FRC (contd)

Ref symbol	Name of part and description	Function of part	Signal Corps stock No.
	WASHER, lock: steel, galv; round, 0.255″ ID x ½″ OD x 1/16″ thk; spring type.	Used as lockwasher for ¼-inch bolts.	6L71004–16C
	WASHER, lock: steel, galv; round, 13/32″ ID x 21/32″ OD x 3/32″ thk; spring type.	Serve as lockwashers for bolts which secure structural members in place.	6L71006–7C
	WIRE, electrical: SD copper; bare; #4 B & S; 7 strand. 6 ft lg.	Used in ground system as connection between antenna support and ground rod.	1A804.8
	WIRE, mechanical: galv steel; 0.109″ diam x 12 ft lg.	Used as seizing wire.	1A812

☆ U. S. Government Printing Office: 1948 — 789139/388

Page 2, paragraph 3, chart, *Component* column, line 20, after "Bottom plate G15."

Page 8, paragraph 4*a*, chart, *Contents item* column, line 10, after "Bottom plate G15."

Last line, after "Pipe spacer G43."

Page 9, paragraph 4*a*, chart, *Contents item* column, line 16, after "Bolts (1⅝")."

Page 26, paragraph 9*b*(1). After "2 bottom plates G15."

After "2 pipe spacers."

After "1 bolt, ¾ inch by 1⅝ inch."

Page 27, figure 8, after caption.

Page 28, figure 9, after caption.

Page 30, paragraph 9*b*. Subparagraph (14), line 1, after "G15."

Subparagraph (15), line 1, after "G15."

Page 46, paragraph 10*e*, line 1, before "Insert bottom plate G15."

Page 1, heading. Change "PART ONE" to: CHAPTER 1. (As added by C 2, 7 Aug 63) add the following note below the title of chapter 1:

Note. Antenna Support AB–105B/FRC is similar to Antenna Support AB–105A/FRC. Information in this manual applies to both equipments unless otherwise specified.

(As changed by C 2, 7 Aug 63) add paragraphs 1.1 and 1.2 after paragraph 1.

1.1. Index of Publications

Refer to the latest issue of DA Pam 310–4 to determine whether there are new editions, changes, or additional publications pertaining to Antenna Supports AB–105A/FRC and AB–105B/FRC. DA Pam 310–4 is an index of technical manuals, technical bulletins, supply manuals (types 7, 8, and 9), supply bulletins, lubrication orders, and modification work orders which are available through publications supply channels. The index lists the latest changes to and revisions of each equipment publication.

1.2. Forms and Records

a. Reports of Maintenance and Unsatisfactory Equipment. Use equipment forms and records in accordance with instructions in TM 38–750.

b. Report of Damaged or Improper Shipment. Fill out and for-

ward DD Form 6 (Report of Damaged or Improper Shipment) as prescribed in AR 700–58 (Army), NAVSANDA Publication 378 (Navy), and AFR 71–4 (Air Force).

c. Reporting of Equipment Manual Improvements. DA Form 2028 (Recommended Changes to DA Publications) will be used for reporting discrepancies and recommendations for improving this equipment publication. The form will be completed by the individual using the manual and forwarded direct to Commanding General, U.S. Electronics Command, ATTN: AMSEL–MR–NMP–AD, Fort Monmouth, N.J., 07703.

Page 2, paragraph 3, chart, line 21 (as changed by C 2, 7 Aug 63), add the following item below line 20:

Component	Required No.	Height (in.)	Depth (in.)	Length (in.)	Weight (lb)
Bottom plate G15–A (for Antenna Support AB–105/FRC only).	1	6	4½	4½	4.6

Page 8, paragraph 4*a*, chart (as changed by C 2, 7 Aug 63), add the following item below line 10:

Item	Container	Size (in.)	Weight (lb)	Contents	
				Quan	Item
				1	Bottom plate G15–A (for Antenna Support AB–105B/FRC only).

Page 12, paragraph 5*g* (as changed by C 2, 7 Aug 63). Add to the heading: and G15–A. After heading, add subparagraph designation "(1)." Line 1, change "This plate" to: The G15 (supplied with Antenna Support AB–105A/FRC only),.

Add subparagraph (2) after subparagraph (1).

(2) *Bottom plate G15–A supplied with Antenna Support AB–105B/FRC only.* This plate is a ⅜-inch thick, steel assembly with an upper and lower U-shaped portion. The center base is 4½ inches square, and each vertical side is 3 inches high. The sides are bent alternately in opposite directions at right angles to the base. Each vertical side is provided with a hole, $^{25}/_{32}$ inch in diameter 1 inch from its tip, and tapers from 4½ inches wide at the base to 1 inch wide at the tip. A piece of ¾-by

$3\frac{11}{16}$-inch pipe is tack-welded between each set of vertical sides in line with the holes. Bottom plate G15–A is connected to bottom assembly G14 (*f* above) and to plate G16 (*h* below) by means of ¾-by 6¾-inch shoulder bolts. Bottom plate G15–A is used as a part of the swivel (at the base of the antenna support) that is required to erect the support to a vertical position.

