

ANTENNA SUPPORT

AB-105C/FRC

**This reprint includes all changes in effect at the time of publication;
change 3.**

***DEPARTMENTS OF THE ARMY AND THE AIR FORCE
JULY 1952***

CHANGES

NO. 3



HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, D. C., 4 May 1967

ANTENNA SUPPORT A-105C/FRC

TM 11-2615A, 15 July 1952, is changed as follows:

Place the following warning inside the front cover:

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.

*Page 1, paragraph 1b, line 1. Change "Appendix I" to: Appendix A.
(As changed by C 2, 10 Sep 63). Delete the last sentence and add paragraph 1.1 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 the equipment. DA Pam 310-4 is an index of current technical manuals, technical bulletins, supply manuals (types 7, 8, and 9), bulletins, lubrication work orders, and modification work orders that are available through publications supply channels. The index lists the individual parts (-10, -20, -35P, etc) and the latest changes to the revisions of each equipment publication.

Paragraph 2 (as changed by C 2, 10 Sep 63). Delete and substitute:

2. Forms and Records

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

*This change supersedes C 1, 3 February 1955; C 2, 10 September 1963, and together with C 3, 4 May 1967, to TM 11-2615, 2 August 1948, supersedes TM 11 5985-210-10P, 2 March 1959.

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b. *Report of Damaged or Improper Shipment.* Fill out and forward DD Form 6 (Report of Damaged or Improper Shipment) as prescribed in AR 700-58 (Army), NAVSANDA Publication 378 (Navy), and AFR 714 (Air Force).

c. *Reporting of Equipment Manual Improvements.* DD 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. Army Electronics Command, ATTN: AMSEL-MRNMP-AD, Fort Monmouth, N.J., 07703.

Page 2, paragraph 3 (as changed by C 1, 3 Feb 55). Delete paragraph 3 and substitute:

3. Description and Use

a. Antenna Support AB-105C/FRC is a guyed, latticed steel tower, 73 feet 10 inches in height. It is used in groups of four to support rhombic antennas (fig. 1), or in groups of two to support other horizontal antennas. It may also be used to support curtain-type or omnidirectional antennas.

b. The support is a triangular-shaped assembly made up of a base, a bottom plate assembly, and 10 steel lattice sections. A support less than 73 feet 10 inches in height may be constructed by omitting one or more of the intermediate sections. All tower members are steel with a hot-dipped galvanized finish. A steel pedestal base, three steel wire rope guys, three guy anchors, guy attachment plates, and all the hardware necessary for assembling the support are supplied with the equipment.

Paragraph 4, line 11 (as changed by C 1, 3 Feb 55). Change 6,600 lb. to 8,000 lb.

Paragraph 5 (changed by C 1, 3 Feb 1955). Delete paragraph 5 and substitute:

5. Table of Components

Component	Required No.	Height (in.)	Depth (in.)	Length (in.)	Weight (lb)
Supporting post G1-A.....	3	2	2	35 3/4	6.3
Supporting post G2-A.....	3	2	2	29 3/4	5.2
Supporting post G3-A.....	3	2	2	60 3/4	10.7
Supporting post G4-A.....	15	2	2	119 3/4	21.0
Supporting post G5-A.....	3	2	2	71 3/4	12.6
Supporting post G6-A.....	3	2	2	71 3/4	12.6
Splice plate G7.....	27	1 7/8	1 7/8	12	2.0
Diagonal brace G8-A.....	132	3/32	1 1/2	27 1/2	1.0

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Component	Required No.	Height (in.)	Depth (in.)	Length (in.)	Weight (lb)
Diagonal brace G9-A.....	32	3/32	1 1/2	27 1/8	.9
Horizontal (step) brace..... G10-A.	72	1/8	1/8	23	1.2
Angle G44-A.....	6	1 1/4	1 1/4	27 1/8	2.3
Supporting channel G17-B- Supporting channel G49	6 (3 required on Order No. 21350- P-54) 3 (Order No. 21350- P-54)	1 5/8 1 1/4	4 6	24 24	16.4 16.4
Angles G18, G19.....	2 (1 each)	2 1/2	2	23	5.3
Angle G20.....	1	3	2	23	7.7
Angles G22, G23, G24.....	3 (1 each)	1 1/4	1 1/4	23	1.9
Angle G25.....	2	2	1 1/2	30 3/8	5.8
Angles G27, G28.....	2 (1 each)	1 1/2	1 1/2	23	3.4
Angle G29.....	1	2 1/2	2	23	5.2
Bottom assembly G14-A.....	1	7 3/4	16 1/8	18 1/2	45.3
Bottom assembly G15-A.....	1	5 1/8	4 1/2	4 1/2	8.9
Bottom assembly G-16A.....	1	6 1/2	5 3/8	6	12.9
Antenna attachment plate..... G21.	1	3/16	2 1/4	23 3/4	3.0
Antenna attachment plate..... G30.	1	1/4	3	21 3/4	4.6
Antenna attachment plate..... G31.	2	1/4	3	4 1/4	.9
Gusset plate G32.....	1	3/16	6	9 1/8	3.1
Gusset plate G36.....	2	3/16	8 1/4	9 3/4	3.5
Guy attachment plates..... G37, G38.	2 (1 each)	3/16	4	18 3/4	4.2
Filler plate G45.....	1	1/2	4	6 25/32	3.8
Guy attachment plates G46, G47.	4 (2 each)	3/16	4 1/4	8 1/8	1.7
Top plate G48.....	1	20 3/4	14	23 1/2	40.4
Guy WR2.....	2		5/16 dia	100 ft 6 in.	25.2
Guy WR1.....	1		5/8 dia	101 ft 5 in.	99.5
Expanding anchor, 8-inch- Expanding anchor, 10-inch- Anchor rod for 10-inch anchor, with turnbuckle, eyebolt, and square nut.	2 1 1	8 10	8 10 1 dia	131	10.0 14.0 32.2
Anchor rod for 8-inch an- chor, with turnbuckle, eyebolt, and square nut.	2		1/2 dia	84	6.0
Ground rod.....	1		1/2 dia	96	5.0
Foundation bolts, includ- ing: 2 hexagonal nuts.....	2		3/4 dia 3/4 dia	19	2.5

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Component	Required No.	Height (in.)	Depth (in.)	Length (in.)	Weight (lb)
2 washers.....			3/4 dia		
Pedestal base, consisting of:	1				14.5
Corner post (2-00).....	4	2	2	54	27.0
Base angle, inside (3-00).	4	3	2 1/2	41 3/4	15.6
Base angle, outside (400).	4	3	2 1/2	46	17.2
Cap plate (1-00).....	1	5 1/3	9 5/8	9 5/8	27.0

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

Page 4, figure 2 (as changed by C 1, 3 Feb 55). Extend the arrow from number 9 down to indicate the base channel, which is located between guy WR1 (34) and bottom plate assembly G16A (7).

Page 5, legend for figure 2, item 9 (as changed by C 1, 3 Feb 55).

Change "Base channel G17-B" to: Supporting channel G17-B or G49 (Order No. 21350-P-54).

Paragraph 6a(1) (as changed by C 1, 3 Feb 55). Change the second sentence to read: An additional hole, located 2 inches from the midpoint of the post, is provided in each leg.

Paragraph 6a(3) (as changed by C 1, 3 Feb 55). Change the second sentence to read: Three additional holes are provided in each leg of the V, starting 15 5/8 inches from either end of the post., These holes are spaced 14 3/4 inches apart, center to center'(fig. 11).

Page 7, paragraph 6e, line 9 (as changed by C 1, 3 Feb 55).

Change 5/32 inch to: 25/32-inch.

Paragraph 6i(1) (c), second sentence (as changed by C 1, 3 Feb 55). Delete and substitute: One end of one leg is clipped 30°; the other end of this leg is clipped 60°.

Page 11, paragraph 6m(1) (as changed by C 1, 3 Feb 55).

Delete and substitute:

- (1) G37 and G38. Guy attachment plates G37 and G38 are hot-dipped, galvanized steel plates, each 4 inches wide, 18 3/4, inches long, and 3/16 inch thick. One corner of each plate is sheared back 1 9/16(, inches and this end of the plate is bent upward at a 300 angle, along a diagonal line starting approximately 2 1/2 inches from the sheared end. The bent-up portion of the plate contains one 13/16-inch diameter hole and three 13/32-inch diameter holes. The flat portion contains eight 13/32-inch diameter holes.

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Page 8, paragraph 6h (as added by C 1, 3 Feb 55). Add the following note after the last sentence:

Note. Three supporting channels G49 replace the three supporting channels G17-A in section C 1 of Antenna Supports AB-105C/FRC furnished on Order No. 31250-P-54. The G49 is similar to the G17-B, except that it is 6 inches wide with 1 15/16-inch flanges and has three holes in each end.

Paragraph 6 i(1) (a) (as changed by C 1, 3 February 1955).

Delete and substitute:

- (a) *Angles G18 and G19.* Angles G18 and G19 are 21/2 by 23 inches long. Three corners of each angle are clipped 90° and the remaining corner is clipped 60°. One 13/32-inch diameter hole, located 13/4, inches from one end, is provided in each 2-inch face, and one 1 1/2-inch diameter hole located 5/8-inch from the end, is provided in each end of each 21/2-inch face. One angle G18 and one angle G19 are used in section C5 (fig. 14) of each antenna support.

Paragraph 6o (as changed by C 1, 3 Feb 55). After the last sentence, add the following note:

Note: Compression-type sleeves instead of wire rope clips, and rigging-type (slip-in) strain insulators instead of regular strain insulators (with holes for the wire rope) are used with guys WR1 and WR2 furnished on Orders No. 38139-P-3 and No. 21350-P-54. The rigging-type insulators are not installed but are shipped separately and must be inserted in the guys (para 22c (4)) before the guys are attached to the tower.

Page 12, paragraph 6q (as changed by C 1, 3 Feb 55).

Delete subparagraph q and substitute the following:

q. Ten-Inch Expansion Anchor. The 10-inch expansion anchor is 10 inches in diameter when it is closed and has an area of 200 square inches when it is expanded. It has a holding power, in sand, of 12,000 pounds. This anchor is used with a 1-inch diameter by 10-foot, 11-inch long anchor rod which has an oval eye at one end and is threaded at the other end; the rod includes a turnbuckle. One 10-inch expansion anchor and its associated anchor rod are used to secure the 5/8-inch diameter back guy (WR1).

Paragraph 6r (as changed by C 1, 3 Feb 55), delete subparagraph r and substitute the following:

r. Eight-Inch Expansion Anchor. The 8-inch expansion anchor is 8 inches in diameter when it is closed and has an area of 100 square inches when it is expanded. It has a holding power, in sand, of 8,000 pounds. This anchor is used with a 1/2-inch diameter by 7 feet long anchor rod, which has an oval eye at one end and is threaded at the other end; the rod includes a turnbuckle. One 8-inch expansion anchor and its associated rod are used to secure each of the 5/16-inch diameter guys (WR2).

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Packaging data chart

Item	Container	Size (in.)	Weight (lb)	Contents	
				Quantity	Item
1	Bundle of steel parts.....	2 1/2 by 6 by 109	240	3 3 7 3 2 (1/2 in.)	Supporting post G1-A. Supporting post G2-A. Supporting post G4-A. Supporting post G5-A. Anchor rod (complete with turnbuckle and eyebolt on one end, square nut on other end).
2	Bundle of steel parts.....	22 by 6 by 120	287	3 8 3 1 1 (1 in.)	Supporting post GS-3A. Supporting post GS-4A. Supporting post GS-6A. Copper weld ground rod. Anchor rod (with turnbuckle and eye bolt on one end, square nut on other end).
3	Box of steel parts.....	13 by 15 by 36	511	134 33 74 6 6 (3 furnished on Order No. 21351 P-54)	Diagonal brace G8-A. Diagonal brace G9-A. Horizontal brace (step) G1-A. Angle G44-A. Supporting channel G17-B.

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4	Box of miscellaneous parts.....	12 by 13 by 26	285	3	Supporting channel G49 (Order No. 21350P44 only).
				1	Angle G18.
				1	Angle G19.
				1	Angle G20.
				1	Angle G22.
				1	Angle G23.
				1	Angle G24.
				2	Angle G25.
				1	Angle G27.
				1	Angle G28.
				1	Angle G29.
				1	Bottom assembly G15-A.
				1	Bottom assembly G16-A.
				1	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 (% in.).
				2	Foundation bolt with hexagonal nuts.
				1	Bottom assembly G14-A.
				27	Splice plate G7.
				1	Top plate G49.
				2	Shoulder bolt "X".

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Packaging data chart

Item	Container	Size (in.)	Weight (lb)	Contents	
				Quantity	Item
5	Box of guys and spare parts	37 1/2 by 37 1/2 by 11	820	6 ft	#4B and S. 7-strand soft-drawn copper wire.
				1	Expanding anchor (10-inch).
				2	Expanding anchor (8-inch).
				540	Bolt (1 in. 1g) 3/8 in.
				102	Bolt (1 1/4 in. 1g) 3/8 in.
				12	Bolt (1 3/8 in. 1g) 1/2 in.
				6	Bolt (1 1/2 in. 1g) 3/4 in.
				2	Bolt (2 in. 1g) 3/4 in.
				648	Hexagonal nuts (3/8 in.).
				2	Hexagonal nuts (5/8 in.).
				12	Hexagonal nuts (1/2 in.).
				648	Lockwasher, heavy (for 3/8-in. diameter bolt).
				12	Lockwasher, heavy (for 1/2-in. diameter bolt).
				2	Lockwasher, heavy (for 3/4-in. diameter bolt).
				2	Flat washers (for 3/8-in. bolt).
				2	Flat washers (for 3/4-in. bolt).
				2	Cotter pins (1/8 by 1 in.).
2	Terminal lugs (for #4 stranded wire).				
1	Ground wire clamp.				
1	Guy WR1.				
2	Guy WR2.				

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				3	Wire rope clip (5/8 in.).
				2	Wire rope clip (5/16 in.).
				2	Kearney clips (5/16 in.).
				1	Shackle (5/8 in. dia).
				1	Shackle (5/16 in. dia).
				12 ft	Seizing wire.
				15	Strain insulators, rigging type (Orders No. 38139P-53 and 21350-P-54).
6	Bundle of steel parts (pedestal base).	6 by 6 by 54	195	4	Corner post (2-00).
				4	Base angle (3-00).
				4	Base angle (4-00).
7	Box of miscellaneous parts (pedestal base).	9 5/8 by 9 5/8 by 5 1/8	35	1	Cap plate (1-00).
				41	Bolt (1 1/2 in. 1g) 3/8 in.
				41	Hexagonal nuts (3/8 in.).
				2 pt	Paint, black, asphalt.
				41	Lockwashers, heavy (for 3/8-in. diame- ter bolt).
				1	Brush, paint.

Note. The shackles, wire rope clips, and kearney clips listed in items 3 and 5 of the above chart are not supplied on Orders No. 38139-P-53 and 21350-P-54.

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Page 17, chapter 2. Add the following warning after the note:

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 follow safe practices.

Page 18, paragraph 11a, second sentence (as changed by C 1, 3 Feb 55). Change the second sentence to read: The steel pedestal base is supplied as a component of Antenna Support AB-105C/FRC.

Page 24, paragraph 11d(2), heading. Change "four-way" to: 10-inch.

Subparagraph (a), line 2. Change "four-way" to: 10-inch.

Paragraph lid(3), heading. Change "two-way" to: 8-inch.

Subparagraph (a), line 2. Change "two-way" to: 8-inch.

Page 25, paragraph 12a(1) (as changed by C 1, 3 Feb 55). Add the following after the last sentence: Eighteen each bolts, lockwashers, and hexagonal nuts are required to make each section-to-section connection.

Paragraph 12b(1) (as changed by C 1, 3 Feb 55). Add the following at the top of the section C 1 components list: 3 supporting channels G17-B or G49 (Order No. 21350-P-54).

Page 27, paragraph 12b(1) (as changed by C 1, 3 Feb 55). Add the following note under the section C1 components list:

Note. Forty-two bolts, 3/8 - by 1-inch, and 43 lockwashers and hexagonal nuts for 3/8-inch diameter bolts are required to assemble section C 1 of antenna supports furnished on Order No. 21350-P-54.

Paragraph 12b(4) (as changed by C1, 3 Feb 55). Add the following after the last sentence: When assembling section C1 of antenna supports furnished on Order No. 21350-P-54, use channel G49 instead of channel G17-B. Match the three bottom holes in posts G1-AL and G1-AR with the six end holes in the channel. Insert one 3/8- by 1-inch bolt through each of the three matching holes in G49 and G1-AR and through each of the two bottom matching holes in G49 and G1-AL. Leave the third holes in G49 and G1-AL open until diagonal brace G9-A is installed ((5) below). Secure the five bolts with lockwashers and nuts.

Paragraph 12b(5) (as changed by C 1, 3 Feb 55). Add the following after the last sentence: When a channel G49 is used instead of a G17-B ((4) above), insert a 3/8- by 1-inch bolt through the hole in the bottom end of brace G9-A and through the open matching holes in G1-AL and channel G49. Secure the three members together with the bolt, a lockwasher, and a nut.

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Page 28, figure 8 (as changed by C 1, 8 Feb 55). After "G17-B", add: OR G49.

Page 29, paragraph 12b (12) (as changed by C 1, 3 Feb 55).

Add the following note after the last sentence:

Note. Channel G49 replaced channel G17-B in antenna supports furnished on Order No. 21350-P-54.

Page 30, figure 9 (as changed by C 1, 3 Feb 55). In the BASE ATTACHMENT view and in the FACE A, FACE B, and FACE C views, after "G17-B", add: OR G49.

Page 38, paragraph 12 (as changed by C 1, 3 Feb 55). Make the following changes:

Subparagraph f(3), line 3. Change "2-inch" to: 2 1/2-inch.

Subparagraph f(4), line 8. Change "downward" to: upward.

Line 4. Change "2 1/2-inch to: 2-inch"; and "downward" to inward.

Page 40, paragraph 12g(1), component list (as changed by C 1, 3 Feb 55). Change "65 bolts" to: 67 bolts; "94 lockwashers" to: 96 lockwashers; and "94 hexagonal nuts" to: 96 hexagonal nuts.

Page 45, paragraph 12g(19) (g) (as-changed by C 1, 3 Feb 55).

Add subparagraph (h) after subparagraph (g).

(h) Attach horizontal braces G27 and G28 to horizontal brace G29; use one 3/8- by 1-inch long bolt, with a lockwasher and nut to make each attachment.

Page 49, paragraph 13j (as changed by C 1, 3 Feb 55). Add the following: Use 18 bolts, lockwashers, and hexagonal nuts' to make each section-to-section connection.

Page 50, figure 18 (as changed by C 1, 3 Feb 55). Make the following changes: In the FACE C view, change the overall height of the support from 73' 7" to 73' 10"; change the height of C1 from 4' 0-1/4" to 4' 3"; and change the height of C7 from 5' 11 3/4" to 6'.

In section A-A, change the number of guy clips from 3 to 2.

Add the following note:

NOTE

COMPRESSION-TYPE SLEEVES INSTEAD OF WIRE ROPE CLIPS ARE USED ON GUYS WR1 AND WR2 FURNISHED ON ORDERS NO. 38139-P-53 AND 21350-P-54.

Page 52, paragraph 14d(3) (as changed by C 1, 3 Feb 55). After the third sentence, add the following: Strain insulators must be installed in the guys before the guys are attached to the tower. Some guys are furnished with the insulators already in place. Guys furnished without insulators have a pair of interlocked loops at each place that an insulator must be inserted. Rigging or slip-in type insulators are furnished with these guys. Install one insulator in each pair of loops (para 22c(4)).

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Page 56, paragraph 14e(6), note (as changed by C 1, 3 Feb 55).
In line 2, change "butting" to: cutting, and in the last line, change "G-bolt" to: U-bolt.

Page 60, paragraph 15 (as changed by C 1, 3 Feb 55). After subparagraph d, add the following note:

Note. When the grounding system for antenna supports furnished on Order No. 21350-P54 is being installed, attach the terminal lugs of the ground wire to the support with the same bolts, lockwashers, and nuts that secure supporting channel G49 to supporting post G1-A.

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CHAPTER 3

OPERATOR'S MAINTENANCE INSTRUCTIONS

Section I. OPERATOR'S MAINTENANCE INSTRUCTIONS

17. Scope of Operator's Maintenance

The maintenance duties of the operator of the AB-105C/FRC are listed below, 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 20.1).
- b. Cleaning (para 20.2)

18. Material Required for Maintenance

- a. Cleaning Compound (FSN 7930-395-9542).
- b. Sandpaper No. 000 (FSN 5350-271-7939).
- c. Cleaning cloth (FSN 83052673015)
- d. Grease, Aircraft and Instruments (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 required.

19. Operator's 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 20, 20.1, and 20.2 cover routine systematic care and cleaning essential to the proper upkeep of the AB-105C/FRC.

b. *Preventive Maintenance Checks and Services.* The preventive maintenance checks and services chart (para 20.1) 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.

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To assist operators in maintaining combat serviceability. the chart indicates what to check, how to check. and the normal indications; the *References* column lists the illustrations or paragraphs 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.

20. Preventive Maintenance Checks and Services Periods

Paragraph 20.1 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.

20.1. Operator’s Daily Preventive Maintenance Checks and Services Chart

Seq No.	Item	Procedure	Reference
1	Antenna and antenna support.	<p>Warning: Shut down the transmitter before performing the following:</p> <ul style="list-style-type: none"> a. Check for completeness..... b. See that the installation complies with operational requirements. c. Check for cleanliness. Remove any grease, dirt, corrosion, and fungus. d. see that all painted surfaces are free of bare spots, rust, and corrosion. 	<ul style="list-style-type: none"> a. App B. b. Chap. 2. c. Para 20.2. d. Para 23.
2	Guy wires.....	Inspect tension and tighten turnbuckles if necessary, to maintain correct tension.	Para 14f and fig. 20.
3	Turnbuckles.....	Inspect threaded parts for rust and corrosion. If necessary, apply a thin coat of grease (GL) to threaded parts.	Fig. 20.

20.2. Cleaning

Inspect the exteriors of the AB-105C/FRC. The exterior surfaces should be free of dust, dirt, grease, and fungus.

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

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Warning: Cleaning compound is flammable and its fumes are toxic. Provide adequate ventilation. *Do not use near flame.*

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

20.3 Lubrication

Apply a small amount of grease (WB) 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

21. Scope of Organizational Maintenance

- a. This chapter contains instructions covering organizational maintenance for the AB-105C/FRC.
- b. Organizational maintenance consists of the following:
 - (1) Preventive maintenance (para 21.2 through 21.5)
 - (2) Touchup painting (para 23).
 - (3) Replacement of parts (para 22).

21.1. Tools and Materials Required

- a. *Tools.* Tool Equipment TE-87-A
- b. *Materials.*
 - (1) Cleaning Compound (FSN 7930-395-9542).
 - (2) Cleaning cloth (FSN 8305267-3015).

21.2. Organizational Monthly Maintenance

Monthly preventive maintenance checks and services on the AB-105C/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 21.3) in the sequence listed.

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

21.3. Organizational Monthly Preventive Maintenance Checks and Services Chart

Seq No.	Item	Procedure	Reference
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.

Seq No.	Item	Procedure	Reference
2	Mounting and assembly bolts.	Inspect for tightness and 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 No. 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, and make necessary adjustments or repairs.	Para 10 through 16.

21.4. Organizational Quarterly Maintenance

Quarterly preventive maintenance checks and services on the AB-105C/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 39750. Perform all the checks and services listed in the organizational quarterly preventive maintenance checks and services chart (para 21.5) in the sequence listed.

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

21.5. Organizational Quarterly Preventive Maintenance Checks and Services Chart

Seq No.	Item	Procedure	Reference
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 16.
3	Cleanliness.....	See that the equipment is clean-	Para 20.2.
4	Preservation.....	Check all surfaces for evidence of fungus. Remove rust and corrosion and spot-paint bare spots.	Para 23.

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Seq No.	Item	Procedure	Reference
5	Publications.....	See that all publications are complete,, serviceable, and current.	DA Pam 3104.
6	Modifications.....	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 3104.

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CHAPTER 4
REPAIR INSTRUCTIONS

22. Replacement of Parts

a. General. To replace defective components of a completely erected and installed antenna support, lower the support to the ground. Damage to an erected antenna support is uncommon and ordinarily results from hurricane winds or from bombing which may cause partial or complete destruction.

Warning: During the repair 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.

b. Replacement of Bracing Members.

- (1) Remove the antenna and lower the antenna support to the ground (para 11 through 16, 24, and TM 11-2617).
- (2) Loosen and remove the nuts and bolts that secure the defective component in place. When replacing defective components, replace the uppermost ones first and work down. The top end of each piece is the first to be connected to the bolts that hold more than one piece. Use a driftpin 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.

- (1) Install a temporary guy.
 - (a) Obtain a length of 3/4-inch diameter rope, such as that supplied in Tool Equipment TE-87-A. Wrap one end of the rope around the supporting post immediately above the permanent guy attachment plates of the affected guy on section C6. Knot the rope securely.
 - (b) Run the rope to the anchor of the guy that has a defective insulator. Pull the rope taut and secure it to the anchor.
 - (c) Detach the affected guy from the antenna support and from the anchor.

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- (2) If the defective insulator is a regular type of insulator (with holes) secured with either wire rope clips or compression-type sleeves, replace it with a rigging-type (slip-in) insulator.
 - (a) Smash the defective insulator and break the pieces away from the guy loops. *Do not cut the cable.* When the broken insulator has been removed, the two cable loops that secured it will be interlocked.
 - (b) Install a rigging-type insulator in the loops ((4) below).
- (3) If the defective insulator is a rigging-type insulator, slip out the defective insulator and install a new one ((4) below).
- (4) To install a rigging-type insulator in the interlocked loops of the guy cable, proceed as follows:
 - (a) Slide one loop of the pair of interlocked loops against the clips or compression sleeve that secure the other loop. Slide this second loop over a rigging-type strain insulator and into one of the deep grooves so that the wide end of the loop fits into the deep part of the groove.
 - (b) Slide the other loop over the insulator and into the deep groove located on the side of the insulator opposite, and in a plane perpendicular to, the groove containing a loop.
 - (c) Seat each loop securely into its respective groove so that the clips or compression sleeves that secure the loops are opposite to one another on opposite sides of the strain insulator, and a straight line would pass through both loop fastenings and the center of the insulator.

23. Touchup Painting

- a. Paint antenna support components when they begin to rust or show signs of corrosion.
- b. Remove all rust or corrosion from channels, braces, nuts, bolts, attachment plates, etc. Use a steel wire brush; obtain a bright, smooth finish.
- c. Wipe clean with a clean, dry cloth.
- d. Paint with olive drab paint; use a high-grade outside paint for metal.

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APPENDIX A

REFERENCES

Following is a list of applicable references available to the operator and maintenance personnel of Antenna Support

AB-105C/FRC: DA Pam 3104	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 Instruction for Field Use.
TM 11-4861	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. MX-739/FR.
TM 11-5985210-20P	Organizational Maintenance Repair Parts for Antenna Supports AB-105A/FRC, AB-105B/FRC, and AB-105C-FRC.
TM 11-5985-21035P	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.

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APPENDIX B
BASIC ISSUE ITEMS

Section I. INTRODUCTION

B1. 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.* Not 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 an 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.

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Section II. FUNCTIONAL PARTS LIST

FEDERAL STOCK NUMBER	DESIGNATION BY MODEL	DESCRIPTION	UNIT OF ISSUE	EXPENDABILITY	QUANTITY AUTHORIZED	ILLUSTRATION	
						FIGURE NO.	ITEM NO.
5820-537-3739 ORD THRU ACC		<p align="center">ITEM COMPRISING AN OPERAELE EQUIPMENT</p> <p align="center">ANTENNA SUPPORT AB-1050/FRC</p> <p>ANTENNA SUPPORT AB-1050/FRC: ECOM dwg SC-D-25290</p> <p>TECHNICAL MANUAL TM 11-2615A</p> <p>Requisition through pinpoint account number if assigned; other through nearest Adjutant General Facility</p> <p>NOTE: For technical manuals the quantity indicates the maximum nuber 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 retured to publication supply central through AC channels.</p>	ea	NY	2		
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	2	
4030-202-4079		ANCHOR, GUY: expanding type; 4-way expansion; steel; 8 in dia when closed; ECOM dag SC-D-25790T-L			2	2	
4030-242-8791		ANCHOR, GUY: expanding type; 4 way; 10 in dia when closed, FCOM dwg SC-D-25290H-3			2	2	
5985-376-9230		BASE, ANTENNA SUPPORT: steel, marked "G14A"; ECOM dwg SC-D-25290H-3			1	2	
5306-206-4975		BOLT, HOOK: steel; hook 2-3/8 in 1g from ctr line; 3/4 in -10NC2 X 1 ft 6-3/4 in 1g; thd 3 in 1g, ECOM dwg SC-D-27421			2		
5306-498-8016		BOLT, EYE: 12 in 1g o/a; spec MIL-Z-17871: Auto Electric cat #S-2778; (NOTE: used in equipments on orders previous to Order 28607-PH-55)			2		
5306-506-5524		BOLT, EYE: thimble eye: 6-1/4 in 1g o/a ; ECOM dwg SC-D-25290-2; (NOTE: used in equipments in orders 28607-PH-55 and 50965-PH-57)					
5306-510-9835		BOLT, EYE 10-13/16 in 1g o/a; Sig dwg SC-D-25290-1; (NOTE: use in equipment on orders 28607-PH-55 and 20965-PH-57)			1		
5305-141-2870		BOLT MACHINE sq head ; inc1 hex nut ; 3/8 in -16-NC-2 ; 1-1/4 in 1g ; ECOM dwg SC-D-02559-11 snd 13			99		

FEDERAL STOCK NUMBER	DESIGNATION BY MODEL	DESCRIPTION	UNIT OF ISSUE	EXPENDABILITY	QUANTITY AUTHORIZED	ILLUSTRATION	
						FIGURE NO.	ITEM NO.
5306-206-4761		AB-105C/FRC (Continued) BOLT MACHINE: sq head; incl hex unit; 3/8 in -16NC-2; 1 in 1g ECOM dwg SC-D-25290-10			516		
5306-637-8791		BOLT, MACHINE: steel; sq head; incl hex nut ; 3/4 in -10NC 2 X 1-1/4 in; 2-1/4 in 1g 1/a ; EOCM dwg SC-D-25290-19 and 22			2		
		BOLT, MACHINE: sq head; incl hen nut; 3/8 in -16-Nc-2; 1-1/2 in 1g ; ECOM dwg SC-D-2529C-12 aed 13; (Ord Stk No. H101-8457955)			5		
		BOLT, MACHINE: sq head ; incl hex nut; 1/2 in -13-NC-2-1-1/4 in 1g; 1-3/8 in 1g o/a ECOM dwg SC-D-25290-20 and 21; (Ord Stk No- 8101-8457979)			12		
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 1g; ECOM dwg SC-B-25307					
5450-404-2233		BRACE, TOWER: cross brace ; 90 deg angle shate 1 ft 11 in 1g X L-1/4 in w X 1-1/4 in d; stamped "G-23" ECOM dWg SC-B-25313-2			1	16	
5430-404-2234		BRACE, TOWER: cross brace ; L-shape; 1 ft 11 in 1g X 1-1/4 in w X 1-1/4 in d ; stamped "G-24" ECOM dwg SC-B-25314			1	16	
5450-404-2235		BRACE, TOWER cross brace; L-shape; 1 ft 11 in 1g X 1 -1/2 in w X 1-1/2 in d ; stemped "G-28"; ECON dwg SC-3-25316-1			1	16	
5450-404-2236		BRACE, TOWER: cross brace; L-shape; 1 ft 11 in 1g X 2-1/2 in w X 2 in d ; stemped "G-19"; ECOM dwg 25319-2			1	14	
5450-404-2237		BRACE, TOWER: arena brace; L-shape; 1 ft 11 in 1g X 2-1/2 in w X 2 in d; stemped "G-18"; ECOM dwg SC-B-25310-1			1	14	
5450-404-2239		BRACE, TOWER: arena brace; L-shape; 1 ft 11 in 1g X 1-1/2 in w X 1-1/2 in d; stemped "G-28"; ECOM dwg SC-B-25317			1	16	
5450-404-2244		BRACE, TOWER: arena brace; L-shape; 1 ft 11 in 1g X 2-1/2 in a X 2 in d; stemped "G-29"; ECOM dwg SC-B-25316-2			1	16	
5450-404-2246		BRACE, TOWER: cross brace ; L-shape ; 1 ft 11 in 1g X 1-1/4 in w X 1-1/4 in d ; stemped "G-22"; ECOM dwg SC-D-25313-1			1	15	
5820-392-5403		BRACE, TOWER: cross brace ; L-shape ; 1 ft 11 in 1g X 1-1/4 in w X 1-1/4 in d ; stemped "G-44A"; ECOM dwg SC-B-83027			6	15	
5450-404-2232		BRACE, TOWER: diagonal brace ; L-shape ; 2 ft 6-3/8 in 1g X 2 in w X 1-1/4 in d ; stemped "G-25"; ECOM dwg SC-B-25315			2	15	

FEDERAL STOCK NUMBER	DESIGNATION BY MODEL	DESCRIPTION	UNIT OF ISSUE	EXPENDABILITY	QUANTITY AUTHORIZED	ILLUSTRATION	
						FIGURE NO.	ITEM NO.
5820-392-5402		AB-105C/FRC (continued) BRACE, TOWER: horiz brace; L-shape; 1 ft 11 in 1g X 3 in w 1 leg, 2 in w other leg ; stamped "G20"; ECOM dwg SC-B-83026			1	14	
5450-404-2230		BRACE, TOWER: horiz support; L-shape; 1 ft 11 in 1g X 1 in w X 3/4 in thk ; stamped "G10A"; ECOM dwg SC-B-27434			72	15	
5985-537-3758		BRACE, TOWER: pedestal base brace ; L-shape steel ; 3 ft 10 in 1g X 3 in w X 2-1/2 in d; stamped "4-00"; ECOM dwg SC-B-25334			4		
5985-537-3759		BRACE, TOWER: tower strut; 90 deg V-shape; 2 ft 3-1/2 in 1g ea leg of V, 27/32 in w ; stamped "G8-A"; ECOM dwg SC-B-83024-1			132	14	
5985-537-3760		BRACE, TOWER: tower strut; 90 deg V-shape ; 2 ft 3-1/8 in 1g ea leg of V, 27/32 in w; stamped "G9-A"; ECOM dwg SC-B-83024-2			32	9	
5450-355-8588		BRACKET: to connect bottom assembly G14 to section C1 to top plate G48 to section C7 2 ft 1g X 4 in w X 1-5/8 in h; stamped "G-17B", ECOM dwg SC-B-83025; (NOTE: not used in equipment on order 21350-PH-54)			6		
5450-355-8587		BPACKET: to mt base swivel to foundation ; U-shape; 6 in 1g X 5 in w X 6-1/2 in h; stamped "G-16A"; ECOM dwg SC-C-16265			1		
5820-310-2209		BRACKET: steel; channel shape; 24 in 1g X 6 in w X 1-59/64 in h, stamped "G-49" ; ECOM dwg SC-B-135676			6		
		BRUSH: painting; flat; 8-1/16 in 1g X 2 in w X 1/2 in d ; (Eng Stk No. 38-5551. 500-200)			1		
5975-186-3976		CLAMP, ELECTRICAL: accom 1/2 in dia mtl; ECOM dwg SC-B-176514; (NOTE: not used in equipment on order 28607-PH-55)			1		
5975-248-5814		CLAMP, ELECTRICAL: accom 3/8 in mtl ; 1-1/4 in 1g X 1-1/16 in w X 7/8 in h; Hubbard part 9491; (NOTE: used in equipment on Order 28607-PH-55 only)			1		
8030-664-7793		COATING COMPOUND, BITUMINOUS, SOLVENT: black color; 1 pt can ; spec JAN-P-450, type II			2		
5975-193-6794		GUY: tension member, wire rope ; 101 ft 5 in 1B; ECOM dwg SC-C-25335		NX	1		
5975-296-1842		GUY: tension member, wire rope ; 100 ft 6 in 1a; BCOM dwg SC-C-25336			2		
5820-188-5231		MOUNTING: used as ant mtg; stamped "G-31"; ECOM dwg SC-B-25319			2		

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GPO 811-566-2

FEDERAL STOCK NUMBER	DESIGNATION BY MODEL	DESCRIPTION	UNIT OF ISSUE	EXPENDABILITY	QUANTITY AUTHORIZED	ILLUSTRATION	
						FIGURE NO.	ITEM NO.
		AB-105C/FRC (continued)					
5985-188-5232		MOUNTING: For mtg ant support ; stamped "G-30" ECOM dwg SC-B-25318			1		
5985-188-5238		MOUNTING: used as ant mtg ; stamped "G-21" ECOM dwg SC-B-25312			2		
		NUT, PLAIN HFXAGONAL: 5/8 in -11NC 2 ; 1-1/16 in cross flats : ECOM dwg SC-D-25290-15; (Ord stk No. H101-8458082			2		
5315-298-0885		PIN, CUTTER: 1/8 in dia X 1 in 1g, 100 pins per box Fed spec-FF-P-3866 type B ECOM dwg SC-D-25290-26			2		
5820-224-6474		PLATE, ANTENNA MAST: use as a gusset; 9-1/8 in 1g X 6 in w 3/16 in thk ; stamped "G-32" ECOM dwg SC-B-25230			1	16	
5820-224-6475		PLATE, ANTENNA MAST irrelar shpe ; stamped (G-15B) 5-1/8 IN 1g 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 ig X 4 in w X 1/2 in thk;; stamped "G45" ; ECOM dwg SC-B-25326			1	18	
5820-228-6806		PLATE, ANTENNA MAST: 9-3/4 in 1g X 8-1/8 in w X 3/16 in thk ; stamped "G-36"; ECOM dwg SC B-25323			2	16	
5820-335-9353		PLATE, BASE: triangular shape, 1 ft 9 1n 1g X 1/4 in thk; stamped "G-48"; ECOM dwg SC-C-83028			1	2	
4030-228-6815		PLATE, GUY: 18-3/4 in 1g X 4 in w X 3/16 in thk; stamped "G-38" ECOM dwg SC-D-25325 -2			1	16	
5450-228-6817		PLATE, GUY: 18-1/8 in 1g X 4 in w X 3/16 in thk; stamped "G-47" ECOM dwg SC-D-25329 -2			2	16	
4030-228-6818		PLATE, GUY: 18-1/8 in 1g X 4 in w X 3/16 in thk; stamped "G-46" ECOM dwg SC-C-25329-1			2	16	
5450-404-2997		PLATE, REINFORCING: V- shape on 60 deg angle; 12 in 1g X 2 in w X 0.135 in thk ; stamped "C7 " ; ECOM dwg SC-B-25296			27	15	
5450-355-9460		POST, SUPPORTING: V-shape, 5 ft 11-3/4 in 1g X 2 in w: stamped "G5A:" ;ECOM dWg SC-B-83022			3	16	
5820-378-5518		POST,SUPPORTING: V-shape, 60 deg angle; 2 ft 5-3/4 in 1g X 2 in w; stamped "G-2A"; ECOM dwg SC-B-83018-2			3	10	
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FEDERAL STOCK NUMBER	DESIGNATION BY MODEL	DESCRIPTION	UNIT OF ISSUE	EXPENDABILITY	QUANTITY AUTHORIZED	ILLUSTRATION	
						FIGURE NO.	ITEM NO.
		AB-105C/FRC (continued)					
5820-378-5521		POST,SUPPORTING: V-shape, 60 deg ; 5 ft 11-3/4 in 1g ea leg ; ECOM dwg SC-B-83023			3		
5985-321-9497		POST,SUPPORTING: V-shape, 60 deg angle ; 2 ft 11-3/4 in 1g X 2 in w ; stamped "G-1A"; ECOM dwg SC-B-83019-1			3	9	
5985-378-5519		POST,SUPPORTING: V-shape, 60 deg angle ; 5 ft 3/4 in 1g X 2 in w ; stamped "G-3A"; ECOM dwg SC-B-83020			3	11	
5985-378-5520		POST,SUPPORTING: V-shape, 60 deg angle ; 9 ft 11-3/4 in 1g X 2 in w ; stamped "G-4A"; ECOM dwg SC-B-83021			15	12	
4030-228-6816		PROTECTOR, POLE: 18-3/4 in 1g X 4 in w X 0.203 in thk stamped "G-37"; ECOM ; dwg SC-D-25325-1			1	15	
4030-281-0102		ROD, ANCHOR: tumbuckle type; c/o 6 ft in 1g anchor rod, tumbuckle and eye bolt; 7 ft 1g o/a ; Hubbard dwg No. S-73057, part No. MK-TA2			2		
5975-305-5755		ROD, ANCHOR ASSEMBLY: ECOM dwg SC-D-25290-1 (NOTE: used on Orders No. 28607-PH-55 and 50965-PH-57 only)			1		TA-1
5975-246-0707		RTOD, GROUND: 8 ft 1g x 1/2 in dia ; cone point ; ECOM dwg SC-D-25290-8			1		
4030-230-3460		SHACLE: anchor type ; U-shape 2-1/4 in 1 g 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		
4030-524-0141		SHACKLE, ANCHOR: shoulder eye head type ; 1 end thd ; ECOM dwg SC-C-25336-1 ; (NOTE ; used in equipments on orders 28607-PH-55 and 50965-PH-57)			2		
4030-281-8442		SHACKLE: to attack guy to anchor rod: for 6/8 l dia rope ; ECOM dwg SC-C-25335 -1			1		
5820-232-7766		SUPPORT, ANTENNA: steel: anglular shape ; 3 ft 5-3/4 in 1g 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: anglular shape ; 4 ft 5-3/4 in 1g X 2 in w X 2 in d ; stamped "2-00" ; ECOM dwg SC-B-25332			4		
5450-255-7631		SUPPORT, MOUNTING BASE : stamped :1-00" ; cap olate : 9-5/8 in sq base X 4-5/8 in h ; ECOM dwg SC-C25331			1		

FEDERAL STOCK NUMBER	DESIGNATION BY MODEL	DESCRIPTION	UNIT OF ISSUE	EXPENDABILITY	QUANTITY AUTHORIZED	ILLUSTRATION	
						FIGURE NO.	ITEM NO.
		AB-105C/FRC (continued)					
5940-283-3999		TERMINAL, LUG: rd tongue type, squeeze grip, ECOM dwg SC-D-25290-5; (NOTE: used in equipments on Order 28607-PH-55 and 50965-PH-57)			2		
5940-204-5077		TERMINAL, LUG 1-7/16 in 1g X 72 in w; Thomas and Betts No. 35401; (NOTE: used in equipments on all orders previous to Order 28607-PA-55)			2		
5340-194-9864		TURNBUCKLE open buckle type; 14-1/2 in 1g o/a, 12 in take up. Wind Turbine No. TA1; (NOTE: used in equipments on all orders previous to Order 28607-PH-55)			1		
5340-205-oi99		TURNBUCKLE: pipe buckle type, 7-1/4 in 1g w/ locknuts : 6 in take up: ECOM dwg SC-D-25290-2; (NOTE: used in equipments on Orders 28607-PH-55 and 50965-PH-57)			2		
5340-545-8557		TURNBUCKLE: pipe buckle type; 14-1/2 in 1g v/locknut= 12 in take up; ECOM dwg SC-D-25290-1; (NOTE: used in equipments on Orders 28607-PH-55 and 50965-PH-57)			1		
5310-299-0118		WASHER, FLAT: rd; 3/8 in bolt size; 1 in od X 5/64 in thk; MIL-STD-MS-15795-215; ECOM dwg SC-D-25290-17			2		
5310-209-6588		WASHER, FLAT: rd; for 3/4 in dia bolt; 2 in od X 5/32 in thk, Fed spec QQ-B-416, type II, class C; ECOM dwg SC-D-25290-27			2		
5310-194-0021		WASHER, LOCK: Split 0.416 in id X 0.656 in od X 0.094 in thk; Br and Str part No. 92153			618		
5310-543-5128		WASHER, LOCK: split; 0.889 in od X 1/2 in bolt size; Fed spec FF-W-84, Class A, style 3			12		
		WASHER, LOCK: for 3/4 in bolt size; 1-5/16 in od X 0.226 in thk; ECOM dwg SC-D-25290-25; (Ord Stk No. H101-8459961)			2		
6145-170-6467		WIRE, ELECTRICAL: bare ; No. 4 AWG cond c/o 7 strands; Spec MIL-W-3861, class B, type C			6		
9505-596-1651		WIRE, STEEL ALLOY: rd 0.083 in dia; Spec MIL-W-3314, type No. 1; (NOTE: use in equipments on order previous to Order 28607-PH-55)			12		

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FEDERAL STOCK NUMBER	DESIGNATION BY MODEL	DESCRIPTION	UNIT OF ISSUE	EXPENDABILITY	QUANTITY AUTHORIZED	ILLUSTRATION	
						FIGURE NO.	ITEM NO.
		AB-105C/FRC (continued)					
		RUNNING SPARE ITEMS					
5305-141-2870		BOLT, MACHINE: sq head ; incl hex nut; 3/8 in -16-NC-2; 1-1/4 in 1g; 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 1g; ECOM dwg SC-D-25290-10			30		
		BOLT, MACHINE: sq head; incl hex nut; 3/8 in -16-NC-2; 1-1/2 in 1g; ECOM dwg PC-D-25290-12 and 13; (Ord Stk No. H101-8457955)			2		
5450-404-2230		BRACE, TOWER- horiz support; L-shape; 1 ft 11 in 1g X 1 in w X 3/4 in thk; stamped "G10A"; ECOM dwg SC-B-27434			2	13	
5985-537-3759		BRACE, TOWER: tower strut; 90 deg V-shape; 2 ft 3-1/2 in 1g ea leg of V, 27/32 in w; stamped "G8-A.; ECOM dwg SC-B-83024-1			2	13	
5985-537-3760		BRACE, TOWER tower strut; 90 deg V-shape, 2 ft 3-1/8 in 1g ea leg of V, 27/32 in w; stamped "G9-A.; ECOM dwg SC-B-83024-2			1	9	
5310-194-0021		WASSER, 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		

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By Order of the Secretary of the Army:

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11-16 11-157
11-57 11-500(AA-AC)
11-97 11-557
11-98 11-592
11-117 11-597

NG: State AG (3).