Page 15, paragraph 5*o*, line 6 (as changed by C 2, 7 Aug 63), delete the fourth sentence of subparagraph and substitute: The guy is fabricated with five insulators spliced in place. The insulators of Antenna Support AB–105A/FRC are secured by means of ⅝-inch aluminum compression sleeves. The insulators of Antenna Support AB–105B/FRC are secured by means of three 2-bolt clamps on each side of each insulator.

Page 17, change "Section II" to: CHAPTER 2.

After the chapter heading, add the following warning:

Warning: **During the installation of this equipment, make certain all safety requirements set forth in TB SIG 291 are followed. Injury or DEATH could result from failure to comply with safe practices.**

Page 26, paragraph 9*b*(1), component items list (as changed by C 2, 7 Aug 63), add after line 7 of the first column: 1 bottom plate G15–A (for Antenna Support AB–105B/FRC only).

Page 30, paragraph 9*b*(15) (as changed by C 2, 7 Aug 63), add subparagraph (16) after subparagraph (15):

(16) For Antenna Support AB–105B/FRC, insert bottom plate G15–A between the bottom assembly (G14) hinge plates so that the holes in the upper set of vertical sides align with the hinge-plate holes. Insert a shoulder bolt (¾-inch by 6¾-inches) through the aligned holes, and thread a nut fingertight on the end of this bolt. The upper portion of the bottom plate now forms a swivel joint between the hinge plates.

Page 48, paragraph 10*e*, after line 1 (as changed by C 2, 7 Aug 63), delete the last three sentences (added by C 1, 18 Mar 49).

(As changed by C 2, 7 Aug 63), add subparagraph *e*.1 after subparagraph *e:*

e.1. For Antenna Support AB–105B/FRC, insert the vertical sides of the lower U-shaped portion of bottom plate G15–A between the vertical sides of bottom plate G16 and align the holes.

Insert a shoulder bolt (¾-inch by 6¾-inches) through the aligned holes. Thread a nut on the bolt until it clears the hole drilled through the bolt, and then insert a brass cotter pin through the hole and expand the pin.

Page 55, paragraph 11*d*(8) (as changed by C 2, 7 Aug 63), delete "Grease, General Purpose, No. (WB)" and substitute: Grease, Aircraft and Instrument MIL–G–3278 (GL) (FSN 9150–261–8297).

Page 59. Delete "PART TWO."

Page 60. Delete title "PART THREE, MAINTENANCE INSTRUCTIONS."

Delete section III (as changed by C 2, 7 Aug 63), and substitute:

CHAPTER 3

OPERATOR'S MAINTENANCE INSTRUCTIONS

Section I. OPERATOR'S MAINTENANCE INSTRUCTIONS

15. Scope of Operator's Maintenance

The maintenance duties of the operator of the AB–105A/FRC and/or AB–105B/FRC are listed below, together with a reference to paragraphs covering the specific maintenance function. The duties required do not require tools or test equipment.

a. Operator's daily preventive maintenance checks and services (para 16).

b. Cleaning (para 17).

c. Lubrication (para 17.1).

15.1. Material Required for Maintenance

a. Cleaning Compound (FSN 7930–395–9542).

b. Sandpaper No. 000 (FSN 5350–271–7939).

c. Cleaning cloth (FSN 8305–267–3015).

d. Grease, Aircraft and Instrument (FSN 9150–261–8297).

Warning: **Prolonged breathing of cleaning compound is dangerous; make sure that adequate ventilation is provided. Cleaning compound is flammable; *do not* use near a flame. Avoid contact with the skin; wash off any that spills on your hands.**

Note. No special tools are required.

15.2. Preventive Maintenance

Preventive maintenance is the systematic care, servicing, and inspection of the equipment to prevent the occurrence of trouble, to reduce downtime, and to assure that the equipment is serviceable.

a. Systematic Care. The procedures given in paragraphs 16, 17, and 17.1 cover routine systematic care and cleaning, essential to the proper upkeep of the AB–105A/FRC and/or AB–105B/FRC.

b. Preventive Maintenance Checks and Services. The preventive maintenance checks and services chart (para 16) outlines functions to be performed at specific intervals. These checks and services are to maintain Army electronic equipment in a combat

serviceable condition; that is, in good general (physical) condition and in good operating condition. To assist operators in maintaining combat serviceability, the chart indicates what to check and what the normal indications are; the *References* column lists the illustrations, paragraphs, or manuals that contain detailed repair or replacement procedures. If the defect cannot be remedied by the operator, higher category maintenance or repair is required. Records and reports of these checks and services must be made in accordance with the requirements set forth in TM 38–750.

15.3. Preventive Maintenance Checks and Services Periods

Paragraph 16 specifies checks and services that must be accomplished daily, and under the conditions listed below:

a. Before the antenna is put into operation.

b. When the equipment is initially installed.

c. At least once each week if the equipment is maintained in standby condition.