USAR: None.

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

U.S. Government Printing Office. 1967-250-595/7684B

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811-566-1

ANTENNA SUPPORT

AB-105C/FRC

United States Government Printing Office

Washington: 1952

DEPARTMENTS OF THE ARMY AND
THE AIR FORCE

WASHINGTON 25, D. C., 15 July 1952

TM 11-2615A/TO 16-35AB105-6 is published for the information and guidance of all concerned.

[AG 413.44 (3 Jun 52)]

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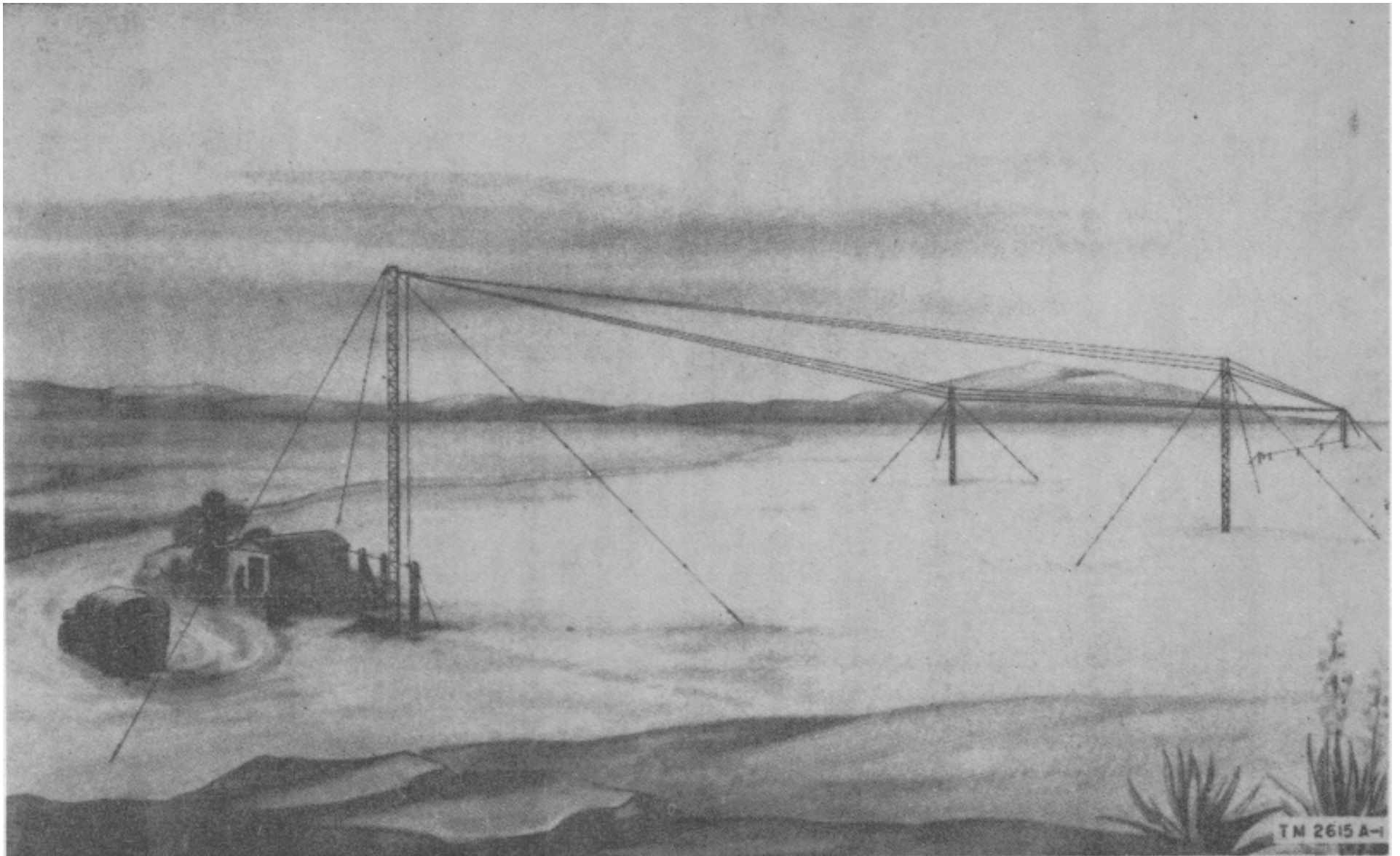


Figure 1. Antenna Support AB-105C/FRC.

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CHAPTER 1
INTRODUCTION

Section I. GENERAL

1. Scope

a. These instructions are published for the information and guidance of the personnel to whom this equipment is issued. They include complete information on the assembly, erection, and the organizational and field maintenance of the equipment. They apply only to Antenna Support AB-105C/FRC.

b. Appendix I contains a list of current references including supply catalogs, technical manuals, and other available publications applicable to the equipment. Appendix II contains an identification table of parts.

2. Forms and Records

The following forms will be used for reporting unsatisfactory conditions of Army equipment and in performing preventive maintenance:

a. DD Form 6, Report of Damaged or Improper Shipment, will be filled out and forwarded as prescribed in SR 745-45-5 (Army), NAV DEPT SERIAL 85POO (Navy), and AFR 71-4 (Air Force).

b. DA Form 468, Unsatisfactory Equipment Report, will be filled out and forwarded to the Office of the Chief Signal Officer, as prescribed in SR 700-45-5.

c. AF Form 54, Unsatisfactory Report, will be filled out and forwarded to Commanding General, Air Materiel Command, Wright-Patterson Air Force Base, Dayton, Ohio, as prescribed in SR, 70045-5 and AFR 65-26.

d. DA AGO Form 11-238, Operator First Echelon Maintenance Check List for Signal Corps Equipment-Radio Communication, Direction Finding, Carrier, Radar, will be prepared in accordance with instructions printed on the back of the form.

e. DA AGO Form 11-239, Second and Third Echelon Maintenance Check List for Signal Corps Equipment-Radio Communication, Direction Finding, Carrier, Radar will be prepared in accordance with instructions printed on the back of the form.

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f. Use other forms and records as authorized.

Section II. DESCRIPTION AND DATA

3. General

a. Antenna Support AB-105C/FRC is a guyed, latticed tower, used in groups of four to support rhombic antennas and in groups of two to support other horizontal antennas (fig. 1).

b. The support is a triangular-shaped assembly consisting of tower sections, guys, turnbuckles, anchors, anchor rods, 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, which includes one 3-foot section, is 4 feet high. All sections are steel with a hot-dipped galvanized finish. Heights of less than 73 feet 7 inches may be obtained by omitting one or more sections, as required.

4. Technical Characteristics

Material..... Structural grade steel.
 Loading..... Designed to withstand 11,000 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 5/8-in. diameter, 28,100 lb.; 5/16-in. diameter, 6,600 lb.
 Anchors Four-way and two-way expansion types.

5. Table of Components

Component	Required No.	Height (in.)	Depth (in.)	Length (in.)	Weight (lb)
Supporting post G1-A	3	2	2	35 ¾	6.3
Supporting post G2-A	3	2	2	29 ¾	5.2
Supporting post G3-A	3	2	2	60 ¾	10.7

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Component	Required No.	Height (in.)	Depth (in.)	Length (in.)	Weight (lb)
Supporting post G4-A	15	2	2	119 $\frac{3}{4}$	21.0
Supporting post G5-A	3	2	2	71 $\frac{3}{4}$	12.6
Supporting post G6-A	3	2	2	71 $\frac{3}{4}$	12.6
Splice plate G7	27	1 $\frac{7}{8}$	2 $\frac{7}{8}$	12	2.0
Diagonal brace G8-A	132	$\frac{3}{2}$	1 $\frac{1}{2}$	27 $\frac{1}{2}$	1.0
Diagonal brace G9-A	32	$\frac{3}{2}$	1 $\frac{1}{2}$	27 $\frac{1}{8}$.9
Horizontal (step) brace G10-A	72	$\frac{1}{8}$	$\frac{3}{4}$	23	1.2
Angle G44-A	6	1 $\frac{1}{4}$	1 $\frac{1}{4}$	27 $\frac{1}{8}$	2.3
Supporting channel G17-B	6	1 $\frac{5}{8}$	4	24	11.2
Angles G18, G19	2 (1 each)	2 $\frac{1}{2}$	2	23	5.3
Angle G20	1	3	2	23	7.7
Angles G22, G23, G24	3 (1 each)	1 $\frac{1}{4}$	1 $\frac{1}{4}$	23	1.9
Angle G25	2	2	1 $\frac{1}{2}$	30 $\frac{3}{8}$	5.8
Angles G27, G28	2 (1 each)	1 $\frac{1}{2}$	1 $\frac{1}{2}$	23	3.4
Angle G29	1	2 $\frac{1}{2}$	2	23	5.2
Bottom assembly G14-A	1	7 $\frac{7}{8}$	16 $\frac{1}{8}$	18 $\frac{1}{2}$	45.3
Bottom assembly G15-A	1	5	4 $\frac{1}{2}$	4 $\frac{1}{2}$	8.9
Bottom assembly G16-A	1	6 $\frac{1}{2}$	5 $\frac{3}{8}$	6	12.9
Antenna attachment plate G21	1	$\frac{1}{8}$	2 $\frac{1}{4}$	23 $\frac{3}{4}$	3.0
Antenna attachment plate G30	1	$\frac{1}{4}$	3	21 $\frac{3}{4}$	4.6
Antenna attachment plate G31	2	$\frac{1}{4}$	3	4 $\frac{1}{4}$.9
Gusset plate G32	1	$\frac{1}{8}$	6	9 $\frac{1}{8}$	3.1
Gusset plate G36	2	$\frac{1}{8}$	8 $\frac{1}{8}$	9 $\frac{3}{4}$	3.5
Guy attachment plates G37, G38	2 (1 each)	$\frac{1}{8}$	4	18 $\frac{3}{4}$	4.2
Filler plate G45	1	$\frac{1}{2}$	4	6 $\frac{3}{8}$	3.8
Guy attachment plates G46, G47	4 (2 each)	$\frac{1}{8}$	4 $\frac{1}{4}$	8 $\frac{1}{8}$	1.7
Top plate G48	1	20 $\frac{3}{4}$	$\frac{1}{4}$	23 $\frac{1}{2}$	40.4
Guy WR2	2		$\frac{1}{8}$ dia	123	25.2
Guy WR1	1		$\frac{5}{8}$ dia	125	99.5
Expanding anchor, two-way	2	8	8		10.0
Expanding anchor, four-way	1	10	10		14.0
Anchor rod for four-way anchor, with turnbuckle, eyebolt, and sq nut.	1		1 dia	131	32.2
Anchor rod for two-way anchor, with turnbuckle, eyebolt, and sq nut.	2		$\frac{1}{2}$ dia	84	6.0
Ground rod	1		$\frac{1}{2}$ dia	96	5.5
Foundation bolts, including	2		$\frac{3}{4}$ dia	19	
2 Hexagonal nuts			$\frac{3}{4}$ dia		
2 Washers			$\frac{3}{4}$ dia		
Pedestal base, consisting of	1				
Corner post (2-00)	4	2	2	54	27.0
Base angle, inside (3-00)	4	3	2 $\frac{1}{2}$	41 $\frac{3}{4}$	15.6
Base angle, outside (4-00)	4	3	2 $\frac{1}{2}$	46	17.2
Cap plate (1-00)	1	5 $\frac{1}{8}$	9 $\frac{5}{8}$	9 $\frac{5}{8}$	27.0

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

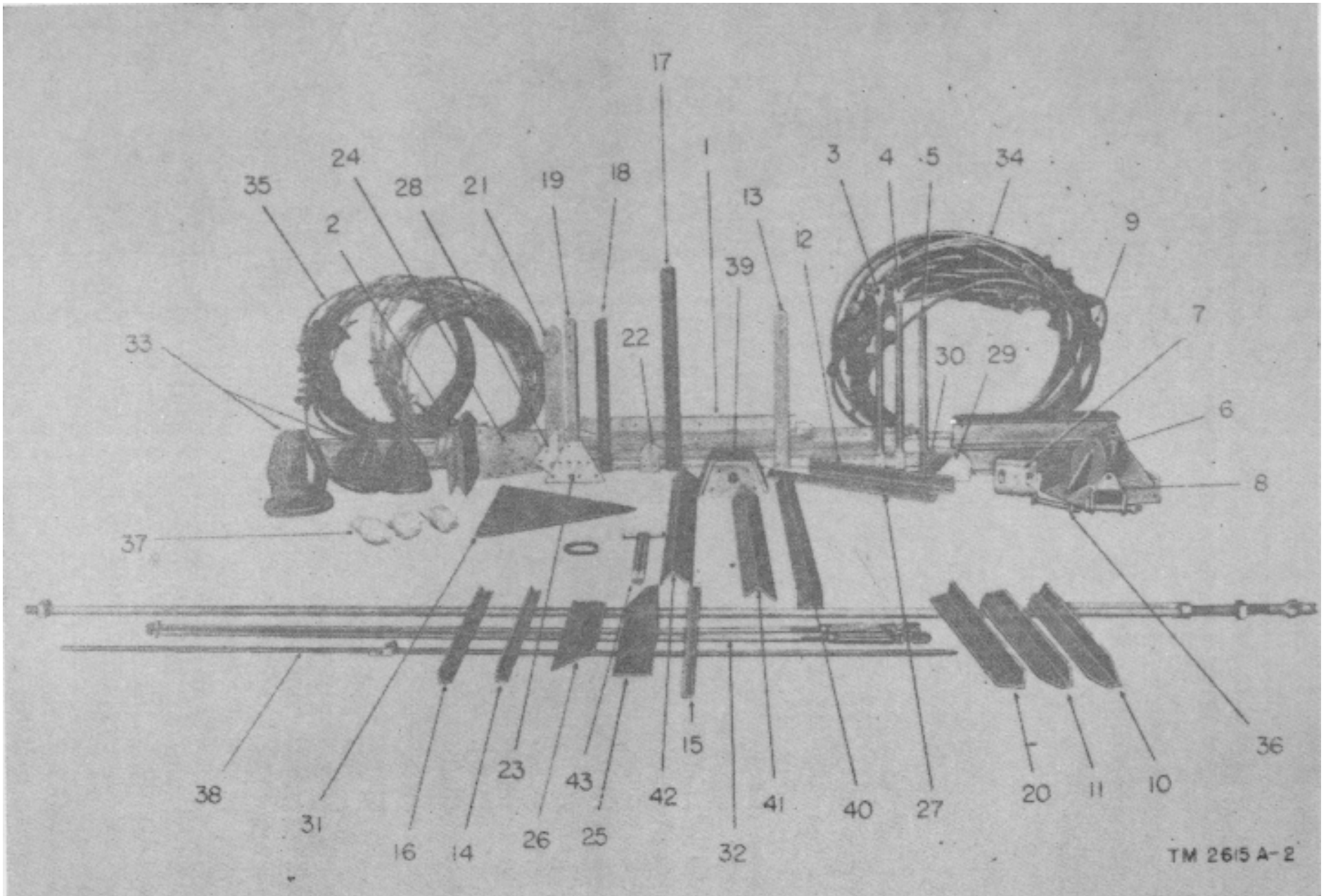


Figure 2. Antenna Support AB-105C/FRC, component parts.

1. Supporting posts G1-A through G6-A.
2. Reinforcing (splice) plate G7.
3. Diagonal brace G8-A.
4. Diagonal brace G9-A.
5. Horizontal brace G10-A.
6. Bottom assembly G14-A.
7. Bottom plate assembly G16-A.
8. Bottom plate assembly G15-A.
9. Base channel G17-B.
10. Angle G18.
11. Angle G19.
12. Angle G20.
13. Antenna attachment plate G21.
14. Angle G22.
15. Angle G23.
16. Angle G24.
17. Angle G25.
18. Angle G27.
19. Angle G28.
20. Angle G29.
21. Antenna attachment plate G30.
22. Antenna attachment plate G31.
23. Gusset plate G32.
24. Gusset plate G36.
25. Guy attachment plate G37.
26. Guy attachment plate G38.
27. Angle G44-A.
28. Filler plate G45.
29. Guy attachment plate G46.
30. Guy attachment plate G47.
31. Top plate G48.
32. Anchor rods.
33. Anchor.
34. Guy WR1.
35. Guy WR2.
36. Shoulder bolt.
37. Bolts, nuts, washers.
38. Ground rod.
39. Cap plate 1-00.
40. Corner post 2-00.
41. Base angle 3-00.
42. Base angle 4-00.
43. Foundation bolt.

Figure 2-Continued.

6. Description of Major Components

a. Supporting Posts. All supporting posts used with Antenna Support AB-105C/FRC are hot-dipped galvanized, V-shaped (60°), 10-gage steel angles. The posts are used as tower legs in the various sections of the antenna support and are designated as G1-A, G2-A, G3-A, G4-A, G5-A, and G6-A.

- (1) *G1-A.* Each supporting post G1-A is 2 by 2 by 35 3/4 inches long with three 13/32-inch diameter holes punched in each 2-inch leg at both ends. An additional hole, located in the exact center of the post, is provided in each leg. Three supporting posts G1-A are required in the C1 section of each antenna support (fig. 8).
- (2) *G2-A.* Supporting posts G2-A are 2 by 2 by 29 3/4 inches long and have three 13/32-inch diameter holes punched in each 2-inch leg of the V at both ends. One additional hole is punched in each face in the exact center of the post. Three supporting posts G2-A are used in the C2 section of the antenna support assembly (fig. 10).
- (3) *G3-A.* The three supporting posts G3-A required in the C3 section of each antenna support are each 2 by 2 by 60 3/4 inches long with three 13/32-inch diameter holes punched in both ends of each 2-inch leg. Three additional holes are provided in each leg of the V starting 2 feet 6 3/8 inches from either end of the post and spaced on 1-foot 2 3/4-inch centers (fig. 11).

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- (4) G4-A. Each supporting post G4-A is 2 by 2 by 119 3/4 inches long and has three holes of 13/32-inch diameter punched in each 2-inch leg of the angle at both ends. Seven additional holes are provided in each leg, starting 1 foot 3 3/8 inches from either end of the post and spaced on 1-foot 2 3/4-inch centers. Fifteen supporting posts G4-A are used in the C4 and C5 sections of each antenna support (figs. 12 and 14).
- (5) G5-A. Each of the supporting posts G5-A is 2 by 2 by 71 3/4 inches long. Three 13/32-inch diameter holes are punched in the bottom and five 13/32-inch diameter holes are punched in the top of each 2-inch leg. Six additional 13/32-inch diameter holes are punched in each 2-inch leg. Three supporting posts G5-A are used in the C6 section of each antenna support (fig. 15).
- (6) G6-A. Supporting post G6-A is 2 by 2 by 71 3/4 inches long with three 13/32-inch diameter holes punched in both legs of the V at the top and bottom. Four additional holes are provided in each leg. Three supporting posts G6-A are required in the C7 section of each antenna support (fig. 17).

b. *Splice Plates G7.* Reinforcing (splice) plates G7 are V-shaped, 10-gage steel, formed angles 1 7/8 by 1 7/8 by 12 inches long. Each plate has six 13/32-inch diameter holes punched in each leg of the V and spaced 1 inch from the end and 2 inches apart. The splice plates are used to connect adjacent supporting posts (G1-A, G2-A, G3-A, G4-A, G5-A, and G6-A) to form the legs of the antenna support. Twenty-seven splice plates are required for each antenna support.

c. *Diagonal Braces.* All diagonal braces used with Antenna Support AB-105C/FRC are L-shaped, hot-dipped galvanized. formed angles fabricated of 13-gage steel. The ends of the braces are flattened and contain a single 13/32-inch diameter hole. These angles provide diagonal bracing to the antenna support.

- (1) G8-A. Diagonal braces G8-A are each 1 1/2 by 3/32 by 27 1/2 inches long. One hundred and thirty-two braces G8-A are used in sections C3, C4, and C5 of the antenna support (figs. 11, 13, and 14).
- (2) G9-A. Each diagonal brace G9-A is 1 1/2 by 3/32 by 27 1/8 inches long. Thirty-two braces are required for each antenna support in sections C1, C2, C6, and C7 (figs. 9, 10, 16, and 17).

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d. Horizontal Braces. Horizontal braces G10-A are L-shaped, hot-dipped galvanized, formed angles fabricated of 12-gage steel. Each brace is 1 by 3/4 by 1/8 by 23 inches long with a 13/32-inch diameter hole centered 5/8-inch from each end. Seventy-two horizontal braces are required for each antenna support. The braces are used as steps in addition to providing horizontal bracing to the antenna support.

e. Bottom Assembly G14-A. Bottom assembly G14-A consists of two hinge plates, two support plates, and a center plate electrically welded to a 1/4-inch thick bottom plate. The center plate, hinge plates, and one support plate are 3/8 inch thick; the other support plate is 1/2 inch thick. The bottom plate has six sides; three sides are 6 7/8 inches long and three sides are 11/34 inches long. Two 17/32-inch diameter holes, spaced on 5-inch centers, are located on the three sides of shorter dimension. The hinge plates are provided with two 5/52-inch diameter, line-drilled holes to accommodate the 3/4-inch shoulder bolt which connects bottom assembly G14-A to bottom plate assembly G15-A (par. *f* below). One G14 A assembly is required for each antenna support.

f. Bottom Plate Assembly G15-A. This is a 3/8-inch thick, double U-shaped, steel plate with a base 4 1/2 inches square and vertical sides 2 1/4 inches high. The sides are bent 90° to the base; each side of both U's, into which a bolt sleeve is welded, is provided with a 25/32-inch diameter, line-drilled hole, 1 inch from the top. The sheared ends taper from 4 1/2 inches at the base to 1 inch at the top. Bottom plate assembly G15-A is attached to bottom assemblies G14-A (par. *e* above) and G16-A (par. *g* below) by means of two 3/4- by 6 3/4-inch, high-shear shoulder bolts. Assembly G15-A is a part of the swivel at the base of the antenna support that is required to raise the support to a vertical position.

g. Bottom Plate Assembly G16-A. This assembly consists of a U-shaped, 3/8-inch thick steel plate, 5 3/8 inches wide by 6 long by 6 1/2 inches high. A 3/8-inch thick steel center plate, located on the centerline of the base between two elongated holes, is welded into this assembly. The sheared ends of the assembly taper from 6 inches at the base to 2 inches at the top. A 25/32-inch diameter, line-drilled hole is provided in each tapered side, 1 inch from the top; two elongated holes are in the base. One G16-A assembly is used for each antenna support to mount the base swivel to the pedestal base assembly or to a concrete foundation.

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h. Supporting Channels G17-B. These are formed steel channels, 4 inches wide by 2 feet long. Two flanges are each 1 5/8 inches high. Two 13/32-inch diameter holes are punched 1 1/8 inches from each end of the channel; two 17/32-inch holes are punched on 5-inch centers in the center of one flange. Six supporting channels G17-B are used for each antenna support: three to attach bottom assembly G14-A to section C1 (fig. 9) and three to attach top plate G48 to section C7 (fig. 17).

i. Angles. Formed steel angles of different dimensions are provided with Antenna Support AB-105C/FRC for use as horizontal and diagonal braces in the various antenna support sections. Angles are designated in the following description as *horizontal or diagonal braces*, according to their use.

(1) *Horizontal braces.*

- (a) *Angles G18 and G19.* Angles G18 and G19 are 2 1/2 by 2 by 3/16 by 23 inches long. All four corners of the angles are clipped 30°. Each 2-inch leg is provided with one 13/32-inch diameter hole, 1 3/4 inches from one end, and each 2 1/2-inch face is provided with one 13/32-inch diameter hole, 5/8 inch from either end. One angle G18 and one angle G19 are used in section C5 of each antenna tower (fig. 14).
- (b) *Angle G20.* This angle is 3 by 2 by 1/4 by 23 inches long. Both ends of the 3-inch leg are clipped 300. This leg has one 13/32-inch hole, 5/8 inch from each end. The 2-inch leg has one hole of the same diameter located in the exact center of the angle. One angle G20 is required in section C5 of each antenna support (fig. 14).
- (c) *Angles G22 and G23.* Angles G22 and G23 are each 1 1/4 by 1 1/4 by 1/8 by 23 inches long. Both ends of one leg are sheared 300. The other leg has one 13/32-inch diameter hole punched 5/8 inch from each end. One each of these angles is used in section C6 of the antenna support (fig. 16).
- (d) *Angle G24.* This angle, used in section C6 of the antenna support (fig. 16), is 1 1/4 by 1 1/4 by 1/8 by 23 inches long. One leg contains a 13/32-inch diameter hole punched 5/8 inch from each end; the other leg is blank.
- (e) *Angles G27 and G28.* Angles G27 and G28 are both 1 1/2 by 1 1/2 by 3/16 by 23 inches long. One leg of each angle is clipped back 3/4 inch at one end and 30° at the other end. One 13/32-inch diameter hole is punched 1 1/2 inches from the 3/4-inch clipped end. Three holes of the same

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diameter are located in the other end of this leg and are spaced 2 inches, 4 7/8 inches, and 7 3/16 inches from the end of the angle. Two holes of 7/16-inch diameter are punched in the other leg, one 5/8 inch from either end. Two 13/32-inch diameter holes also are provided in this leg and are spaced 2 5/8 inches and 4 5/8 from one end. One angle G27 and one angle G28 are used in section C6 of the antenna support (fig. 16).

- (f) *Angle G29.* Angle G29 is 2½ by 2 by 3/16 by 23 inches long. The 2 1/2-inch leg is clipped 1 inch back from each end and provided with one 13/32-inch diameter hole, 1 3/16 inch from each end. Two additional holes of the same diameter are contained in the 2 1/2-inch leg, each spaced 3/4 inch from the center of the angle. The 2-inch leg contains two 7/16-inch diameter holes, one punched 5/8 inch from either end. One angle G29 is used in section C6 of the antenna support (fig. 16).

(2) *Diagonal braces.*

- (a) *Angle G25.* This angle is 2 by 1½ by 3/16 by 30 3/8 inches long. Ten 13/32-inch diameter holes are punched in the 2-inch leg, one hole, 5/8 inch from each end of the angle and four holes spaced on 2-inch centers from each of the end holes. Two angles G25 are required in section C6 of the antenna support (fig. 16).
- (b) *Angle G44-A.* Six angles G44-A, each 1 1/4 by 1¼ by 1/8 by 27 1/8 inches long, are used in section C6 of each antenna support (fig. 16). Both ends of one leg are blocked 1 1/8 inches back; the other leg contains one 13/32-inch diameter hole located 5/8 inch from each end and 3/4 inch out from the point of the angle.

j. Antenna Attachment Plates. Three types of antenna attachments are supplied with the equipment for use in sections C5 and C6. One attachment plate G21 is required in section C5; one antenna attachment plate G30 is used 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 2 1/4 by 3/16 by 23 3/4 inches long. One end of the plate is clipped back 5/8 inch on each side; the other end is clipped back 1/4 inch on each side. There is one 11/16-inch diameter hole, 1 1/16 inches from one end; a 13/32-in diameter hole is punched 2 3/16 inches from the center of the 11/16-inch diameter hole. Two 13/32-inch diameter holes are punched 5/8 inch from the opposite end of the plate.

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- (2) *G30.* Antenna attachment plate G30 is 3 by 1/4 by 21 3/4 inches long with a hot-dipped galvanized finish. One end of the plate is clipped back 1 inch on each side and provided with an 11/16-inch diameter hole, 1 1/16 inches from the end of the plate, and two 13/32-inch diameter holes which are 2 9/16 inches from the center of the 11/16-inch diameter hole. The opposite end has six 13/32-inch diameter holes in three pairs, spaced on 5/8, 3 1/8, and 5 1/8-inch centers from the end of the plate.
- (3) *G31.* Antenna attachment plate G31 is a hot-dipped galvanized steel plate, 3 by 1/4 by 4 1/4 inches long. One end of the plate is clipped back 1 inch on each side. This end has one hole of 11/16-inch diameter, 1 1/16 inches from the end of the plate. Two 13/32-inch diameter holes are punched 5/8 inch from the opposite end of the plate.

k. Gusset Plates. Two types of gusset plates are supplied for use with each antenna support. Gusset plate G32 is used in section C6 in conjunction with horizontal braces G27 and G28 and antenna mounting plate G30. Two gusset plates G36 are used in section C6 with diagonal braces G25 (fig. 16).

- (1) *G32.* Gusset plate G32 is a hot-dipped galvanized, four-sided, steel bracing plate, 6 by 3/16 by 9 1/8 inches. The plate tapers from a width of 9 1/8 inches at the base to 2 1/4 inches at the top. Ten 13/32-inch diameter holes are punched in the plate (fig. 2). These holes are distributed in three rows of 2, 4, and 4.
- (2) *G36.* Gusset plate G36 is a hot-dipped galvanized, four-sided, steel bracing plate, 8 1/8 by 3/16 by 9 3/4 inches. The plate is 8 1/8 inches wide at the base and tapers on one side to 5 1/8 inches at the top. The plate is provided with 12 holes of 13/32-inch diameter.

l. Filler Plate. Filler plate G45 is a hot-dipped galvanized steel plate, 4 by 1/2 by 6 25/32 inches. It has four sides of the following lengths: 6 1/2 inches, 2 1/2 inches, 2 inches, and 6 25/32 inches. The plate contains one 2532-inch diameter hole and three 13/32-inch diameter holes. This plate is used as a filler piece between guy attachment plates G37 and G38 (fig. 16) in section C6 of the antenna support.

m. Guy Attachment Plates. Guy attachment plates G37, G38, G46, and G47 are required to attach the guys to the antenna support. One plate G37 and one plate G38 are used with filler plate G45 to attach the 5/8-inch diameter guy to section C6 (fig. 18).

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Two guy plates G46 and G47 are used as attachments for the 5/16- inch diameter guys to section C6 of the antenna support (fig. 18).

- (1) *G37 and G38.* Guy attachments G37 and G38 are hot-dipped galvanized steel plates, 4 by 3/16 by 18 3/4 inches long. One end of each plate is sheared back 1 5/8 inches on one corner and bent to the right at a 30° angle on a diagonal line starting approximately 2 1/2 inches from the sheared side. The bent portion of the plate contains one 25/32-inch diameter hole and three 13/32-inch diameter holes. The flat portion is provided with eight holes of 13/32-inch diameter.
- (2) *G46 and G47.* These are hot-dipped galvanized plates, 4 1/4 by 3/16 by 8 1/8 inches long (fig. 2). One side of each plate is clipped back at both ends. One end is bent to the right at a 30° angle and contains three 13/32-inch diameter holes. The flat portion of the plate also is provided with three holes of 13/32-inch diameter.

n. Top Plate G48. This is a steel, hot-dipped galvanized triangular plate, 1 foot 8 3/4 inches by 1/4 inch by 1 foot 11 1/2 inches. A 1 1/4-inch diameter hole is punched in each apex of the triangle. Two 17/32-inch diameter holes, placed on 5-inch centers, are located in each leg of the triangle, 8 5/32 inches from the center of the plate. Four 11/16-inch diameter holes, spaced 90° apart, are located on a 6 5/8 inch radius from the center of the plate. One top plate G48 is required in section C7 of each antenna support (fig. 17).

o. Guy WR1. Guy WR1 is high-strength, 19-strand, galvanized steel wire, 5/8 inch in diameter. The wire has a breaking strength of 28,100 pounds and an over-all length of 101 feet 5 inches. A fixed 5/8-inch guy thimble is placed in the guy at one end, and the guy end is secured with three wire rope clips and one Kearney clip; the other (dead) end is provided with a tailpiece 21 feet 3 inches long. Five strain insulators are incorporated in the WR1 assembly. The first insulator is centered 21 feet 3 inches from the end of the tailpiece; the second, third, fourth, and fifth are placed on 17-foot 9 1/2-inch centers from the first. The wire rope is looped through the insulators and secured by means of three wire rope clips and one Kearney clip. One guy WR1 is required for each antenna support and is attached to the support at the 64-foot 10½-inch elevation point by means of a connecting shackle, guy attachment plates G37 and G38, and filler plate G45.

p. Guy WR2. Guy WR2 is seven-strand, galvanized steel wire, 5/16 inch in diameter. The wire has a breaking strength of 6,000 pounds and an over-all length of 100 feet 6 inches. A fixed 5/16-inch guy thimble is looped into the guy

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at one end, and the guy end is secured with two wire rope clips and one Kearney clip; the other end is provided with a 16-foot tailpiece. Five strain insulators are included in the WR2 assembly. The first is centered 16 feet from the end of the tailpiece; the second, third, fourth, and fifth are located on 20-foot centers from the first. The wire rope is looped through the insulators and secured with two wire rope clips and one Kearney clip. Two guys WR2 are required for each antenna support and are attached to the tower at its 64-foot 10 1/2-inch elevation point with a connecting shackle and guy attachment plates G46 and G47.

q. *Four-Way Expansion Anchor.* The four-way expansion anchor is of rustproof iron with 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 a 1-inch diameter, 10-foot 11-inch anchor rod. One four-way expansion anchor is used with the 5/8-inch (WR1) back guy.

r. *Two-Way Expansion Anchor.* The two-way anchor is of rustproof iron construction, 8 inches in diameter when closed. When expanded, the anchor has an area of 100 square inches. This anchor has a holding power, in sand, of 7,000 pounds. It is used with a 1/2-inch diameter, 7-foot long anchor rod. One two-way expansion anchor is used with each of the 5/16-inch diameter (WR2) guys.

s. *Anchor Rod for Guy WR1.* This is a hot-dipped galvanized steel rod, 10 feet 11 inches long by 1 inch diameter. One end of the rod has 1-inch standard right-hand thread; the opposite end is threaded with 1-inch standard left-hand thread. The rod is supplied with a turnbuckle and eyebolt on one end and a 1-inch standard-threaded square nut on the other end. One 1-inch diameter anchor rod is used for each antenna support with the four-way expansion anchor and guy WR1.

t. *Anchor Rod for Guy WR2.* Each anchor rod is hot-dipped galvanized steel, 7 feet long and 1/2 inch in diameter. One end of the rod is threaded with 1/2-inch standard right-hand thread; the other end is threaded with 1/2-inch standard left-hand thread. The rod is provided with a turnbuckle and eyebolt on one end and a 1/2-inch standard threaded square nut on the opposite end. Two anchor rods are used for each tower assembly in conjunction with the two-way expansion anchors and side guys WR2.

u. *Ground Rod.* The ground rod is copper-coated steel with a conical point. It is 8 feet long by 1/2-inch in diameter. One ground rod is used with a ground clamp, two terminal lugs, and six feet of #4, seven-strand, copper wire to ground each support.

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v. *Foundation Bolts.* Two 1-foot 7-inch by 3/4-inch diameter bent foundation bolts with two 3/4-inch hexagonal nuts and lockwashers are provided for use if the antenna support is to be mounted on a concrete pier (fig. 5) instead of the steel pedestal base.

w. *Steel Pedestal Base Assembly.* The pedestal base, when assembled, is 4 feet in height. It consists of one cap plate (1-00), four corner posts (2-00), four inside base angles (3-00), four outside base angles (4-00), and the necessary hardware and paint (fig. 6).

- (1) *Cap plate 1-00.* The steel cap is 9 5/8 inches square at the base and has sloping sides which taper to a 5 1/8-inch square top. Each side of the cap contains four 7/16-inch diameter holes for attachment to the corner posts. Four 13/16-inch diameter holes are provided in the top of the cap plate for the alternate positioning of bottom assembly G16-A.
- (2) *Corner post 2-00.* The steel, formed angle corner posts are each 2 by 2 by 1/4 by 54 inches long. Each has a 3 1/8 inch long bent portion at one end. Both legs of each corner post angle contain two 7/16-inch holes for attachment to the cap plate and the base angles.
- (3) *Base angle 3-00.* The inside base angles are 3 by 2 1/2 by 1/4 by 41 3/4 inches long. The 2 1/2-inch leg of the angle is clipped 45° at both ends. Six 7/16-inch diameter holes are provided for bolting to the outside base angles and corner posts.
- (4) *Base angle 4-00.* Each of the outside base angles is 3 by 2 1/2 by 1/4 by 46 inches long. Six 7/16-inch diameter holes are punched in the 3-inch leg of each angle to provide attachment to the inside base angles and corner posts.

7. Packaging Data

Antenna Support AB-105C/FRC (including the pedestal base) is shipped completely disassembled and is packed in three bundles and four boxes (fig. 3). All wooden boxes are nailed and banded with steel straps. All hardware is contained in cloth bags. The three bundles and four boxes are numbered consecutively as indicated in the item numbers in the table below. The following table lists the container sizes, weights, and contents:

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Item	Container	Size (in.)	Weight (lb)	Contents	
				Quantity	Item
				6 ft	#4B and S, 7-strand soft-drawn copper wire.
				1	Expanding anchor (four-way).
				2	Expanding anchor (two-way).
				540	Bolt (1 in. lg) $\frac{3}{8}$ in.
				102	Bolt (1 $\frac{1}{4}$ in. lg) $\frac{3}{8}$ in.
				12	Bolt (1 $\frac{3}{8}$ in. lg) $\frac{1}{2}$ in.
				6	Bolt (1 $\frac{1}{2}$ in. lg) $\frac{3}{8}$ in.
				2	Bolt (2 in. lg) $\frac{3}{4}$ in.
				648	Hexagonal nuts ($\frac{3}{8}$ in.).
				2	Hexagonal nuts ($\frac{5}{8}$ in.).
				648	Lockwasher, heavy (for $\frac{3}{8}$ -in. diameter bolt).
				12	Lockwasher, heavy (for $\frac{1}{2}$ -in. diameter bolt).
				2	Lockwasher, heavy (for $\frac{3}{4}$ -in. diameter bolt).
				2	Flat washers (for $\frac{3}{8}$ -in. bolt).
				2	Flat washers (for $\frac{3}{4}$ -in. bolt).
				2	Cotter pins ($\frac{1}{8}$ by 1 in.).
				2	Terminal lugs (for #4 stranded wire).
				1	Ground wire clamp.
5	Box of guys and spare parts.	37 $\frac{1}{2}$ by 37 $\frac{1}{2}$ by 11.	320	1	Guy WR1.
				2	Guy WR2.
				3	Wire rope clip ($\frac{5}{8}$ in.).
				2	Wire rope clip ($\frac{7}{8}$ in.).
				2	Kearney clips ($\frac{7}{8}$ in.).
				1	Shackle ($\frac{5}{8}$ in. dia).
				1	Shackle ($\frac{7}{8}$ in. dia).
				12 ft	Seizing wire.
6	Bundle of steel parts (pedestal base).	6 by 6 by 54.	195	4	Corner post (2-00).
				4	Base angle (3-00).
				4	Base angle (4-00).
7	Box of miscellaneous parts (pedestal base).	9 $\frac{5}{8}$ by 9 $\frac{5}{8}$ by 5 $\frac{1}{8}$.	35	1	Cap plate (1-00).
				41	Bolt (1 $\frac{1}{2}$ in. lg) $\frac{3}{8}$ in.
				41	Hexagonal nuts, ($\frac{3}{8}$ in.).
				2 pt	Paint, black, asphalt.
				41	Lockwashers, heavy (for $\frac{3}{8}$ -in. diameter bolt).
				1	Brush, paint.

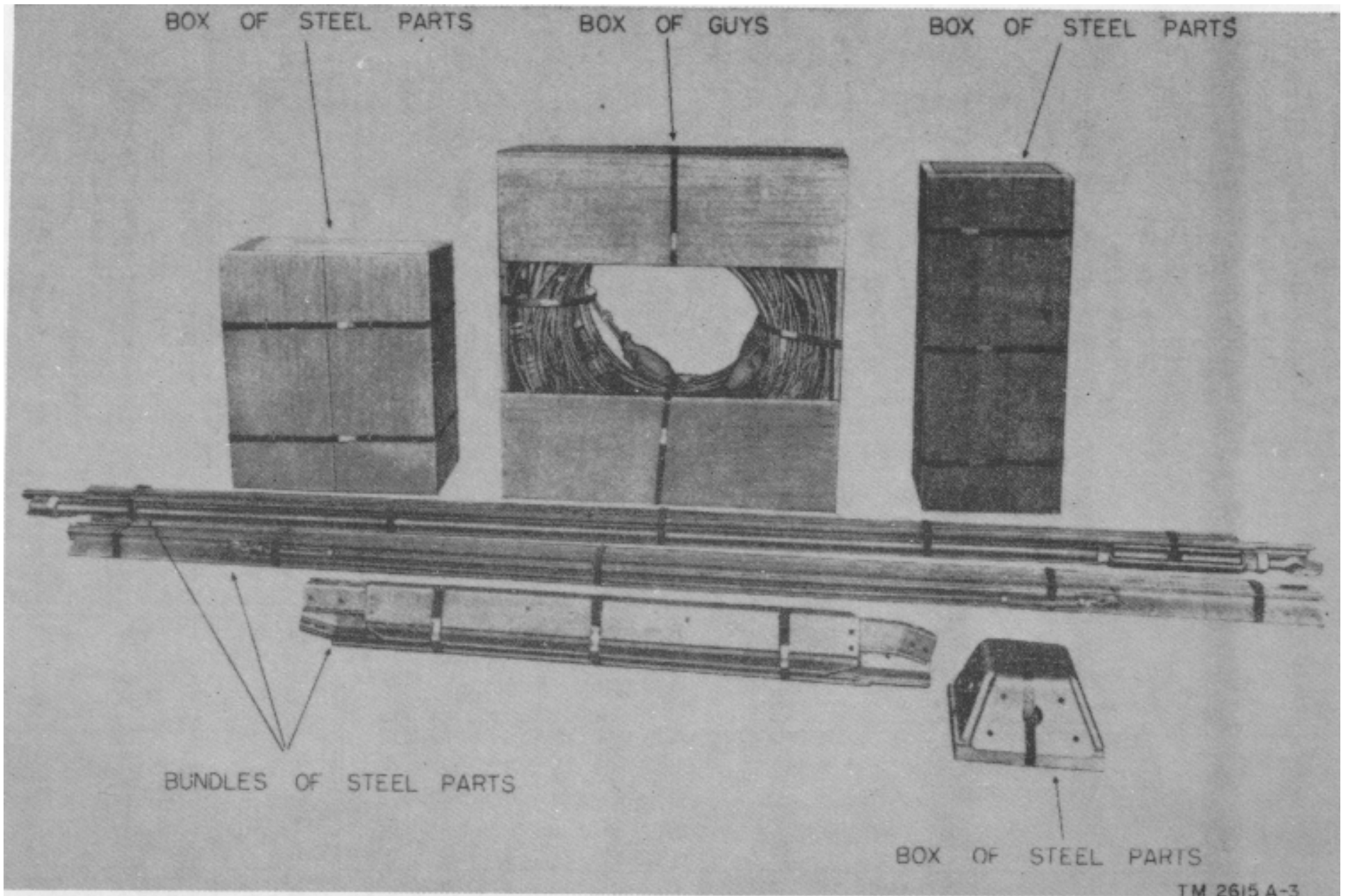


Figure 3. Antenna Support AB-105C/FRC, packaged for shipment.

CHAPTER 2
SITING AND INSTALLATION

Note. The reference book on CAA regulations (Sig C stock No. 6D9950) may be secured by ordering through appropriate channels. This book should be available for reference wherever Antenna Support AB-105C/FRC is used.

Section I. SERVICE UPON RECEIPT OF EQUIPMENT

8. Unpacking Uncrating, and Checking

- a. Place the packing cases for each of the four antenna supports conveniently near each erection location.
- b. Cut the steel straps from the cases and bundles.
- c. Remove the nails, using a nail puller, and remove the sides of the cases.
- d. Antenna Support AB-105C/FRC and the steel pedestal base are shipped disassembled in three bundles and four boxes. Each part is numbered individually. Segregate the parts into piles of similarly marked pieces, grouping them about the base location where each part will be readily accessible.
- e. Inspect the parts for damage after removal from the packing case; check the parts against the master packing slip or against the packaging data (par. 7).

9. Used Equipment

The uncrating, unpacking, and checking procedure for used or reconditioned equipment will be the same as that for new equipment. Be sure to follow the instructions outlined in paragraph 8.

Section II. ASSEMBLING AND ERECTING

10. Location of Equipment

- a. If possible, locate Antenna Support AB-105C/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

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guys. Refer to TM 11-2617, for detailed information covering the requirements for a rhombic antenna installation. Antenna Support AB-105C/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 correct 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.