16. Operator's Daily Preventive Maintenance Checks and Services Chart

Sequence No.	Item to be inspected	Procedure	References
1	Antenna and antenna support.	***Warning:*** **Shut down the transmitter before performing the following procedure.**	
		a. Check for completeness.	*a.* App B.
		b. See that the installation complies with operational requirements.	*b.* None.
		c. Check for cleanliness. Remove any grease, dirt, corrosion, and fungus.	*c.* Para 17.
		d. See that all painted surfaces are free of bare spots, rust, and corrosion.	*d.* Refer to higher maintenance category.
2	Guy wires	Inspect tension, and tighten turnbuckles, if necessary, to maintain correct tension.	Para 11*e*.
3	Turnbuckles	Inspect threaded parts for rust and corrosion. If necessary, apply a thin coat of Grease, Aircraft and Instrument MIL–G–3278 (GL) to threaded parts.	Fig. 20.

17. Cleaning

Inspect the exteriors of the AB–105A/FRC and/or AB–105/FRC. The exterior surfaces should be free of dirt, grease, and fungus.

a. Remove dust and loose dirt with a clean, soft cloth.

***Warning:* Prolonged breathing of cleaning compound is dangerous; make certain that adequate ventilation is provided. Cleaning compound is flammable; *do not* use near a flame. Avoid contact with the skin; wash off any that spills on your hands.**

b. Remove grease, fungus, and ground-in dirt from the equipment; use a cloth dampened (not wet) with cleaning compound.

17.1. Lubrication

Apply a small amount of Grease, Aircraft and Instrument MIL–G–3278 (GL) as a rust preventative when adjusting the guys and turnbuckles. The application of grease also facilitates the adjustment of the guy tension.

Section II. ORGANIZATIONAL MAINTENANCE INSTRUCTIONS

18. Scope of Organizational Maintenance

a. This section contains instructions covering organizational maintenance for the AB–105A/FRC and/or AB–105B/FRC.

b. Organizational maintenance consists of the following:

(1) Monthly and quarterly preventive maintenance checks and services (para 18.3 and 18.5).

(2) Touchup painting (para 20).

(3) Replacement of parts (para 19).

18.1. Tools and Materials Required

a. Tools. Tool Equipment TE–87–A.

b. Materials.

(1) Cleaning Compound (FSN 7930–395–9542).

(2) Cleaning cloth (FSN 8305–267–3015).

18.2. Monthly Maintenance

Monthly preventive maintenance checks and services on the AB–105A/FRC and/or AB–105B/FRC are required. All deficiencies or shortcomings will be recorded in accordance with the requirements of TM 38–750. Perform all the checks and services

listed in the organizational monthly preventive maintenance checks and services chart (para 18.3) in the sequence listed.

Warning: **Shut down the transmitter before performing preventive maintenance checks and services.**

18.3. Organizational Monthly Preventive Maintenance Checks and Services Chart

Sequence No.	Item to be inspected	Procedure	References
1	Supporting post, braces, splice plates, pedestal base, and associated parts.	Inspect all parts for rust and corrosion. Remove rust and corrosion, and repaint as required.	Fig. 2, 8, 12, and 15 and para 20.
2	Mounting and assembly bolts.	Inspect for tightness; tighten as required.	Fig. 8 through 17, and 21.
3	Grounding wires, ground rod, ground wire clamp, and terminals at the support base.	*a.* Inspect for tightness and evidence of corrosion. *b.* Clean electrical contact surfaces with #000 sandpaper, and tighten securely.	*a.* Fig. 21. *b.* Fig. 21.
4	Entire installation -----	Inspect for evidence of misalignment of supports, loose guy wires, or insecure guy anchors; make necessary adjustments or repairs.	Para 10 through 13 and 19.

18.4. Quarterly Maintenance

Quarterly preventive maintenance checks and services on the AB–105A/FRC and/or AB–105B/FRC are required. Periodic monthly services constitute a part of the quarterly preventive maintenance checks and services and must be performed concurrently. All deficiencies or shortcomings will be recorded in accordance with the requirements of TM 38–750. Perform all the checks and services listed in the organizational quarterly preventive maintenance checks and services chart (para 18.5) in the sequence listed.

Warning: **Shut down the transmitter before performing preventive maintenance checks and services.**

18.5. Organizational Quarterly Preventive Maintenance Checks and Services Chart

Sequence No.	Item to be inspected	Procedure	References
1	Completeness	See that the equipment is complete.	App B.
2	Installation	Check to see that the equipment is properly installed and that there is no evidence of misalignment of supports, loose guy wires, or insecure guy anchors. Make necessary adjustments or repairs.	Para 10 through 13 and 19.
3	Cleanliness	See that the equipment is clean.	Para 17.
4	Preservation	Check all surfaces for evidence of fungus. Remove rust and corrosion and spot-paint bare spots.	Para 20 and TB SIG 364.
5	Publications	See that all publications are complete, serviceable, and current.	DA Pam 310–4.
6	Modification work orders.	Check DA Pam 310–4 to determine if new, applicable MWO's have been published. All URGENT MWO's must be applied immediately. All NORMAL MWO's must be scheduled.	DA Pam 310–4 and TM 38–750.

Page 61, delete sections IV and V.

Page 62, delete PART FOUR.

Page 63, change "PART FIVE" to: CHAPTER 4. Under chapter heading, delete section heading.