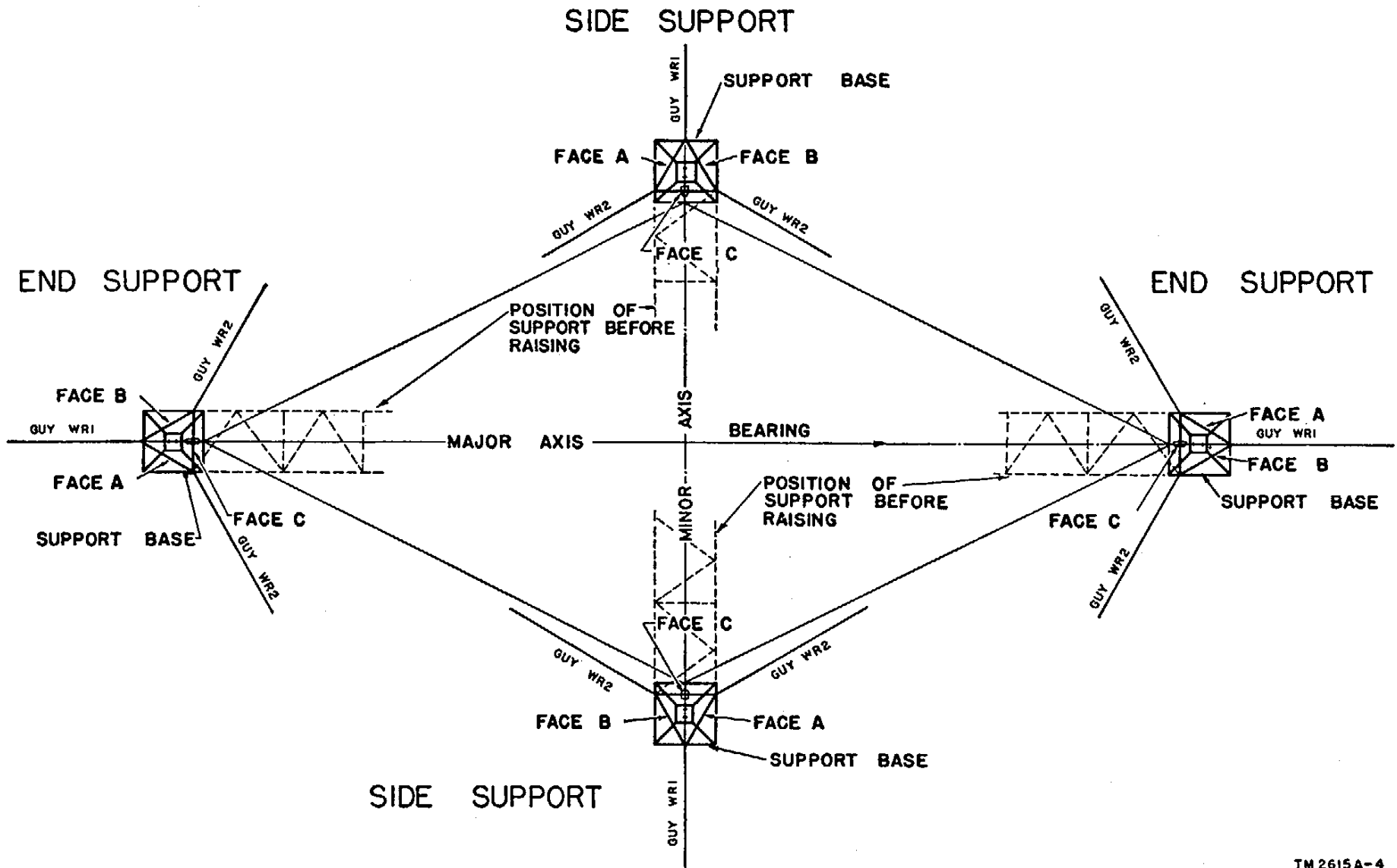
11. Installing Base and Anchors

a. *General.* Each antenna support is mounted either on a steel pedestal base or on a concrete pier. The steel pedestal base is a prefabricated structure, supplied as a component of Antenna Support AB-105C/FRC. Two foundation bolts of 3/4-inch diameter and 19-inch length, threaded 3 inches, and each provided with one hexagonal nut are supplied with each support for use with the concrete pier.

b. *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 and marsh), 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 it to eliminate the possibility of voids.

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Figure 4. Typical location plan.

- (4) Use bottom plate G16-A as a template to obtain the bolt locations illustrated in figure 5.
- (5) After the concrete is poured, insert into the concrete the two foundation bolts (3/4-inch diameter by 19 inches long). Allow 2 inches of each bolt to be exposed above the top of the foundation; 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 but not in, the concrete.
- (7) Allow the concrete to set for approximately 1 hour and provide a 1/2-inch chamfer around the edge.

c. *Steel Pedestal Base.*

- (1) *Assembly.* Assemble the steel pedestal base at a convenient location where the ground is level, as follows:
 - (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 1/8- by 1½-inch bolts, 3/8-inch lockwashers, and c-inch hexagonal nuts and fasten the inside and outside base angles together. Make all nuts fingertight.
 - (c) Use four 3/8- by 1 1/2-inch bolts, 3/8-inch lockwashers, and 3/8-inch hexagonal nuts 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.
 - (e) Use 3/8- by 1 1/2-inch bolts, 3/8-inch lockwashers, and 3/8-inch hexagonal nuts 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. Do not overtighten them; overtightening may strip the threads or break the bolts.
- (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.

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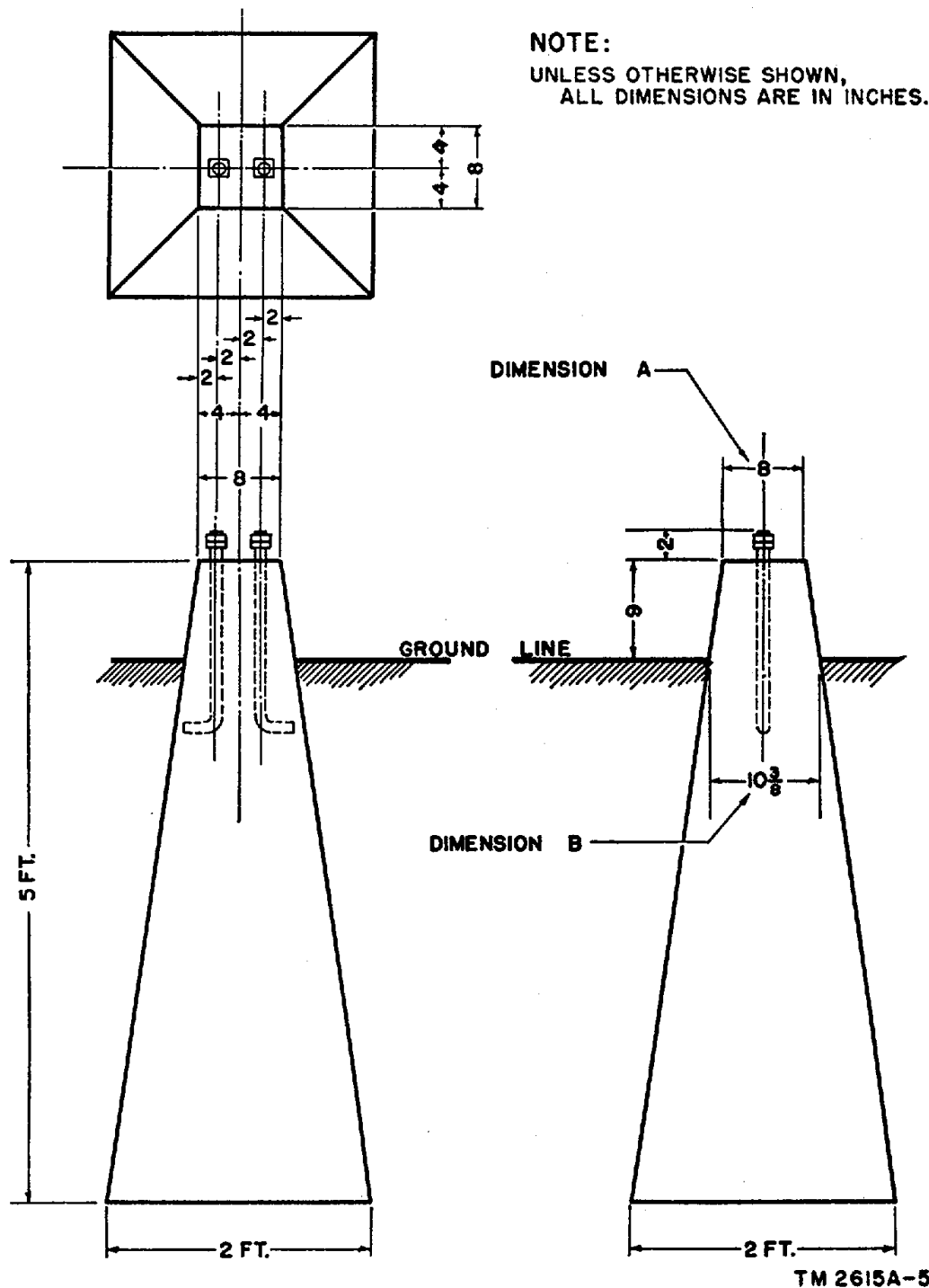


Figure 5. Concrete pier.

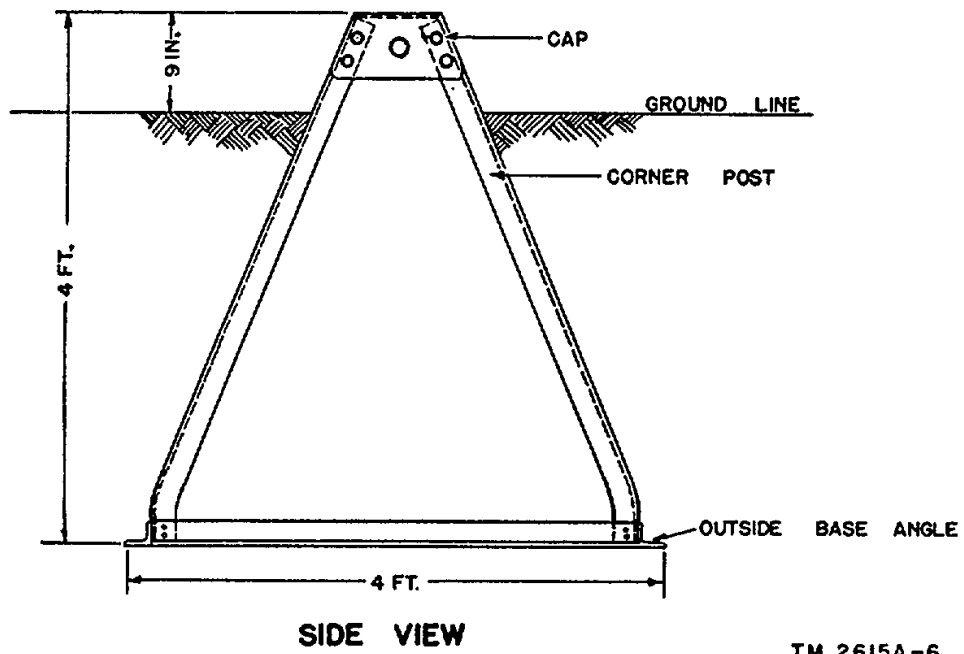
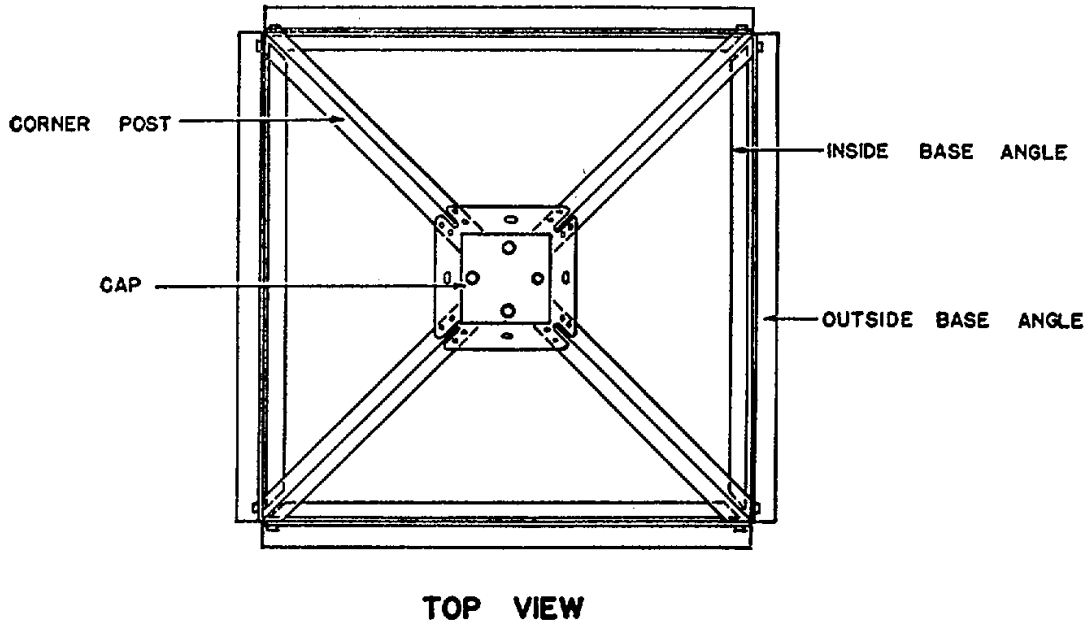
- (a) Place the pedestal base on one side and paint the under side of the top cap.
- (b) Set the base in an upright position on corner blocks or stones. Allow sufficient space under the base to provide for air-drying.
- (c) Paint the remainder of the base (such as corner posts and base angles) and then apply a second coat of paint.

- (d) When the paint has dried, the base 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 on elevation requirements.
- (a) If 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. 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) If the base is set in low terrain, provide adequate drainage to carry off surface water.
- (c) If the pedestal base is set in marshy ground or in poor bearing soil (loam, silt, and colloidal sand), excavate to reasonably firm earth and provide a mat of concrete, mixed stone, or rock.

d. *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 support are spaced 120° apart and are located on level ground 67 feet $\frac{1}{4}$ 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 (fig. 7) elevation; 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 indicates the distance between anchor location and the center of the support and equals $B + C$ (fig. 7).

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Figure 6. Steel pedestal base.

- (a) The anchor for guy WR1 (5/8-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 paragraph (1) above.
- (b) The anchors for guys WR2 are located at the designated distance (par. (1) above) on anchor lines established 120° to the left and right of the anchor line for guy WR1.

(2) *Installing four-way expansion anchor.*

- (a) Bore or dig a hole (at a 45° angle with respect to the ground level) 8 feet 10 3/4, 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.
- (b) Assemble the 10-foot, 11-inch anchor rod of 1-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.
- (c) Keep the blades of the anchor closed and drop the anchor into the hole. Approximately 1 foot 1 3/4 inches of the anchor rod should extend above the ground line.
- (d) 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 fully expanded position.
- (e) Fill the hole carefully by thoroughly tamping the backfill every few inches.

(3) *Installing two-way expansion anchor.*

- (a) Bore or dig a hole (at a 45° angle with respect to the ground level) 5 feet 7 1/4 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.
- (b) Assemble the 7-foot anchor rod (1/2-inch diameter) on the anchor and complete the installation of the two-way expansion anchor by following the procedures given in paragraph (2) (b) through (e) above. Approximately 9 3/4 inches of the anchor rod should extend above the ground line.

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Note. The anchors supplied with Antenna Support AB-105C/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.

12. Assembling Support Sections

a. General.

- (1) To assemble Antenna Support AB-105C/FRC, first bolt the various components (fig. 2) into sections; then connect the sections in the correct order and position. For example, section C2 is bolted to section C1, section C3 to C2, C4 to C3, etc.
- (2) All bolts used on the structure must be inserted from the inside of the supports and a lockwasher and nut placed on the external surface of the piece against which they bear. Unless otherwise specified by the assembly instructions contained in this manual, all bolts are 3/8 inch by 1 inch.

Note. When more than three members are assembled, use 3/8-inch by 1 1/4-inch bolts except where otherwise specified on the drawings.

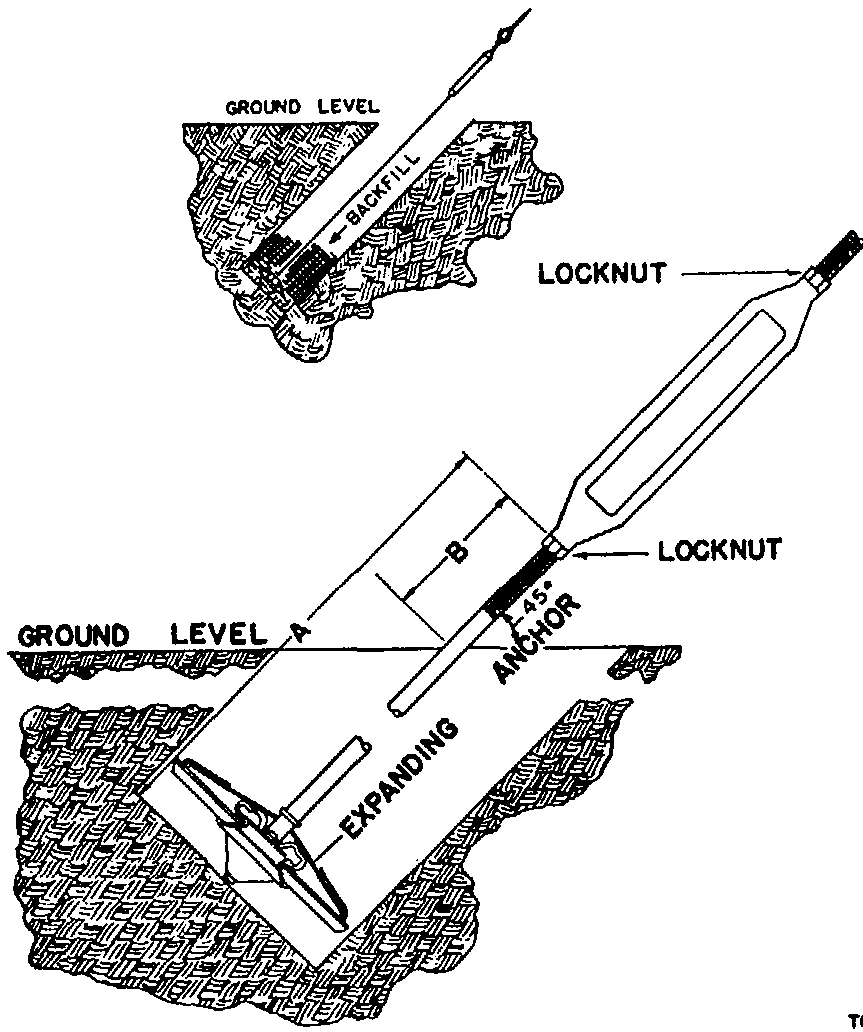
- (3) Component parts are individually identified by characters and numerals stamped on each part (G1-A; G2-A; G3-A).
- (4) Assembly of the sections is facilitated if they are laid out on level ground and blocked to provide access to the bolts near the ground.

Note. When assembling each section, thread the nuts fingertight only until all bolts are in place; then tighten all bolts until lockwashers are flat.

b. Assembling Section C1 (fig. 9).

- (1) Remove the following components of section C1 from their shipping containers (fig. 3 and par. 7) and place them where they will be readily accessible for assembly of the section:

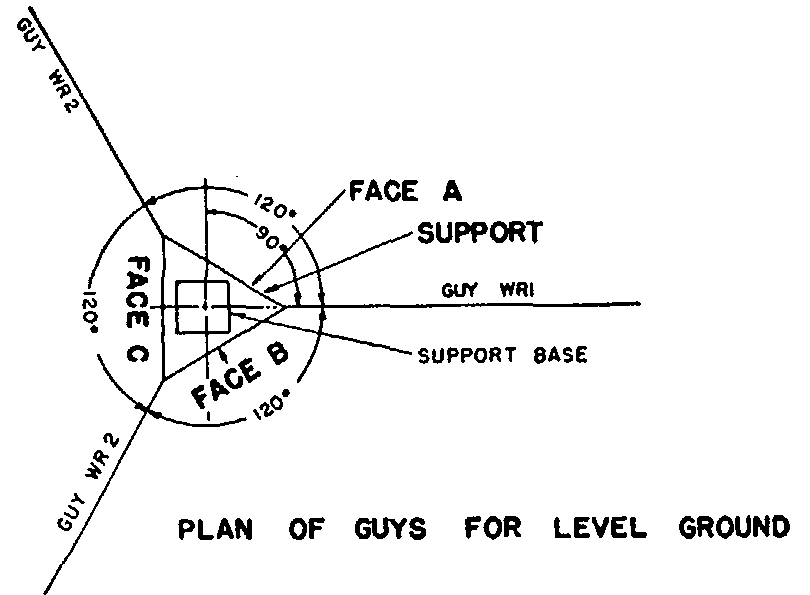
- 3 supporting posts G1-A.
- 3 splice plates G7.
- 6 diagonal braces G9-A.
- 4 horizontal braces G10-A.
- 1 bottom assembly G14-A.
- 1 bottom assembly G15-A.
- 1 bottom assembly G16-A.
- 2 shoulder bolts, 3/1- by 6 3/4-inch, with brass cotter pins.



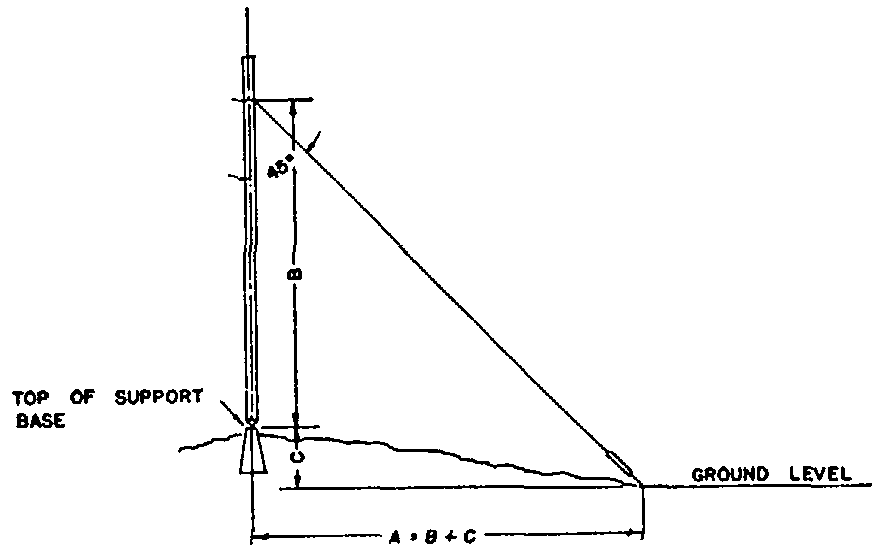
ANCHOR DETAIL

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.

3 base channels G17-B.
1 bolt, 3/8- by 1 1/4-inch.
38 bolts, 3/8- by 1-inch.
39 lockwashers for 3/8-inch diameter bolts.
39 hexagonal nuts for 3/8-inch bolts.
6 bolts, 1/2- by 1 3/8-inch.
6 nuts for 1/2-inch bolts.
6 lockwashers for 1/2-inch diameter bolts.
2 connector terminals for ground wire.

- (2) Select three supporting posts G1-A.
- (3) Place two of the posts G1-A on the ground with edges facing in. For identification purposes, mentally designate the left-hand post as G1-AL and the right-hand post as G1-AR. Consider the completed assembly of this side as face A of the tower.
- (4) Hold a base channel G17-B so that the two flanges face out and the flange with two holes faces down. Place the channel in this position against posts G1-AL and G1-AR; match the bottom holes in the posts with the end holes in the channel. Insert a 3/8- by 1-inch bolt through each of the four matching holes. Add lockwashers and thread nuts fingertight.
- (5) Hold a diagonal brace G9-A so that the smooth side faces out. Insert a 3/8- by 1-inch bolt through the bottom end of the brace and through the third hole from the bottom in post G1-AL. Secure the angle to the inside of the post.
- (6) Insert a 3/8- by 1-inch bolt through the free end of diagonal brace G9-A, installed as instructed in paragraph (5) above, and through the first brace hole in post GL-AR (in center of post). Place another brace G9-A, with smooth side facing out, on this bolt on the outside of the post. Add a lockwasher and a nut.

Note. In all sections, each diagonal brace shall have its smooth side facing out except the top three in section C7.

- (7) Select a splice plate G7 and a horizontal brace G10-A. Position the splice plate so that the three bottom holes in each leg of the plate are aligned with the three top holes in supporting post G1-AL. Insert a 3/8- by 1-inch bolt through the top hole in post G1-AL and continue it through the mating hole in splice plate G7 and through brace G10-A (angled edge of brace G10-A faces out). Install a lockwasher and a nut.

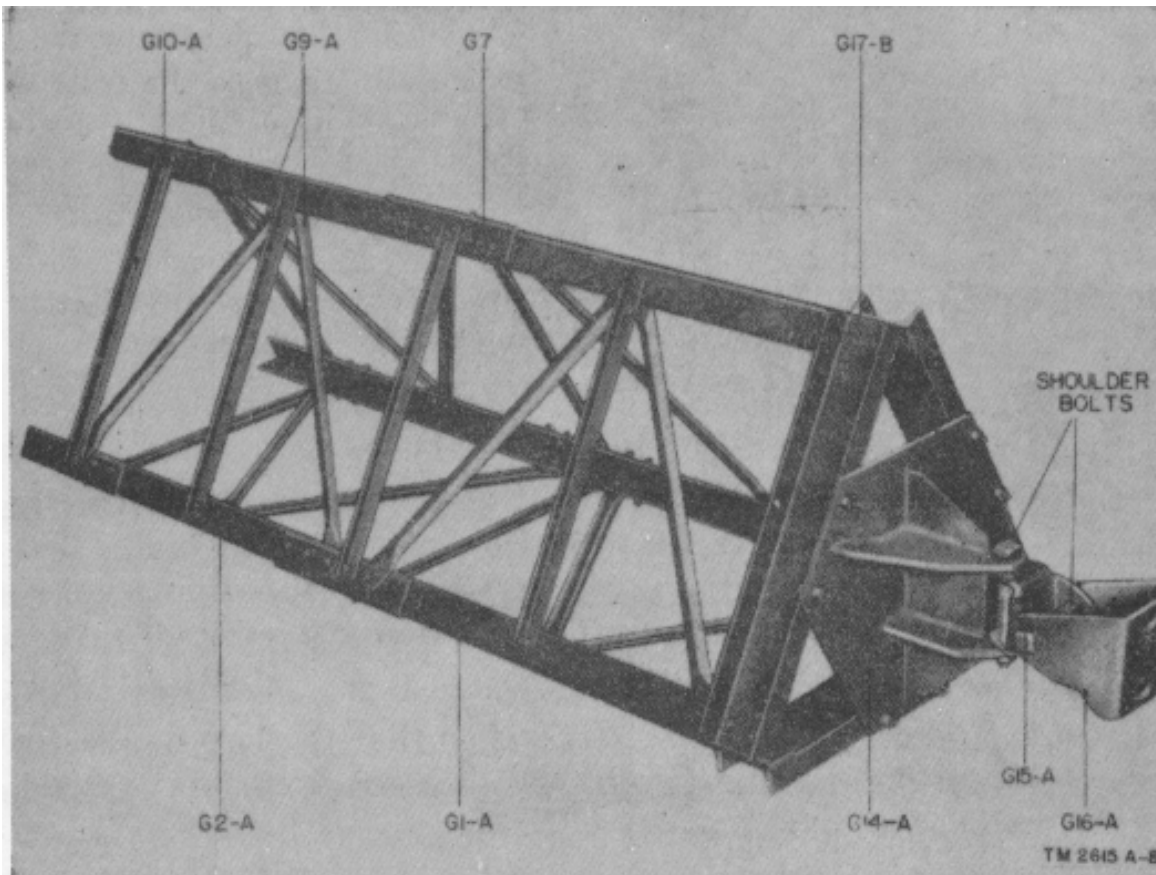


Figure 8. Sections C1 and C2.

- (8) Insert a 3/1- by 1-inch bolt through the second hole from the top in post G1-AL and through the splice plate. Secure the free end of the second diagonal brace G9-A in place on the outside of the splice plate.
- (9) Insert a 3/8- by 1-inch bolt through supporting post G1-AL and through the bottom hole in the splice plate. Secure the bolt with a lockwasher and a nut.
- (10) Position another splice plate G7 on supporting post G1-AR. Aline the three bottom holes in the plate with the three top holes in the post. Insert a 3/8- by 1-inch bolt through the top hole in post G1-AR, the alined hole in plate G7, and the free end of brace G10-A. Add a lockwasher and a nut. Use 3/8 by 1-inch bolts through supporting post G1-AR and the two bottom holes in splice plate G7, and fasten them with lockwashers and nuts.
- (11) Position the third supporting post G1-A for joining to posts G1-AL and G1-AR to form faces B and C of the tower. Face C is identical to face A and is assembled in the same manner. The assembly of face B is the same as for A and C except that a second horizontal brace G10-A, which serves also as a step, is added. Position this brace, with angled side facing out, on the point where diagonal braces G9-A attach to the

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center of supporting post G1-AL. Insert a ¼ by 1 1/4-inch bolt through the following members in the order listed: diagonal G9-A (inside posts), post G1-AL, diagonal G9-A (outside posts), and horizontal brace G10-A. Secure the bolt with a lockwasher and a nut. Attach the free end of brace G10-A to the center of the third supporting post G1-A with a 3/8 by 1-inch bolt, a lockwasher, and a nut.

- (12) Place bottom assembly G14-A against the bottom of section C1 with the axis of the two shoulder bolt holes in bottom assembly G14-A perpendicular to face C and with the two holes in each of the shorter sides of the assembly aligned with the two holes in the bottom flange of each base channel G17-B. Insert six 1/2- by 1 3/8-inch bolts through the matching holes in G17-B and G14-A and fasten the bottom assembly in place (fig. 8).

c. *Assembling Section C2 (fig. 10).*

- (1) The following components are required for the assembly of section C2: 3 supporting posts G2-A.

- 3 splice plates G7.
- 6 diagonal braces G9-A.
- 4 horizontal braces G10-A.
- 18 bolts, 3/8-by 1-inch.
- 22 hexagonal nuts, Winch.
- 4 bolts, 3/8- by 1 1/4-inch.
- 22 lockwashers for 3/8-inch diameter bolts.

- (2) Place two supporting posts G2-A on the ground with the edges facing in. Designate the left-hand post G2-AL, right-hand post G2-AR, and the side, when assembled, as face A.
- (3) Position splice plate G7 on supporting post G2-AL; align the three bottom holes in each leg of the plate with the three top holes in the supporting post. Insert a 3/8 by 1 1/4-inch bolt through the top hole in post G2-AL and the matching hole in splice plate G7. Place a diagonal brace G9-A (smooth side facing out) and a horizontal brace G1-A (angled side out) over the bolt. Fasten the bolt with a lockwasher and a nut.
- (4) Insert a 3/8 by 1-inch bolt through the remaining two holes in the splice plate and the aligned holes in post G2-AL. Add lockwashers and nuts.
- (5) Place a splice plate G7 on supporting post G2-AR; align the three bottom holes in each leg of the splice

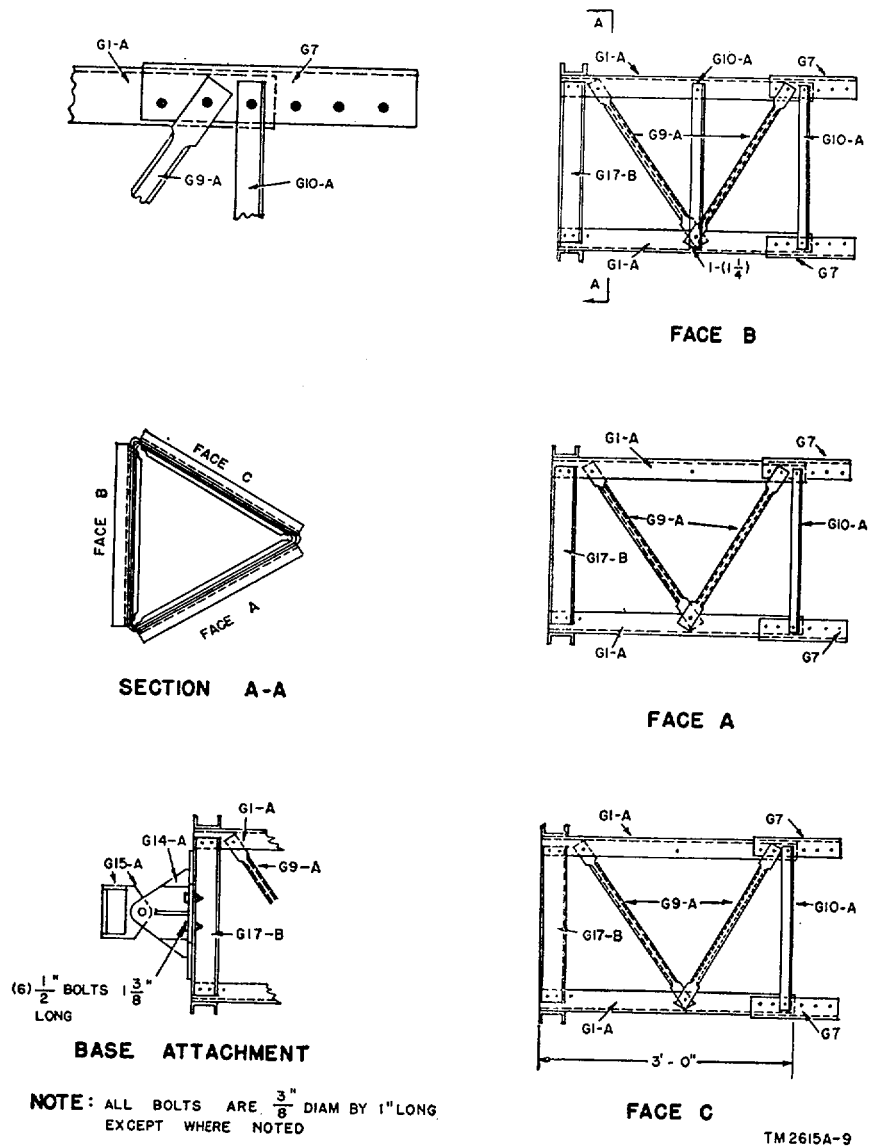


Figure 9. Section C1, assembly details.

plate with the three top holes in the post. Insert a 3/8 by 1-inch bolt through post G2-AR, plate G7, and the free end of angle G10-A. Secure the bolt with a lockwasher and a nut.

- (6) Insert 3/8 by 1-inch bolts through the remaining two holes in the top of the supporting post G2-AR; add lockwashers and nuts.

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- (7) Insert a 3/8 by 1-inch bolt through the end of another diagonal brace G9-A and install the brace inside supporting posts G2-AL and G2-AR, with its smooth side facing out. Continue the bolt through post G2-AR and the free end of brace G9-A, as instructed in (3) above. Fasten it with a lockwasher and a nut.

Note. The lower end of diagonal brace G9-A, installed as instructed in (7) above, will remain free until the assembly of section C2 to section C1.

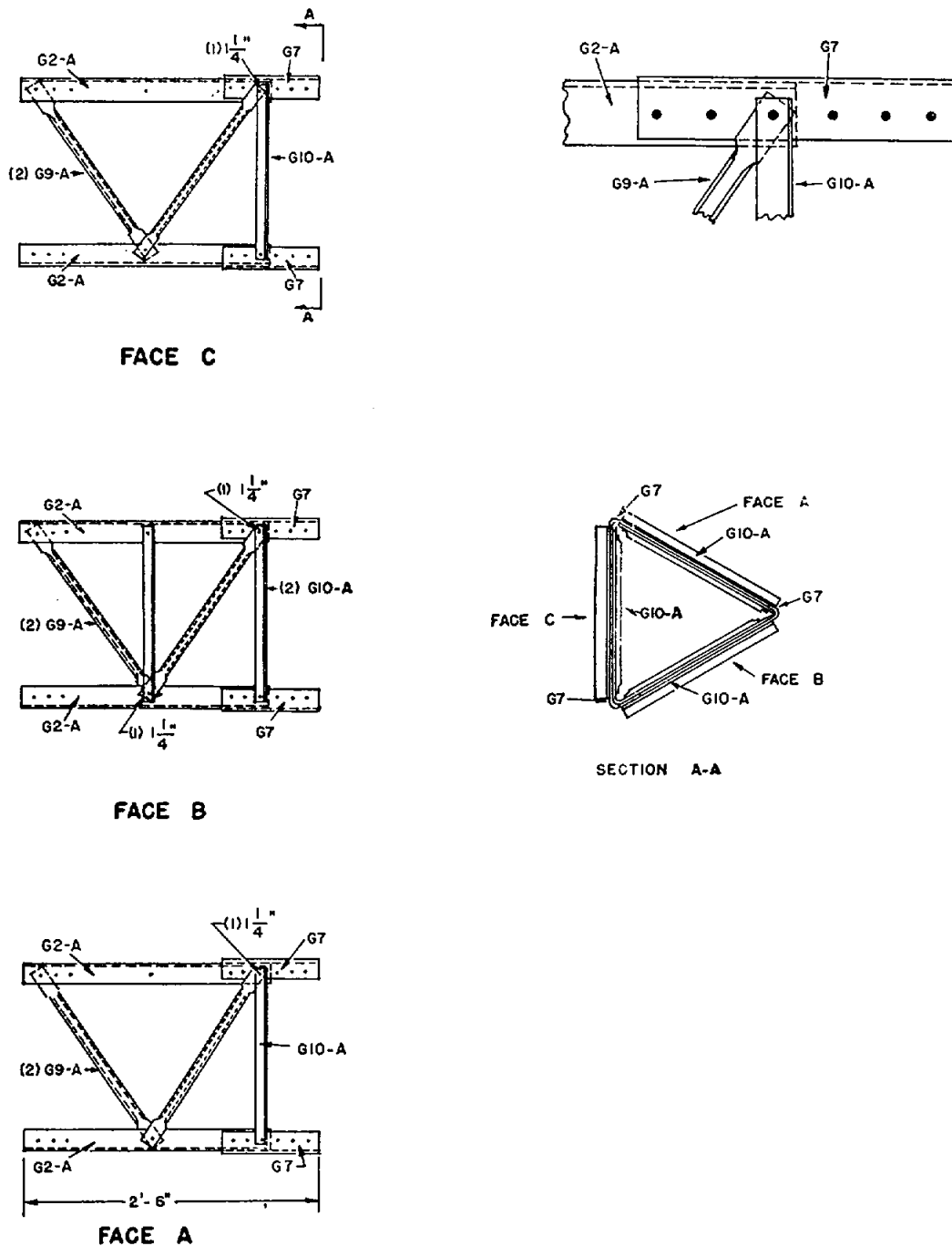
- (8) Position the third supporting post G2-A for connection to posts G2-AL and G2-AR to form faces B and C of the section. Face C is identical to face A and is assembled in the same manner. Face B assembly is the same as for faces A and C, except that a second horizontal brace G10-A, which serves as both brace, and step, is added. Position this brace with the angled edge facing out, at the point where diagonal braces G9-A attach to the center of supporting post G2-AL. Secure the following members, in the order listed, by means of a 3/8 by 1 1/4 inch bolt: diagonal G9-A (inside post), post G2-AL, diagonal G9-A (outside post), and horizontal brace G10-A. Secure the bolt with a lockwasher and a nut. Attach the free end of brace G10-A to the center of the third supporting post G2-A with a 3/8 by 1-inch bolt, a lockwasher, and a nut.

d. Assembling Section C3 (fig. 11).

- (1) The following components are required to assemble section C3:

- 3 supporting posts G3-A.
- 3 splice plates G7.
- 12 diagonal braces G8-A.
- 6 horizontal braces G10-A.
- 24 bolts, 3/8- by 1-inch.
- 30 hexagonal nuts, 3/8 inch.
- 6 bolts, 3/8- by 1 1/4-inch.
- 30 lockwashers for 3/8-inch diameter bolts.

- (2) Place two supporting posts G3-A on the ground with edges facing in. Designate the left-hand post GS-AL, right-hand post G3-AR, and the completely assembled side as face A.
- (3) Using a 3/8- by 1 1/4-inch bolt through the top hole in supporting post G3-AL, connect the post, a splice plate G7, diagonal brace G8-A, and horizontal brace G10-A, in that order. Add a lockwasher and a nut.



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

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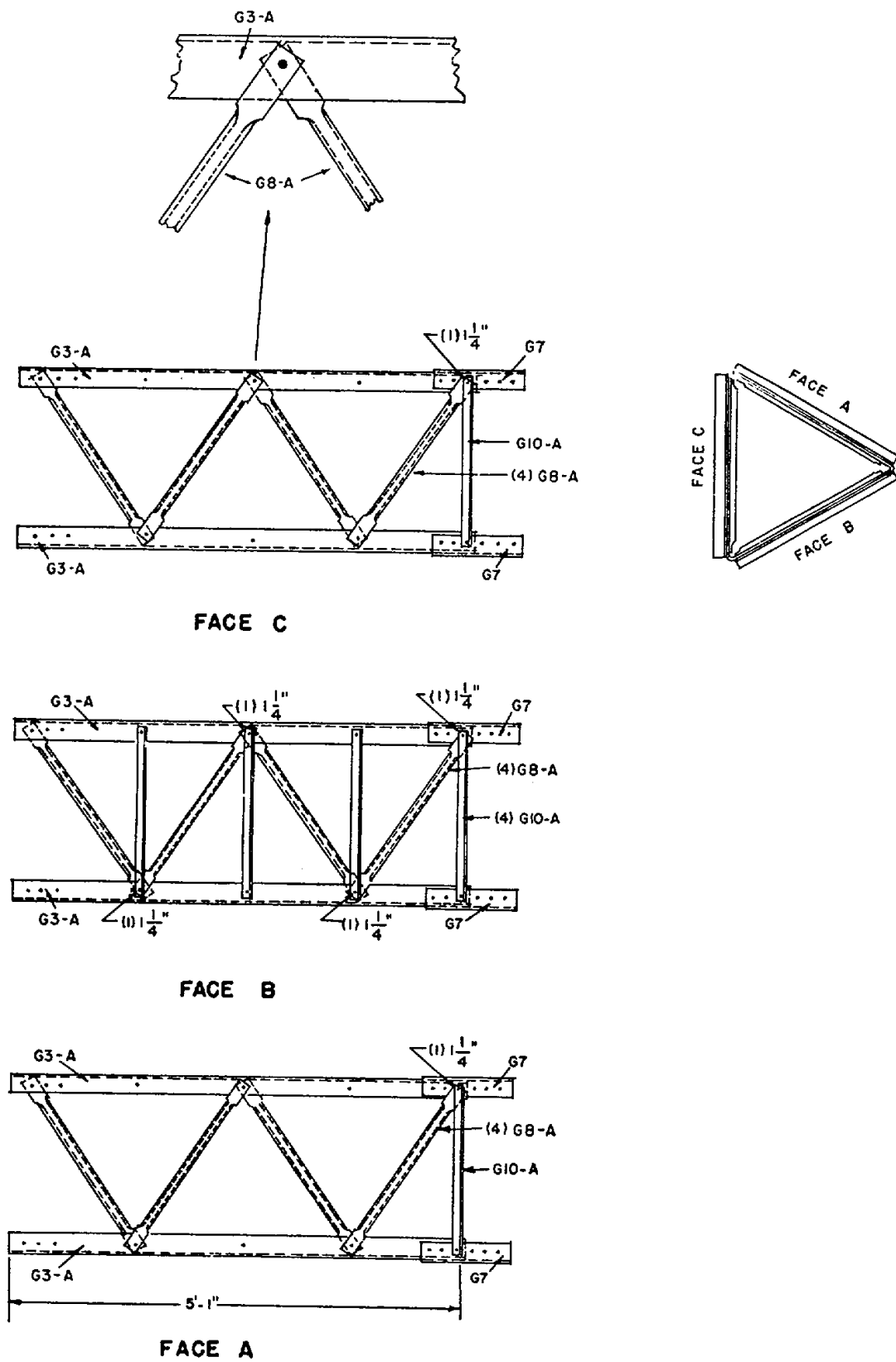
Figure 10. Section C2, assembly details.

- (4) Insert 3/8- by 1-inch bolts through the two remaining holes in the top post G3-AL and the matching holes in plate G7; place lockwashers and nuts on the bolts.
- (5) Connect supporting post G3-AR to another splice plate G7 and the free end of horizontal brace G10-A by means of a 3/8- by 1-inch bolt, a lockwasher, and a nut.
- (6) Complete the attachment of splice plate G7 to post G3-AR with two each of the 3/8- by 1-inch bolts, lockwashers, and nuts.

- (7) Insert a 3/8- by 1-inch bolt through the end of another diagonal G8-A (smooth side facing out). Continue the bolt through the top brace hole in supporting post G3-AR and the free end of diagonal brace G8-A, installed as instructed in (3) above. Add a lockwasher and a nut.
- (8) Insert a 3/8- by 1-inch bolt through the free end of brace G8-A, installed as instructed in (7) above. Continue the bolt through post G3-AL and a third diagonal brace G8-A (smooth side facing out). Secure the bolt with a lockwasher and a nut.
- (9) Insert a 3/8- by 1-inch bolt through a fourth diagonal brace G8-A (smooth side facing out) and continue it through post G3-AR and the free end of brace G8-A, installed as instructed in (8) above. Secure the bolt with a lockwasher and a nut.

Note. The lower end of diagonal brace G8-A, installed as instructed in (9) above, will remain free until the assembly of section C3 to section C2.

- (10) Position the third supporting post G3-A for connection to posts G3-AL and G3-AR to form faces B and C of the section. Face C is assembled in the same manner as face A. The assembly of face B differs in that three additional horizontal braces (steps) G10-A are installed. Place the first of these, with angled edge facing out, on the outside of the supporting posts at the point where the first and second (from the top) diagonal braces attach to post G3-AL. Insert a 3/8- by 1 1/4-inch bolt through second diagonal G8-A, post G3-AL, first diagonal G8-A, and horizontal brace G10-A and add a lockwasher and a nut. Attach the free end of brace G10-A to third post G3-A with a 3/8 by 1-inch bolt, a lockwasher, and a nut.
- (11) Position the second brace G10-A at the point on third post G3-A where the second and third diagonals G8-A attach. Connect second diagonal G8-A, post G3-A, third diagonal G8-A, and second brace G10-A, in that order, by means of a 3/8- by 1 1/4-inch bolt, a lockwasher, and a nut. Attach the free end of G10-A to post G3-AL with a 3/8- by 1-inch bolt, a lockwasher, and a nut.
- (12) Place the third brace G10-A at the point on supporting post G3-AL where the third and fourth diagonals attach. Use a 3/8- by 1 1/4-inch bolt through fourth diagonal G8-A, post G3-AL, third diagonal G8-A, and brace G10-A, in that order. Secure it with a lockwasher and a nut. Attach the free end of brace G10-A to post G3-A with a 3/8- by 1-inch bolt, a lockwasher, and a nut.