Page 64, paragraph 20*c*, line 1, delete "Signal Corps Stock No. 6Z1566". After last sentence, add: Refer to TB SIG 364 for the applicable painting and refinishing practices.

Delete paragraph 21.

Page 65, appendix I (as changed by C 2, 7 Aug 63), delete and substitute:

APPENDIX A

REFERENCES

Following is a list of applicable references available to the operator and maintenance personnel of Antenna Supports AB–105A/FRC and/or AB–105B/FRC:

DA Pam 310–4	Index of Technical Manuals, Technical Bulletins, Supply Manuals (types 7, 8, and 9), Supply Bulletins, Lubrication Orders, and Modification Work Orders.
TB SIG 291	Safety Measures to be Observed When Installing and Using Whip Antennas, Field Type Masts, Towers, Antennas, and Metal Poles That Are Used With Communication, Radar, and Direction Finder Equipment.
TB SIG 355–3	Depot Inspection Standard for Moisture and Fungus Resistant Treatment.
TB SIG 364	Field Instructions for Painting and Preserving Electronics Command Equipment.
TM 9–213	Painting Instructions for Field Use.
TM 11–486–1	Electrical Communication Systems Engineering: Planning Considerations.
TM 11–2614	Erection Kit MX–746/FR.
TM 11–2617	Antenna Kit MX–742/FR, Guy Kits MX–744/FR and MX–745/FR, Transmission Line Kit MX–740/FR and Dissipation Line Kit MX–739/FR.
TM 11–5985–210–20P	Organizational Maintenance Repair Parts and Special Tools List and Maintenance Allocation Chart: Antenna Supports AB–105A/FRC, AB–105B/FRC, and AB–105C/FRC.
TM 11–5985–210–35P	Field and Depot Maintenance Repair Parts and Special Tools List: Antenna Supports AB–105A/FRC, AB–105B/FRC, and AB–105C/FRC.
TM 38–750	Army Equipment Record Procedures.

Page 66, appendix II (as changed by C 2, 7 Aug 63), delete and substitute:

APPENDIX B

BASIC ISSUE ITEMS

Section I. INTRODUCTION

B–1. General

This appendix lists items supplied for initial operation and for running spares. The list includes tools, parts, and material issued as part of the major end item. The list includes all items authorized for basic operator maintenance of the equipment. End items of equipment are issued on the basis of allowances prescribed in equipment authorization tables and other documents that are a basis for requisitioning.

B–2. Columns

Columns are as follows:

a. Federal Stock Number. This column lists the 11-digit Federal stock number.

b. Designation by Model. The dagger (†) indicates the model in which the part is used.

c. Description. Nomenclature or the standard item name and brief identifying data for each item are listed in this column. When requisitioning, enter the nomenclature and description.

d. Unit of Issue. The unit of issue is each unless otherwise indicated and is the supply term by which the individual item is counted for procurement, storage, requisitioning, allowances, and issue purposes.

e. Expendability. Nonexpendable items are indicated by NX. Expendable items are not annotated.

f. Quantity Authorized. Under "Items Comprising and Operable Equipment", the column lists the quantity of items supplied for the initial operation of the equipment. Under "Running Spare Items" the quantities listed are those issued initially with the equipment as spare parts. The quantities are authorized to be kept on hand by the operator for maintenance of the equipment.

g. Illustration. The numbers in the "Figure No." column refer to the illustrations where the part is shown.

SECTION II. FUNCTIONAL PARTS LIST

FEDERAL STOCK NUMBER	DESIGNATION BY MODEL 1	2					DESCRIPTION	UNIT OF ISSUE	EXP	QTY AUTH	ILLUSTRATION FIGURE NO.	ILLUSTRATION ITEM NO.
							ITEMS COMPRISING AN OPERABLE EQUIPMENT					
							ANTENNA SUPPORT AB-105A, B/FRC					
							NOTE: Model column 1 refers to AB-105A/FRC; column 2 refers to AB-105B/FRC					
5825-228-0225							ANTENNA SUPPORT AB-105A, B/FRC: ECOM dwg SC-D-25290		NX		1	
	/	/					TECHNICAL MANUAL TM 11-2615: Requisition through pinpoint account number if assigned; otherwise through nearest Adjutant General facility.			2		
							NOTE: For technical manuals the quantity indicates the maximum number of copies authorized for packing (or issue) with the equipment. Where a number of these equipments are concentrated in a small area, the quantity on hand may be reduced to practical levels. Excess publications must be returned to publication supply central through AG channels.					
4030-188-0514	/	/					ANCHOR, GUY: 8 way expanding, 8 in dia when closed; Chance part #88100; (NOTE: Use in equipment on all orders previous to Order 21350-PH-54)			2		
4030-242-8791	/	/					ANCHOR, GUY:Expansion type 4 way 10 in dia when closed; ECOM dwg SC-D-25290H-3			1	2	
5306-498-8016	/	/					BOLT, EYE: 12 in lg o/a; spec MIL-Z-17871; Auto Electric Cat #S-2778; (NOTE: Used in equipments on all orders previous to Order 28607-PH-55)			2		
5306-637-9860	/	/					BOLT, L: 1 ft 2-11/16 in lg thd 3 in lg; short leg 3-5/16 in lg; ECOM dwg SC-B-25337 and SC-D-25290-15			2		
5306-270-9630	/	/					BOLT, MACHINE: Hex head; w/nut; 5/8 in-11NC-2 X 1-1/4 in lg thd; 2 in lg o/a; Fed spec FF-B-575, type No. 3			2		
5305-141-2870	/	/					BOLT, MACHINE: Sq head; incl hex nut; 3/8 in -16-NC-2; 1-1/4 in lg; ECOM dwg SC-D-25290-11 and 13			60		
5306-206-4761	/	/					BOLT, MACHINE: Sq head; incl hex nut; 3/8 in -16NC-2; 1 in lg; ECOM dwg SC-D-25290-10			524		
	/	/					BOLT, MACHINE: Sq head; incl hex nut; 3/8 in -16-NC-2; 1-1/2 in lg; ECOM dwg SC-D-25290-12 and 13; (Ord Stk No. H101-8457955)			5		
	/	/					BOLT, MACHINE: Sq head; 3/8 in -16 X 3/4 in lg fully thd w/nut; Fed spec FF-B-571, type A-2; (Ord Stk No. H101-8457946)			105		
	/	/					BOLT, MACHINE: Slotted drive; RH; 1/4 in -20 X 3/4 in lg; (Ord Stk No. H101-8457919)			2		

FEDERAL STOCK NUMBER	DESIGNATION BY MODEL 1	2					DESCRIPTION	UNIT OF ISSUE	EXP	QTY AUTH	ILLUSTRATION FIGURE NO.	ILLUSTRATION ITEM NO.
							AB-105A, B/FRC (continued)					
5306-498-8385	/	/					BOLT, SHOULDER: Steel; sq head; 5/8 in -11-NC-2; 1-1/4 in thd portion; 6-3/4 in nom lg; ECOM dwg SC-B-25307			2		
5450-404-2238	/	/					BRACE, TOWER: Bracing channel; U-shape; 2 ft lg X 4 in w X 1-1/2 in d; stamped "G-17"; ECOM dwg SC-B-25309			3	2	
5450-351-0497	/	/					BRACE, TOWER: Cross brace; L-shape; 1 ft 11 in lg X 1-1/4 in w X 1-1/4 in d; stamp "G-34"; ECOM dwg SC-B-25321-2			1	2	
5450-404-2233	/	/					BRACE, TOWER: Cross brace; 90 deg angle shape 1 ft 11 in lg X 1-1/4 in w X 1-1/4 in d; stamped "G-23" ECOM dwg SC-B-25313-2			1	2	
5450-404-2234	/	/					BRACE, TOWER: Cross brace; L-shape; 1 ft 11 in lg X 1-1/4 in w X 1-1/4 in d; stamped "G-24" ECOM dwg SC-B-25314			1	2	
5450-404-2235	/	/					BRACE, TOWER: Cross brace; L-shape; 1 ft 11 in lg X 1-1/2 in w X 1-1/2 in d; stamped "G-28" ECOM dwg SC-B-25316-1			1	2	
5450-404-2236	/	/					BRACE, TOWER: Cross brace; L-shape; 1 ft 11 in lg X 2-1/2 in w X 2 in d; stamped "G-19"; ECOM dwg 25310-2			1	2	
5450-404-2237	/	/					BRACE, TOWER: Cross brace; L-shape; 1 ft 11 in lg X 2-1/2 in w X 2 in d; stamped "G-18"; ECOM dwg SC-B-25310-1			1	2	
5450-404-2239	/	/					BRACE, TOWER: Cross brace; L-shape; 1 ft 11 in lg X 1-1/2 in w X 1-1/2 in d; stamped "G-28"; ECOM dwg SC-B-25316-2			1	2	
5340-404-2241	/	/					BRACE, TOWER: Stamped "G-33"; L-shape; 1 ft 11 in lg X 1-1/4 in w X 1-1/4 in d; ECOM dwg SC-B-25321-1			1	2	
5450-404-2242	/	/					BRACE, TOWER: Cross brace; L-shape; 1 ft 11 in lg X 2 in w X 1-1/2 in d; stamped "G-35"; ECOM dwg SC-B-25322			1	2	
5450-404-2244	/	/					BRACE, TOWER: Cross brace; L-shape; 1 ft 11 in lg X 2-1/2 in w X 2 in d; stamped "G-29"; ECOM dwg SC-B-25317			1	2	
5450-404-2245	/	/					BRACE, TOWER: Cross brace; L-shape; 1 ft 11 in lg X 3 in w X 2 in d; stamped "G-20"; ECOM dwg SC-B-25311			1	2	
5450-404-2246	/	/					BRACE, TOWER: Cross brace; L-shape; 1 ft 11 in lg X 1-1/4 in w X 1-1/4 in d; stamped "G-22"; ECOM dwg SC-D-25313-1			1	2	
5450-404-2232	/	/					BRACE, TOWER: Diagonal brace; L-shape; 2 ft 6-3/8 in lg X 2 in w X 1-1/4 in d; stamped "G-25"; ECOM dwg SC-B-25315			2	2	