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

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Figure 11. Section C3, assembly details.

e. *Assembling Section C4* (figs. 12 and 13).

- (1) Four sections C4 are required for each antenna support. The following components are necessary for the assembly of each section:

- 3 supporting posts G4-A.
- 3 splice plates G7.
- 24 diagonal braces G8-A.
- 10 horizontal braces G10-A.
- 36 bolts, 3/8- by 1-inch.
- 46 hexagonal nuts, -3/8 inch.
- 10 bolts, 3/8- by 1 1/4-inch.
- 46 lockwashers for 3/8-inch diameter bolts.

- (2) Place two supporting posts G4-A on the ground with edges facing in. Designate the left-hand post G4-AL, the right-hand post G4-AR, and the completely assembled side, face A.
- (3) Insert a 3/8- by 1 1/4-inch bolt through the top hole in post G4-AL, a splice plate G7, first diagonal brace G8-A (smooth side facing out), and horizontal brace G10-A (angled side out). Add a lockwasher and a nut.
- (4) Complete the attachment of splice plate G7 to post G4-AL with two each of the 3/8- by 1-inch bolts, lockwashers, and nuts.
- (5) Use a 3/8- by 1-inch bolt, a lockwasher, and a nut to connect post G4-AR, another splice plate G7, and the free end of brace G10-A, in that order.
- (6) Complete the attachment of splice plate G7 to post G4-AR with two each of the 3/8- by 1-inch bolts, nuts, and lockwashers.
- (7) In the same order, connect a second diagonal brace G8-A (smooth side facing out), post G4-AR (through first brace hole), and the free end of diagonal G8-A, installed as instructed in (3) above; use a 3/8- by 1-inch bolt, a lockwasher, and a nut.
- (8) Insert a 3/8- by 1-inch bolt-through the free end of diagonal brace G8-A, installed as instructed in (7) above, through the second brace hole in post G4-AL, and third diagonal G8-A (smooth side facing out). Add a lockwasher and a nut.

- (9) Connect the fourth diagonal brace G8-A (smooth side facing out) to the third brace hole in post G4-AR and the free end of brace G8-A, installed as instructed in (8) above, with a 3/8- by 1-inch bolt, a lockwasher, and a nut.
- (10) Insert a 3/8- by 1-inch bolt through the free end of brace G8-A, installed as instructed in (9) above, through the fourth brace hole in post G4-AL and the fifth diagonal brace G8-A (smooth side facing out). Secure the bolt with a lockwasher and a nut.
- (11) Attach the sixth diagonal brace G8-A (smooth side facing out) to the fifth brace hole in post G4-AR and the free end of brace G8-A, installed as instructed in (10) above; use a 3/8- by 1-inch bolt, a lockwasher, and a nut.
- (12) Insert a 3/8- by 1-inch bolt through the free end of brace G8-A, installed as instructed in (11) above, through the sixth brace hole in post G4-AL and the seventh diagonal brace G8-A. Add a lockwasher and a nut.
- (13) Insert a 3/8- by 1-inch bolt through the eighth diagonal brace G8-A (smooth side facing out), the seventh brace hole in post G4-AR, and the free end of brace G8-A, installed as instructed in (12) above. Complete the attachment with a lockwasher and a nut.

Note. The unsecured end of diagonal brace G8-A, installed as instructed in (13) above, will remain free until the assembly of section C4 to section C3.

- (14) Position the third supporting post G4-A for connection to posts G4-AL and G4-AR to form faces *B* and *C* of the section. Face *C* and face *A* are identical and are assembled in the same manner. Face *B* is identical except for the addition of seven horizontal braces (steps) G10-A. These are secured to supporting post G4-AL at the points where the first and second, third and fourth, fifth and sixth, and seventh and eighth diagonal braces G8-A attach and to the third supporting post G4-A where the second and third, fourth and fifth, and sixth and seventh diagonals G8-A attach, all by means of a total of seven each of the 3/8- by 1 1/4-inch bolts, lockwashers, and nuts. The free ends of horizontal braces G10-A are fastened alternately to the third supporting post G4-A and post G4-AL by means of a total of seven each of the 3/8- by 1-inch bolts, lockwashers, and nuts.

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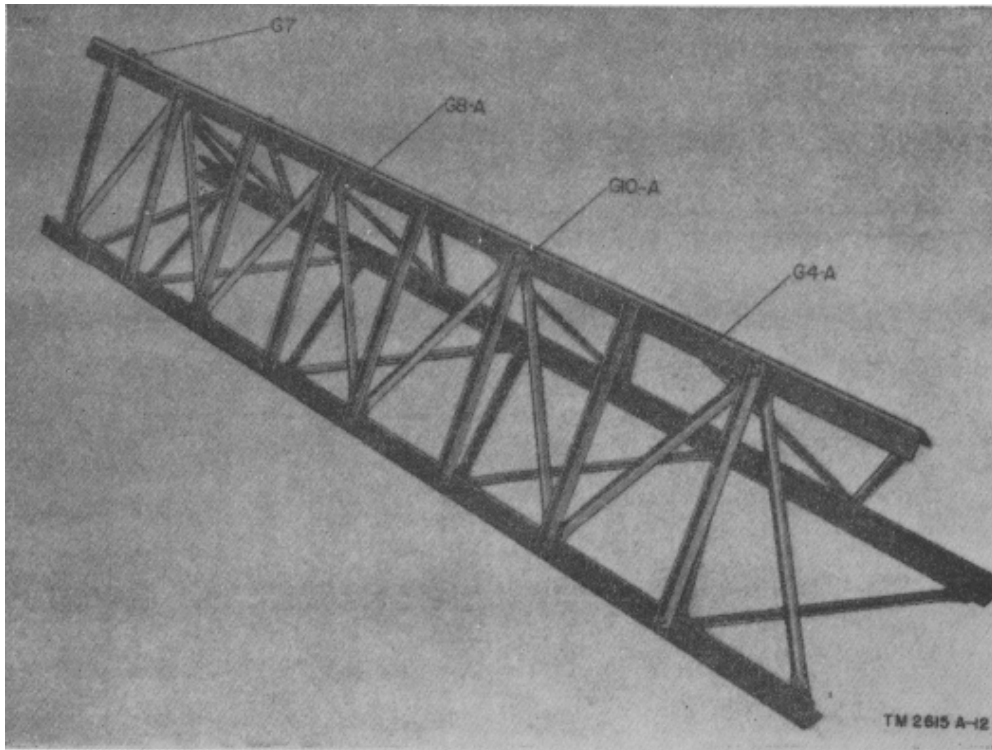


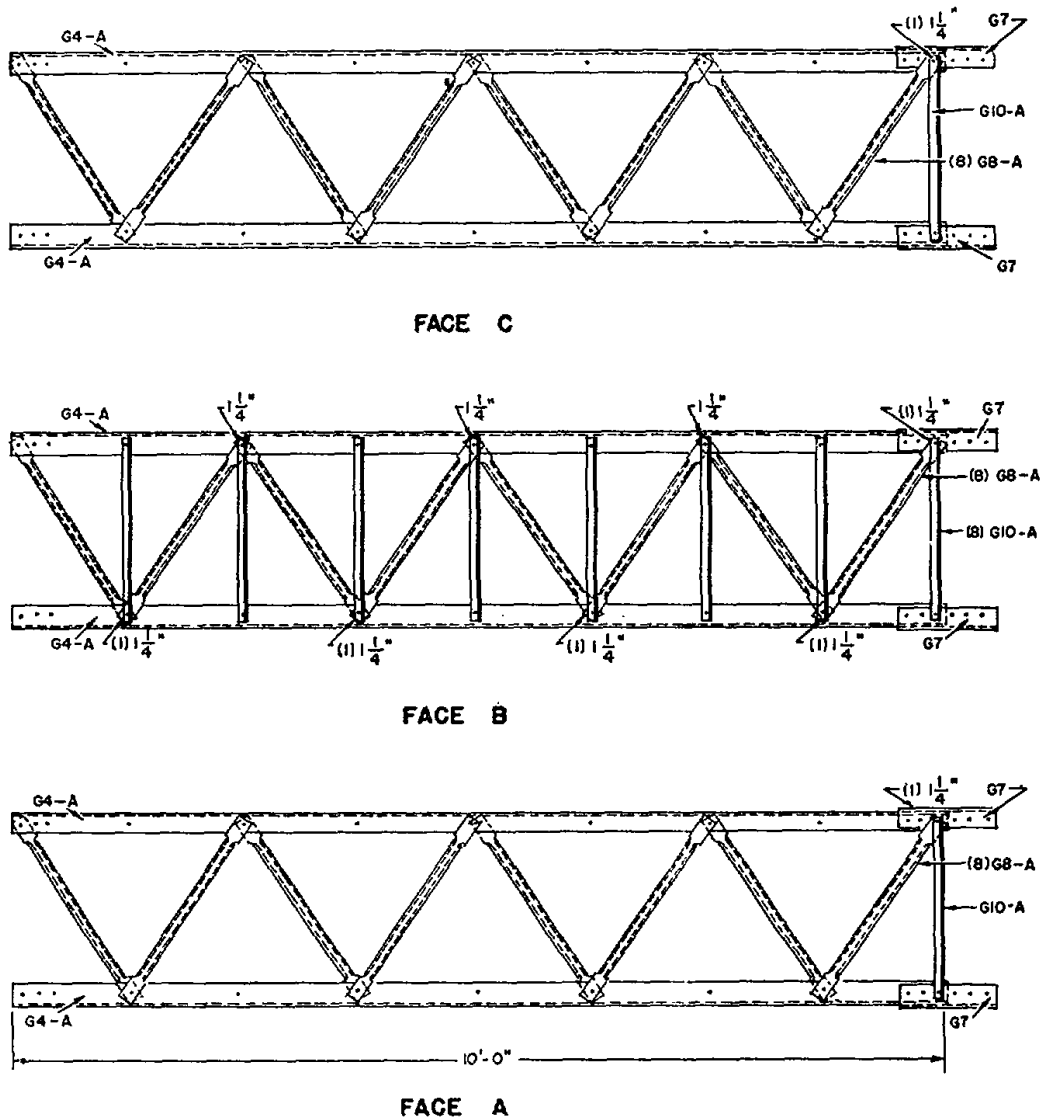
Figure 12. Section C4.

f. Assembling Section C5 (fig. 14).

- (1) The following component items are necessary for the assembly of section C5:

- 3 supporting posts G4-A.
- 3 splice plates G7.
- 24 diagonal braces G8-A.
- 7 horizontal braces G10-A.
- 1 horizontal brace G18.
- 1 horizontal brace G19.
- 1 horizontal brace G20.
- 1 antenna plate G21.
- 35 bolts, 3/8- by 1-inch.
- 14 bolts, 3/8- by 1 1/4-inch.
- 49 hexagonal nuts, 3/8-inch.
- 49 lockwashers for 3/8-inch diameter bolts.

- (2) The assembly of section C5 differs from the assembly of section C4 only as follows: the top horizontal braces G19, G18, and G20 are used on faces A, B, and C, respectively, in place of horizontal brace G10-A and by the, addition of antenna plate G21 (pars. (5) and (6) below).
- (3) Section A-A, figure 14 illustrates the position and assembly of horizontal braces G18, G19, and G20. Connect braces G18 and G19 to faces B and A, respectively, G18 outside and G19 inside supporting posts



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

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Figure 13. Section C4, assembly details.

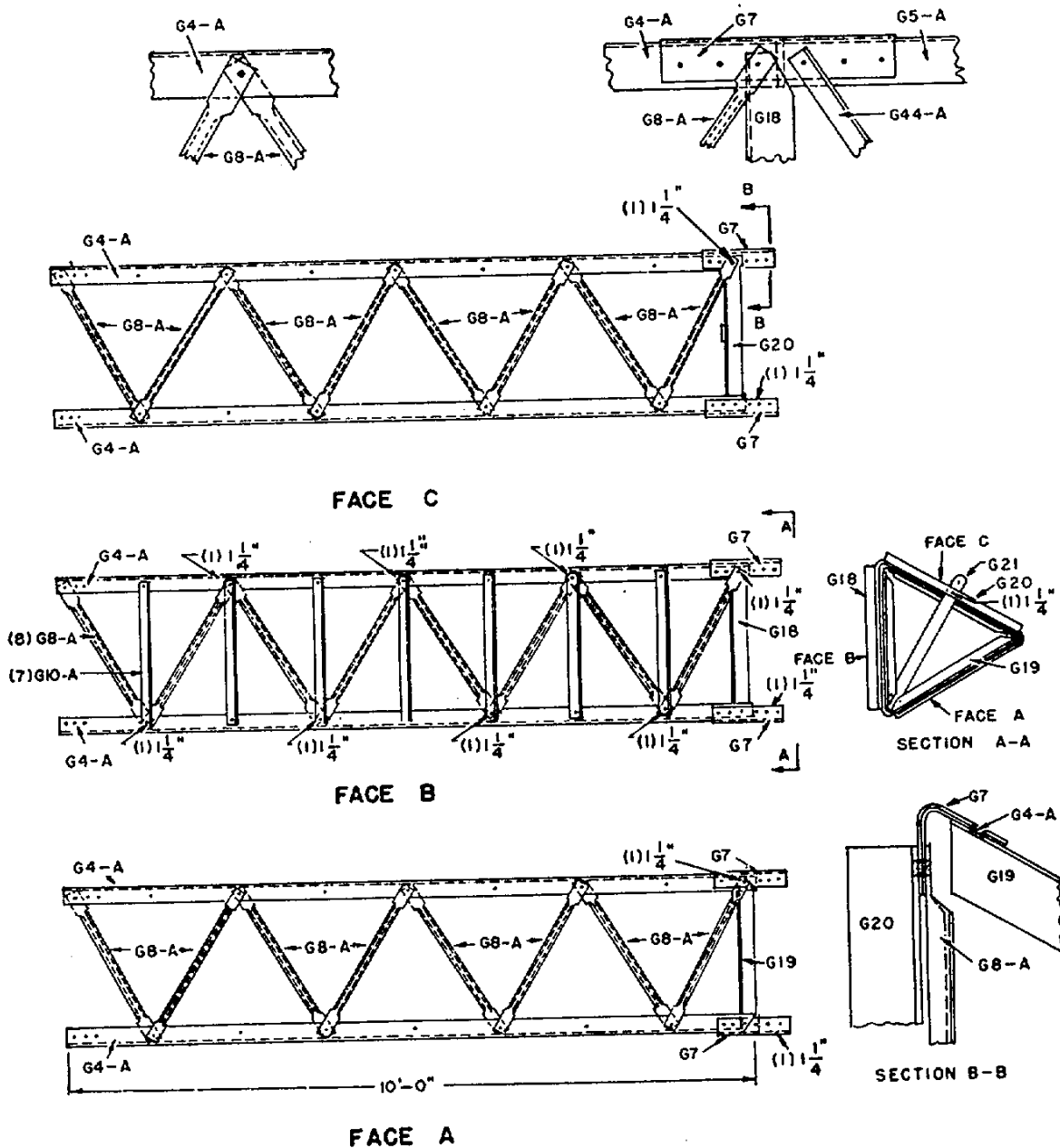
Position the braces so that each 2-inch leg bears against the post and each 2½-inch leg faces downward.

- (4) Bolt horizontal brace G20 on the outside of supporting posts G4-A, splice plates G7, and the top of diagonal G8-A. Position the brace with the 2-inch leg facing outward and the 3-inch leg facing downward (sect. B-B, fig. 14).
- (5) Connect antenna attachment plate G21 to top horizontal braces G18, G19, and G20, after section C5 is assembled completely, by positioning the plate with its two end holes aligned with the end holes of G18 and

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G19 on the under side of the 2 1/2-inch legs, as illustrated in section A-A, figure 14. Insert two each of 3/8-by 1-inch bolts through the holes from the plate side; add lockwashers and nuts.

- (6) Align the hole located approximately 4 inches from the opposite end of antenna attachment plate G21 with the center hole in the 3-inch leg of horizontal brace G20 (fig. 15). Secure them with a 3/8-by 1 1/4-inch bolt, a lockwasher, and a nut.



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

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Figure 14. Section C5, assembly details.

g. Assembling Section C6 (figs. 15 and 16).

- (1) Section C6 of Antenna Support AB-105C/FRC is the guy section of the support; this section includes the greatest number of component items. Locate the following components for ready availability during assembly of the section:

- 3 supporting posts G5-A.
- 3 splice plates G7.
- 5 diagonal braces G9-A.
- 1 horizontal brace G27.
- 1 horizontal brace G28.
- 1 horizontal brace G29.
- 1 antenna attachment plate G30.
- 2 antenna attachment plates G31.
- 3 horizontal braces G10-A.
- 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-A.
- 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.
- 65 bolts, 3/8- by 1-inch.
- 24 bolts, 3/8- by 1 1/4-inch.
- 5 bolts, 3/8- by 1 1/2-inch.
- 94 lockwashers for 3/8-inch diameter bolts.
- 94 hexagonal nuts, 3/8-inch.

- (2) To assemble face *A* of this section, position two supporting posts G5-A on the ground. Designate the left-hand post *G5-AL* and the right-hand post *G5-AR*.
- (3) Locate horizontal brace G28 so that the leg having three holes in one end rests against the inside leg of supporting post G5-AR, with the end hole in the brace aligned with the top hole in post G5-AR. Align the hole in the other end of brace G28 with the end hole in supporting post G5-AL.
- (4) Insert a gusset plate G36 between supporting post G5-AR and horizontal brace G28. Align the five holes along the one edge of plate G36 with the top five holes in supporting post G5-AR and the three holes along the other edge of the plate with the three holes in brace G28.

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- (5) Position a splice plate G7 on supporting post G5-AR; match the three bottom holes in the splice plate with the top three holes in the supporting post. Place a splice plate G7 on post G5-AL in the same manner.
- (6) Insert a 3/8- by 1 1/4-inch bolt through the end hole in brace G28 and the aligned holes in plate G36, post G5-AR, and splice plate G7. Add a lockwasher and a nut. Attach plate G36 and post G5-AR to splice plate G7 with two each of the 3/8- by 1 1/4-inch bolts, lockwashers, and nuts. Complete the attachment of G36 to post G5-AR with two each of the 3/8- by 1-inch bolts, lockwashers, and nuts.
- (7) Insert a 3/8- by 1 1/4-inch bolt through the top hole in supporting post G5-AL, splice plate G7, and the free end of brace G28. Add a lockwasher and a nut.
- (8) Secure a splice plate G7 to post G5-AL by means of two each of the 3/8- by 1-inch bolts, lockwashers, and nuts.
- (9) Position a horizontal brace G23 on the inside of posts G5-AL and G5-AR; align the end holes in the brace with the middle hole of the top group of three brace holes in supporting posts (face A, fig. 16).
- (10) Place a side guy plate G47 on post G5-AR so that the three holes opposite the clipped edge of the plate match with the top group of three brace holes in the supporting post. Insert a 3/8- by 1 1/4-inch bolt through horizontal brace G23, the center holes in post G5-AR and guy plate G47, and a diagonal brace G44-A (with angled side facing out). Secure the bolt with a lockwasher and a nut.
- (11) Complete the attachment of guy plate G47 to post G5-AR with two each of the 3/8- by 1-inch bolts, lockwashers, and nuts.
- (12) Position the long back guy plate G38 diagonally across supporting post G5-AL; align the second group of three holes from the sheared end of the plate with the middle group of three brace holes in the post. Insert a 3/8-inch by 1 1/4-inch bolt through angle G23 and through the center holes in post G5-AL and guy plate G38; secure it with a lockwasher and nut. Secure the remaining two holes with two each of the 3/8- by 1-inch bolts, lockwashers, and nuts.
- (13) Place a diagonal brace G25 (smooth side facing out) beneath plates G36 and G38; align the five holes at each end of the brace with the five free holes in each plate. Attach the brace to the plates with five each of the 3/8-by 1-inch bolts, lockwashers, and nuts.

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- (14) Attach a second diagonal brace G44-A (smooth side out) to post G5-AL and the free end of brace G44-A, installed as instructed in (10) above; use a 3/8- by 1-inch bolt, a lockwasher, and a nut (fig. 16).
- (15) Attach a third diagonal brace G44-A (smooth side facing out) to post G5-AR and the free end of brace G44-A, installed as instructed in (14) above, with a 3/8- by 1-inch bolt, a lockwasher, and a nut (fig. 16).

Note. The free end of diagonal brace G44-A, installed as instructed in (15) above, will remain unsecured until the assembly of section C6 to section Co.

- (16) Position a third supporting post G5-A for joining to posts G5-AL and G5-AR to form faces B and C of the tower.
- (17) Supporting post G5-AL, in face A, becomes the right-hand post, and the third supporting post added as instructed in (16) above is the left-hand post in the assembling of face B. Assemble face B in the same manner as described for face A ((2) through (15) above), with the following exceptions:
 - (a) Use horizontal brace G27 instead of horizontal brace G28, installed as instructed in (3) above.
 - (b) Use horizontal brace G22 in place of horizontal brace G23, installed as instructed in (9) above.
 - (c) Substitute guy attachment plate G46 for plate G47, installed as instructed in (10) above.
 - (d) Use long guy attachment plate G37 instead of plate G38, installed as instructed in (12) above.
 - (e) Add three horizontal braces (steps) G10-A (fig. 16).
- (18) Supporting post G5-AR (in face A) and the third supporting post G5-A (left-hand post in face B) become the left- and right-hand posts, respectively, in assembling face C. Assemble face C in the following manner:
 - (a) Position horizontal brace G29 inside the left- and right-hand supporting posts and align the end holes in the brace with the top holes in the posts. Be sure that the leg of brace G29 provided with the two center holes faces the top of the section.
 - (b) Position a splice plate G7 on the left-hand post.
 - (c) Place diagonal brace G9-A (smooth side facing out) on top of the left-hand supporting post with its end hole aligned with the top hole in the post.

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- (d) Insert a 3/8- by 1 1/4-inch bolt through horizontal brace G29, left-hand supporting post G5-A, splice plate G7, and diagonal brace G9-A; secure the bolt with a lockwasher and a nut.
- (e) Complete the attachment of the left-hand supporting post to splice plate G7 with two each of the 3/8- by 1-inch bolts, lockwashers, and nuts.
- (f) Position a splice plate G7 on right-hand supporting post G5-A. Insert 3/8- by 1-inch bolt through the free end of brace G29, right-hand post G5-A, and plate G7. Add a lockwasher and a nut.
- (g) Complete the attachment of the right-hand post to splice plate G7 with two each of the 3/8- by 1-inch bolts, lockwashers, and nuts.
- (h) Place a second diagonal brace G9-A (smooth side facing out) in line with the first brace hole in the right-hand post. Insert a 3/8- by 1-inch bolt through this brace, through the right-hand post, and the free end of brace G9-A, installed as instructed in (c) above. Add a lockwasher and a nut.
- (i) Position a guy attachment plate G46 on the outside of the left-hand post so that the three holes in the plate align with the three holes of the first group of brace holes in the post. Align the end hole of horizontal brace G24 with the center hole of the same group of brace holes. The blank leg of brace G24 must face the top of the section. Insert a 3/8-by 1 1/4-inch bolt through the free end of brace G9-A, installed as instructed in (h) above, left-hand post G5-A, plate G46, and brace G24. Secure it with a lockwasher and a nut.
- (j) Complete the attachment of the left-hand post to plate G46 with two each of the 3/8- by 1-inch bolts, lockwashers, and nuts.
- (k) Position a guy attachment plate G47 on the outside of the right-hand post, aligning the three holes in the plate with the three holes of the first group of brace holes in the post. Align the end hole of the third brace G9-A (smooth side facing out) and the free end of brace G24, installed as instructed in (i) above, with the center hole of the same group of holes. Insert a 3/8-by 1 1/4-inch bolt through the aligned holes; secure it with a lockwasher and a nut.