FEDERAL STOCK NUMBER	DESIGNATION BY MODEL 1	2					DESCRIPTION	UNIT OF ISSUE	EXP	QTY AUTH	ILLUSTRATION FIGURE NO.	ILLUSTRATION ITEM NO.
							AB-105A, B/FRC (continued)					
5450-404-2243	X	X					BRACE, TOWER: Disgonal brace; L-shape; 2 ft 3-1/8 in lg X 1-1/4 in w X 1-1/4 in d; stamped "G-44"; ECOM dwg SC-B-25327			6	2	
5450-497-8590	X	X					BRACE, TOWER: Disgonal support; L-shape; 2 ft 3-1/2 in lg X 1-1/2 in w; stamped "G-8"; ECOM dwg SC-B-25297-1			132	2	
5450-497-8592	X	X					BRACE, TOWER: Disgonal support; L-shape; 2 ft 3-1/8 in lg X 3/4 in X 3/4 in d; stamp "G-9"; ECOM dwg SC-B-25297-2; ES-E-32738 and ES-A-32558			32	2	
5450-497-8591	X	X					BRACE, TOWER: Horiz support; 90 deg L-shape; 1 ft 11 in lg X 5/8 in w X 5/8 in d; stamp "G-10"; ECOM dwg SC-B-25297-3; ES-A-32738 and ES-A-32558			21	2	
5985-537-3758	X	X					BRACE, TOWER: Pedestal base brace; L-shape steel; 3 ft 10 in lg X 3 in w X 2-1/2 in d; stamped "4-00"; ECOM dwg SC-B-25334			4		
	X	X					BRUSH: Painting; plat; 8-1/16 in lg X 2 in w X 1/2 in d; (Eng Stk No. 38-5551.500-200)			1		
5975-186-3976	X	X					CLAMP, ELECTRICAL: Accom 1/2 in dia mtl; ECOM dwg SC-B-176514; (NOTE: Not used in equipment on order 28607-PH-55)			1		
8030-664-7793	X	X					COATING COMPOUND, BITUMINOUS, SOLVENT: Black color; 1 pt can; spec JAN-P-450, type II			2		
5975-193-6794	X	X					GUY: Tension member, wire rope; 101 ft 5 in lg; ECOM dwg SC-C-25335		NX	1		
5975-296-1842	X	X					GUY: Tension member, wire rope; 100 ft 6 in lg; ECOM dwg SC-C-25336		NX	2		
5820-188-5231	X	X					MOUNTING: Used at ant mtg; stamped "G-31"; ECOM dwg SC-B-25319			2		
5985-188-5232	X	X					MOUNTING: For mtg ant support; stamped "G-30"; ECOM dwg SC-B-25318			1		
5985-188-5238	X	X					MOUNTING: Used as ant mtg; stamped "G-21"; ECOM dwg SC-B-25312			2		
	X	X					NUT, PLAIN HEXAGON: 5/8 in -11NC 2; 1-1/16 in across flats; ECOM dwg SC-D-25290-15; (Ord Stk No. H101-8458082)			2		
5315-298-0885	X	X					PIN, COTTER: 1/8 in dia X 1 in lg; 100 pins per box; Fed spec FF-P-3866 type B ECOM dwg SC-D-25290-26			2		
5820-224-4627	X	X					PLATE, ANTENNA MAST: Triangular shape; 1 ft 4-3/4 in lg X 11-7/8 in w; stamped "G-14"; ECOM dwg SC-D-25299			1	2	

FEDERAL STOCK NUMBER	DESIGNATION BY MODEL 1	2					DESCRIPTION	UNIT OF ISSUE	EXP	QTY AUTH	ILLUSTRATION FIGURE NO.	ILLUSTRATION ITEM NO.
							AB-105A, B/FRC (continued)					
5820-224-6474	/	/					PLATE, ANTENNA MAST: Use as a gusset; 9-1/8 in lg X 6 in w X 3/16 in thk; stamped "G-32"; ECOM dwg SC-B-25320			1	2	
5820-224-6475	/	/					PLATE, ANTENNA MAST: Irregular shape; stamped "G-15B"; 5-1/8 in lg X 4-1/2 in w X 4-1/2 in d; ECOM dwg SC-B-25304			1		
5820-228-6804	/	/					PLATE, ANTENNA MAST: Irregular shape; 6-25/32 in lg X 4 in w X 1/4 in thk; stamped "G45"; ECOM dwg SC-B-25326			1	2	
5820-228-6806	/	/					PLATE, ANTENNA MAST: 9-3/4 in lg X 8-1/8 in w X 3/16 in thk; stamped "G-36"; ECOM dwg SC-B-25323			2	2	
5985-321-6693	/	/					PLATE, BOTTOM: Tapered U-shape; 6 in lg X 5-3/8 in w base; stamped "G-16"; ECOM dwg SC-B-25308			1	2	
4030-228-6815	/	/					PLATE, GUY: 18-3/4 in lg X 4 in w X 3/16 in thk; stamped "G-38"; ECOM dwg SC-D-25325-2			1	2	
5450-228-6817	/	/					PLATE, GUY: 8-1/8 in lg X 4-1/4 in w X 3/16 in thk; stamped "G-47"; ECOM dwg SC-C-25329-2			2	2	
4030-228-6818	/	/					PLATE, GUY: 8-1/8 in lg X 4-1/4 in w X 3/16 in thk; stamped "G-46"; ECOM dwg SC-C-25329-1			2	2	
5450-404-2997	/	/					PLATE, REINFORCING: V-shape on 60 deg angle; 12 in lg X 2 in w X 0.135 in thk stamped "G7"; ECOM dwg SC-B-25296			27	2	
5820-404-3014	/	/					POST, SUPPORTING: 60 deg V-shape; 2 ft 5-3/4 in lg X 2 in w X 2 in d; stamped "G-2"; ECOM dwg SC-B-25291-2			3	8	
5820-404-3015	/	/					POST, SUPPORTING: 60 deg V-shape; 5 ft 3/4 in lg X 2 in w X 2 in d; stamped "G-3"; ECOM dwg SC-B-25292			3	11	
5820-404-3016	/	/					POST, SUPPORTING: 60 deg V-shape; 9 ft 11-3/4 in lg X 2 in w X 2 in d; stamped "G-4"; ECOM dwg SC-B-25293			15	12	
5820-404-3017	/	/					POST, SUPPORTING: 60 deg V-shape; 5 ft 11-3/4 in lg X 2 in w X 2 in d; stamped "G-5"; ECOM dwg SC-B-25294			3	16	
5820-404-3018	/	/					POST, SUPPORTING: 60 deg V-shape; 5 ft 11-3/4 in lg X 2 in w X 2 in d; stamped "G-6"; ECOM dwg SC-B-25295			3	17	
5920-404-3013	/	/					POST, SUPPORTING: 60 deg V-shape; 2 ft 11-3/4 in lg X 2 in w X 2 in d; stamped "G-1"; ECOM dwg SC-B-25291-1			3	8	

FEDERAL STOCK NUMBER	DESIGNATION BY MODEL 1	2					DESCRIPTION	UNIT OF ISSUE	EXP	QTY AUTH	ILLUSTRATION FIGURE NO.	ILLUSTRATION ITEM NO.
							AB-105A, B/FRC (continued)					
4030-228-6816	/	/					PROTECTOR, POLE: 18-3/4 in lg X 4 in w X 0.203 in thk; stamped "G-37"; ECOM dwg SC-D-25325-1			1		
5975-243-8344	/	/					ROD, ANCHOR: Turnbuckle type; c/o 6 in turnbuckle w/7 in lg thimble eye on one end and 6 ft 5 in rod on other end; 7 ft lg o/s; ECOM dwg ES-E-32736			2		
5975-246-0707	/	/					ROD, GROUND: 8 ft lg X 1/2 in dia; cone point; ECOM dwg SC-D-25290-8			1		
4030-227-1737	/	/					SHACKLE: Anchor type; U-shape 4 in lg X 2-1/4 in w; 9/16 in dia stock; Hubbard part No. 6799			1		
4030-230-3460	/	/					SHACKLE: Anchor type; U-shape 2-1/4 in lg X 1-1/2 in w; 5/16 in dia stock; Thomas C Lauglin No. G-209-5/16; (NOTE: Used in all equipments on all orders previous to Order 28607-PH-55)			2		
4030-281-8442	/	/					SHACKLE: To attach guy to anchor rod; for 6/8 in dia rope; ECOM dwg SC-C-25335-1			1		
5450-404-3197	/	/					STEP: For triangular steel tower; 5-1/2 in lg X 3-3/8 in w X 0.060 in thk; stamp "G11"; ECOM dwg SC-B-25298-1			27	8	
5450-404-3198	/	/					STEP: For triangular steel tower; 5-1/2 in lg X 3-3/8 in w X 0.060 in thk; stamped "G-12"; ECOM dwg SC-B-25928-2			29	8	
5820-232-7766	/	/					SUPPORT, ANTENNA: Steel; angular shape; 3 ft 5-3/4 in lg X 3 in w X 2-1/2 in d; stamped "3-00"; ECOM dwg SC-B-25333			1		
5985-240-6117	/	/					SUPPORT, ANTENNA: Steel; L-shape; 4 ft 2-7/8 in lg X 2 in w X 2 in d; stamped "2-00"; ECOM dwg SC-B-25332			4		
5450-355-7631	/	/					SUPPORT, MOUNTING BASE: Stamped "1-00"; cap plate; 9-5/8 in sq base X 4-5/8 in h; ECOM dwg SC-C-25331			1		
5940-204-5077	/	/					TERMINAL, LUG: 1-7/16 in lg X 72 in w; Thomas and Betts No. 35401; (NOTE: Used in equipments on all orders previous to Order 28607-PH-55.)			2		
5340-194-9864	/	/					TURNBUCKLE: Open buckle type; 14-1/2 in lg o/a; 12 in take up; Wind turbine No. TA1; (NOTE: Used in equipments on all orders previous to Order 28607-PH-55.)			1		
5310-186-7387	/	/					WASHER, FLAT: 5/16 in id X 3/4 in od X 0.125 in thk			3		
5310-199-6990	/	/					WASHER, LOCK: Split; 0.255 in id X 1/2 in od X 0.062 in thk; Stronghold Screw part No. 6450T			2		

FEDERAL STOCK NUMBER	DESIGNATION BY MODEL 1	2					DESCRIPTION	UNIT OF ISSUE	EXP	QTY AUTH	ILLUSTRATION FIGURE NO.	ILLUSTRATION ITEM NO.
							AB-105A, B/FRC (continued)					
5310-194-0021	/	/					WASHER, LOCK: Split 0.406 in id X 0.656 in od X 0.094 in thk; Br and Str part no. 92153; ECOM dwg SC-D-25290-23			695		
6145-170-6467	/	/					WIRE, ELECTRICAL: Bare; No. 4 awg cond c/o 7 strands; Spec MIL-W-3861, class B, type C	ft		6		
4010-221-2706	/	/					WIRE, STRANDED, STEEL: Rd; 1/2 in dia; Spec MIL-W-12567, type No. WS-4/U	ft		100		
9505-596-1651	/	/					WIRE, STEEL, ALLOY: Rd 0.083 in dia; Spec MIL-W-3314, type 1 (NOTE: Use in equipments on orders previous to Order 28607-PH-55)	ft		12		
							RUNNING SPARE ITEMS					
5305-141-2870	/	/					BOLT, MACHINE: Sq head; incl hex nut; 3/8 in -16-NC-2; 1-1/4 in lg; ECOM dwg SC-D-25290-11 and 13			5		
5306-206-4651	/	/					BOLT, MACHINE: Sq head; incl hex nut; 3/8 in -16NC-2; 1 in lg; ECOM dwg SC-D-25290-10			30		
	/	/					BOLT, MACHINE: Sq head; incl hex nut; 3/8 in -16-NC-2; 1-1/2 in lg; ECOM dwg SC-D-25290-12 and 13; (Ord stk No. H101-8457955)			2		
5450-497-8590	/	/					BRACE, TOWER: Diagonal support; L-shape; 2 ft 3-1/2 in lg X 1-1/2 in w; stamped "G-8"; ECOM dwg SC-B-25297-1			2	14	
5450-497-8592	/	/					BRACE, TOWER: Diagonal support; L-shape; 2 ft 3-1/8 in lg X 3/4 in w X 3/4 in d; stamp "G-9"; ECOM dwg SC-B-25297-2; ES-B-32738 and ES-A-32558			1	10	
5450-497-8591	/	/					BRACE, TOWER: Horiz support; 90 deg L-shape; 1 ft 11 in lg X 5/8 in w X 5/8 in d; stamp "G-10"; ECOM dwg SC-B-25297-3, ES-A-32738 and ES-A-32558			2	12	
5310-194-0021	/	/					WASHER, LOCK: Split 0.406 in id X 0.656 in od X 0.094 in thk; Br and Str part No. 92153; ECOM dwg SC-D-25290-23			37		

By Order of the Secretary of the Army:

HAROLD K. JOHNSON,
General, United States Army,
Chief of Staff.

Official:

KENNETH G. WICKHAM,
Major General, United States Army,
The Adjutant General.

Distribution:

Active Army:

USASA (2)
CNGB (1)
CC–E (7)
Dir of Trans (1)
CofEngrs (1)
TSG (1)
CofSptS (1)
USACDCEA (1)
USACDCCBRA (1)
USACDCCEA (1)
USACDCOA (1)
USACDCQMA (1)
USACDCTA (1)
USACDCADA (1)
USACDCARMA (1)
USACDCAVNA (1)
USACDCARTYA (1)
USACDCSWA (1)
USACDCCEA (Ft Huachuca) (1)
USAARENBD (2)
USAMC (5)
USCONARC (5)
ARADCOM (5)
ARADCOM Rgn (2)
OS Maj Comd (4)
LOGCOMD (2)
USAMICOM (4)
USASTRATCOM (4)
USAESC (70)
MDW (1)
Armies (2)
Corps (2)
USAC (3)
Svc Colleges (2)
USASCS (5)
USASESCS (5)
USAADS (2)
USAAMS (2)
USAARMS (2)
USAIS (2)
USAES (2)
USATC (2)
WRAMC (1)
Army Pic Cen (2)
USACDCEC (10)
Instl (4) except
Ft Gordon (10)
Ft Huachuca (10)
Ft Carson (25)
Ft Knox (12)
DPG (5)
Gen Dep (2)
Sig Sec, Gen Dep (5)
Sig Dep (12)
Army Dep (2) except
LBAD (14)
SAAD (30)
TOAD (14)
LEAD (7)
SHAD (3)
NAAD (5)
SVAD (5)
CHAD (3)
ATAD (10)
Sig FLDMS (2)
AMS (1)
USAERDAA (2)
USAERDAW (13)
USACRREL (2)
Units org under fol TOE (2 ea):
11–7
11–16
11–57
11–97
11–98
11–117
11–155
11–157
11–500 (AA–AC)
11–557
11–592
11–597

NG: State AG (3).

USAR: None.

For explanation of abbreviations, used see AR 320–50.

☆ U.S. Government Printing Office: 1967—250-595/7688B