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- (l) Complete the attachment of right-hand supporting post G5-A to plate G47 with two each of the 3/8- by 1-inch bolts, lockwashers, and nuts.
 - (m) Place a fourth diagonal brace G9-A (smooth side facing out) inside the supporting posts and fifth diagonal brace G9-A (smooth side facing out) outside the posts, as indicated by face C, figure 16 and secure them with 3/8- by 1-inch bolts, nuts, and lockwashers.
- (19) To complete the assembly of faces A, B, and C, proceed as follows:
- (a) Insert 3/8- by 1-inch bolts through the two remaining holes in guy attachment plate G47 (on supporting post G5-AR, face A), and plate G46 (on the left-hand supporting post, face C); and plate G46 (on the left-hand post, face B) and plate G47 (on right-hand post, face C). Add lockwashers and nuts.
 - (b) Insert a filler plate G45 (fig. 16) between adjacent guy attachment plates G37 and G38. Join the assembly with three each of the 3/8- by 1 1/2-inch bolts, lockwashers, and nuts.
 - (c) Position gusset plate G32 on the top flanges of horizontal braces G27 and G28 (sect. B-B, fig. 16). Align the three holes along each side of the gusset plate with the three holes in each of the horizontal braces.
 - (d) Place antenna attachment plate G30 over gusset plate G32; align the six holes in one end of plate G30 with the six center holes in the gusset plate.

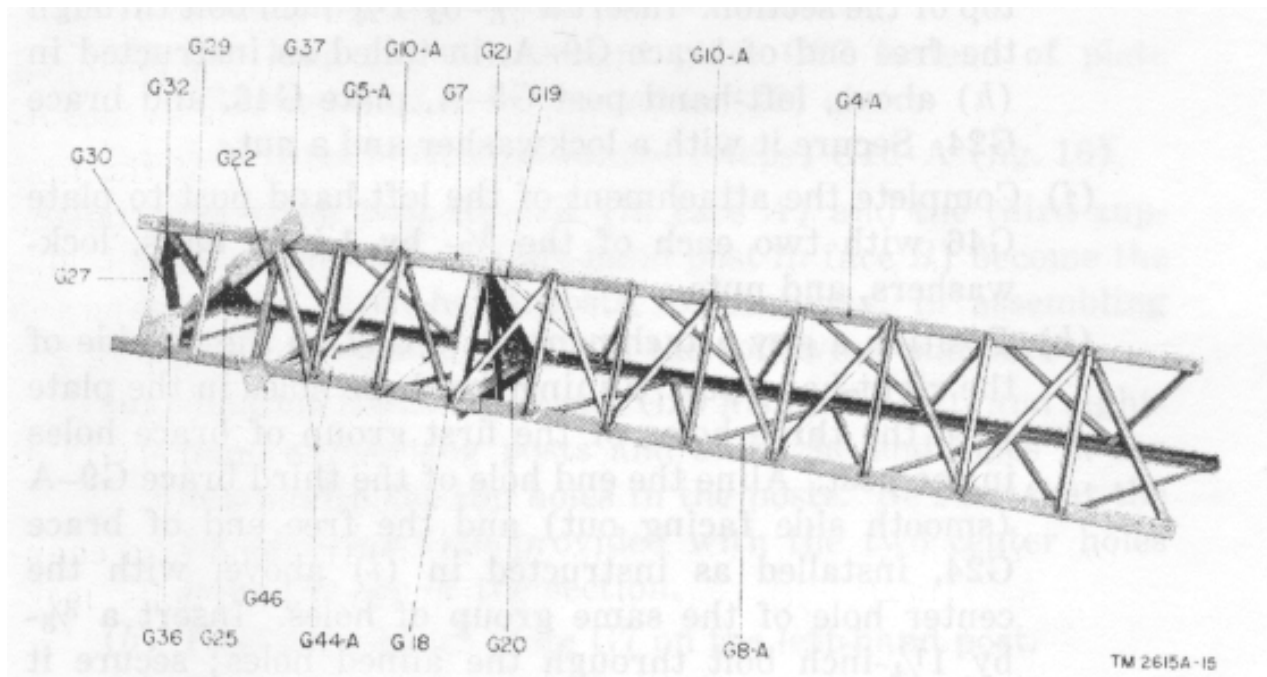


Figure 15. Sections C5 and C6.

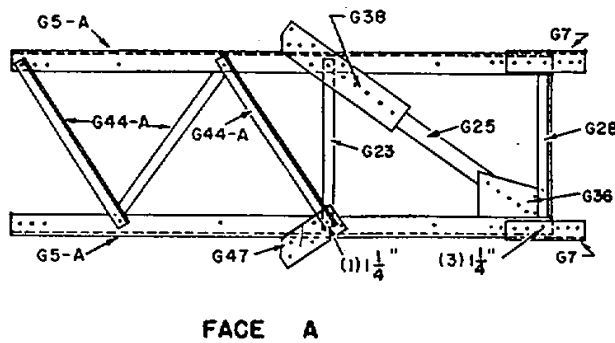
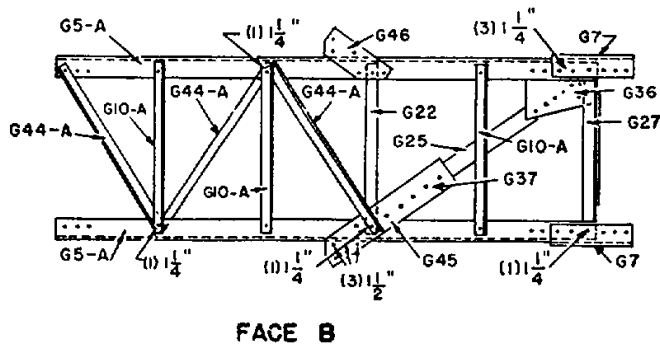
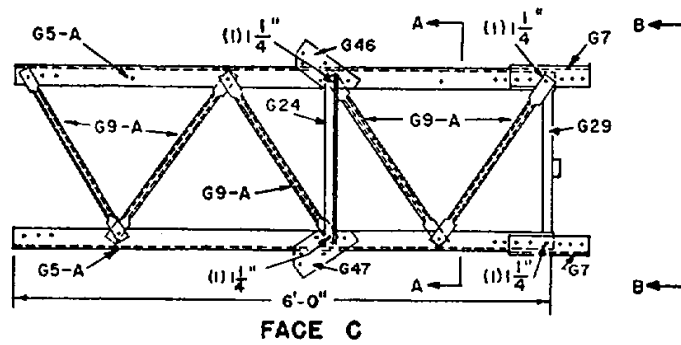
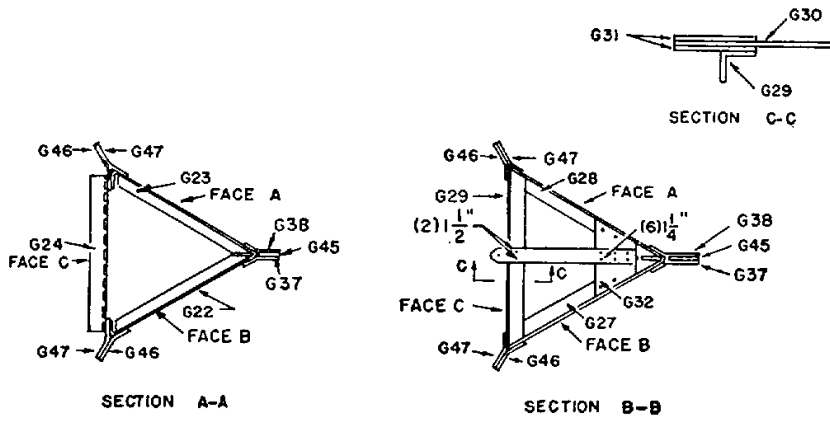
- (e) Secure gusset plate G32 to horizontal braces G27 and G28 by means of four each of the 3/8- by 1-inch bolts, lockwashers, and nuts.
- (f) Secure antenna attachment plate G30 to gusset plate G32 and the horizontal braces by means of six each of the 3/8- by 1 1/4-inch bolts, lockwashers, and nuts.
- (g) Insert a plate G31 between antenna attachment plate G30 and horizontal brace G29. Place another plate G31 on top of plate G30 as shown in section C-C, figure 16. Aline the connector and shackle holes in the three plates. Insert two each of the 3/8- by 1 1/2-inch bolts through the connecting holes in horizontal brace G29 and plates G30 and G31. Add the lockwashers and nuts.

h. Assembling Section C7 (fig. 17).

- (1) The following components are required for the assembly of section C7: 3 supporting posts G6-A.

- 3 supporting channels G17-B.
- 15 diagonal braces G9-A.
- 8 horizontal braces (steps) G10-A.
- 1 top plate G48.
- 24 bolts, 3/8- by 1-inch.
- 32 hexagonal nuts, 3/8-inch.
- 8 bolts, 3/8- by 1 1/4-inch.
- 32 lockwashers for 3/8-inch diameter bolts.
- 6 bolts, 1/2- by 1 3/8-inch.
- 6 hexagonal nuts, 1/2-inch.
- 6 lockwashers for 1/2-inch diameter bolts.

- (2) Place two posts G6-A on the ground, parallel to each other. Designate the left-hand post *G6-AL*, right-hand post *G6-AR*, and the completely assembled side as face A.
- (3) Insert a 3/8- by 1-inch bolt through one end of the first diagonal brace G9-A (smooth side facing in), the top hole in post G6-AL, and the top hole in one end of supporting channel G17-B (with flanges facing out and the flange with the two punched holes facing the top of the section). Secure the bolt with a lockwasher and a nut.
- (4) Complete the attachment of post G6-AL to channel G17-B with a 3/8- by 1-inch bolt, a lockwasher, and a nut.
- (5) Attach the top of post G6-AR to the free end of a channel G17-B with two each of the 3/8- by 1-inch bolts, lockwashers, and nuts.
- (6) Insert a 3/8- by 1-inch bolt through the second diagonal brace G9-A (smooth side facing out). Continue the



NOTES:
 1. ALL BOLTS ARE $\frac{3}{8}$ " DIAM BY 1" LONG EXCEPT WHERE NOTED.
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Figure 16. Section C6, assembly details.

bolt through the free end of brace G9-A, installed as instructed in (3) above, and the top brace hole in post G6-AR. Add a lockwasher and a nut.

- (7) Insert a 3/8- by 1 1/4-inch bolt through the free end of brace G9-A, installed as instructed in (6) above, through post G6-AL, third diagonal brace G9-A (smooth side out), and a horizontal brace G10-A (blank leg toward top of section). Secure it with a lockwasher and a nut.
- (8) Attach the free end of brace G10-A, installed as instructed in (7) above, to the outside of post G6-AR with a 3/8- by 1-inch bolt, a lockwasher, and a nut.
- (9) Insert a 3/8- by 1 1/4-inch bolt through fourth diagonal brace G9-A (smooth side facing out), through the third brace hole in post G6-AR, the free end of brace G9-A, installed as instructed in (7) above, and another horizontal brace G10-A. Secure it with a lockwasher and a nut.
- (10) Attach the free end of brace G10-A, installed as instructed in (9) above, to the outside of post G6-AL; use a 3/8- by 1-inch bolt, a lockwasher, and a nut.
- (11) Insert a 3/8- by 1-inch bolt through the free end of brace G9-A, installed as instructed in (9) above, through the bottom brace hole in post G6-AL, and the fifth diagonal brace G9-A (smooth side facing out). Add a lockwasher and a nut.

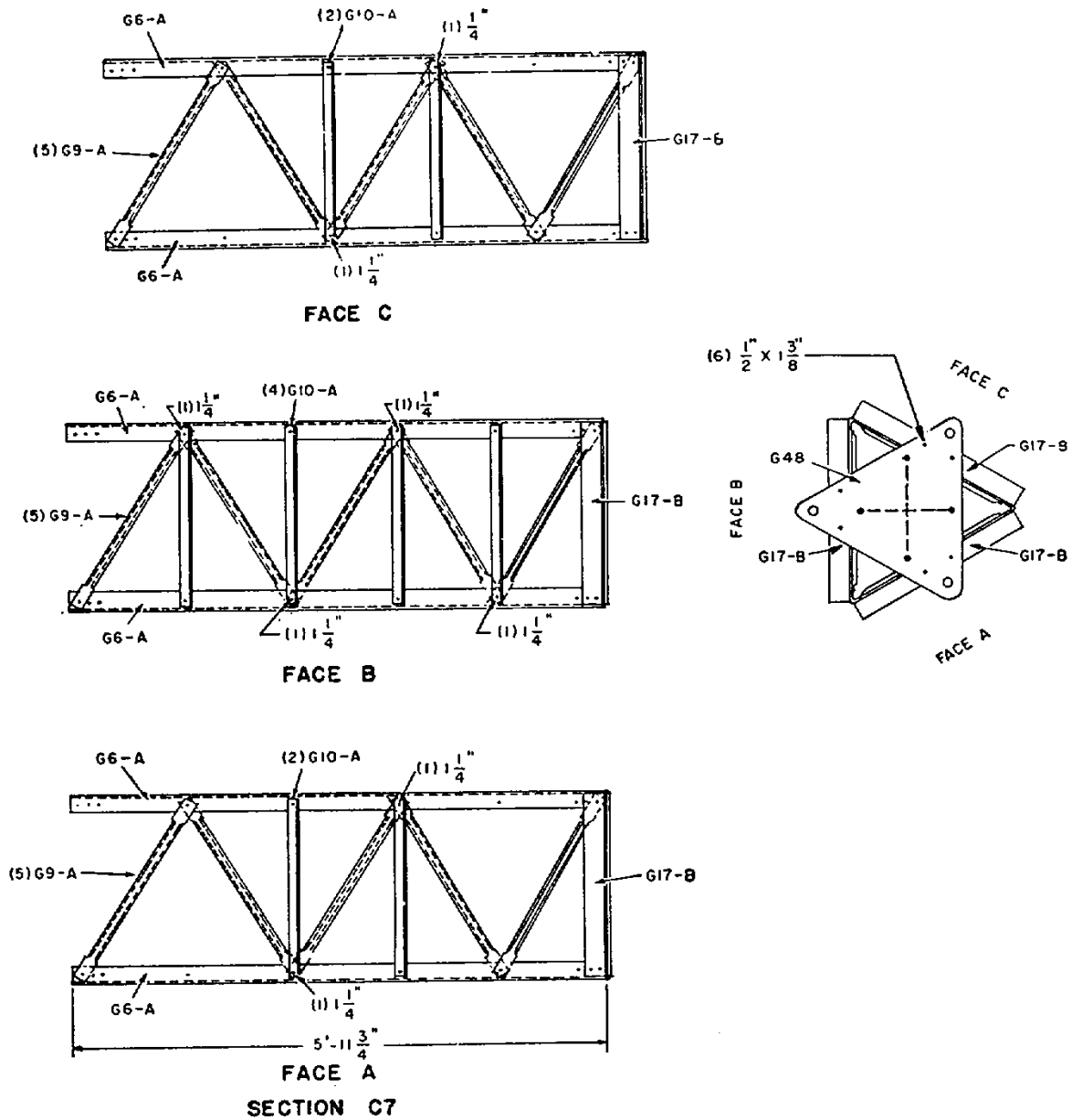
Note. The free end of brace G9-A, installed as instructed in (11) above, will remain unsecured until the assembly of section C7 to section C6.

- (12) Position a third supporting post G6-A for joining to posts G6-AL and G6-AR to form faces B and C of the tower.
- (13) Face A and face C are identical, and the assembly procedure is the same for both. Face B differs only in that two additional horizontal braces G10-A are provided (fig. 17).
- (14) After the three faces are assembled, place top plate G48 on top of the section (fig. 17).
- (15) Secure top plate G48 to the three supporting channels G17-B by means of six each of the 1/2- by 1 3/8-inch bolts, lockwashers, and nuts.

13. Assembly Antenna Support AB-105C/FRC

a. Except for 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 spring lockwashers are flattened fully; use a 6-inch wrench for this purpose. Be careful not to overtighten the bolts; overtightening strips the threads and damages the bolts.

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Figure 17. Section C7, assembly details.

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. Figure 4 illustrates a typical location plot for the antenna supports before raising. Gather sufficient blocking to facilitate assembly; the condition of the ground level determines the necessary blocking requirements.

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c. Position bottom assembly G16-A on the steel pedestal base or concrete pier; secure it in place with the cutaway portion of the flanges facing the direction from which the tower will be raised. Tighten the nuts only fingertight 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 to bring the face parallel to ground level.

e. Insert bottom assembly G15-A into bottom assembly G16-A and align the two sides holes. Insert a 3/8- by 6 3/4-inch shouldered bolt through the aligned holes and thread on a nut until it clears the hole drilled in the bolt. Insert a brass cotter pin through the hole and expand the pin.

f. Attach bottom assembly G14-A, which is secured to section C1, to bottom assembly G15-A by means of a 3/4- by 6 3/4-inch shouldered bolt, a nut, and a brass cotter pin. Block section C1 to compensate for the height of the base and any unevenness of the ground.

g. Be sure that face C of section C2 is parallel to the ground and properly blocked. Connect section C2 to section C1 by means of the splice plates 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-A of section C2 on all three faces of the section. Use lockwashers on all bolts and tighten the nuts fingertight.

h. Connect section C3 to section C2 as instructed in paragraph g above. Be careful to determine matched facings and to connect the free ends of the diagonal braces G8-A to the supporting posts on all three faces.

i. 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.

j. Continue the assembly of the support; use the procedures described above, until the entire structure is assembled.

k. Thoroughly inspect the assembled structure.

(1) Check the alignment and make all necessary adjustments.

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

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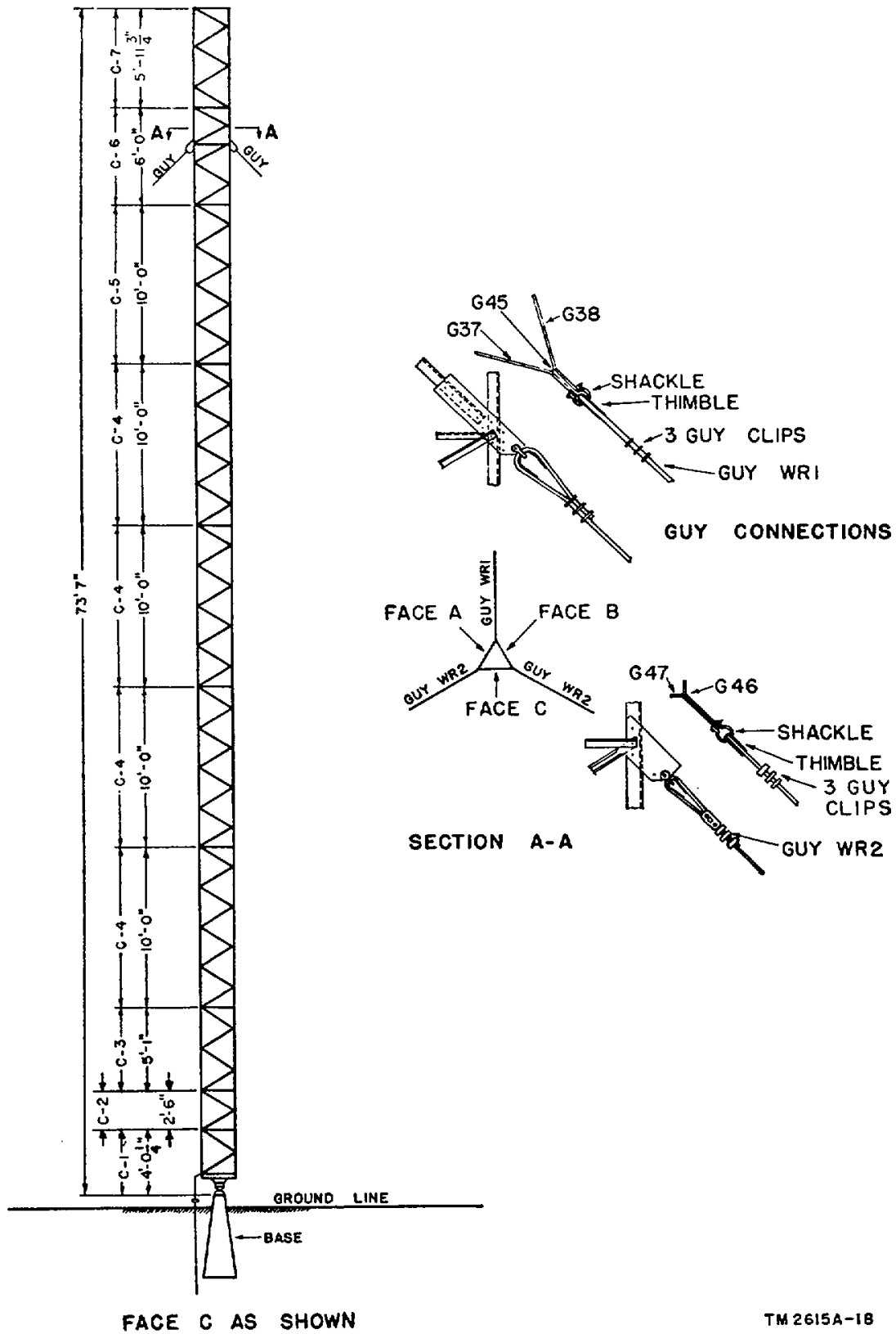


Figure 18. Antenna support, guy connection details.

14. Erecting Antenna Support AB- 105C/FRC

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.* Refer to TM 11-2614 for detailed information and instructions on the assembly of the 30-foot tower.

- (1) Position the ladder face of the gin pole parallel to line ABC (fig. 19), 3 1/2 feet from the center of the support foundation. The center of the gin pole must rest upon the center line of the antenna support.
- (2) Locate the screw anchors, which are 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 is at a 45° angle to the ground and so that not more than 6 inches of the anchor rod projects above the ground.
- (3) Connect the side guys for the gin pole to the screw anchors and the back guy to the permanent anchor for the support of guy WR1 (5/8-inch diameter) (fig. 19).

c. *Ground Preparation Before Hoisting.* To erect the antenna support, obtain the following equipment in addition to Erection Kit MX-746/FR:

- (1) Jack (standard truck jack).
- (2) Wooden blocks for use as spacers between the jack and the foundation and between the jack and the gin pole (d(1) below).
- (3) Component items of radio station Tool Equipment TE87-A including: one block set for raising the support (1 double wooden block, 1 double wooden block with becket, 300 feet of 3/8-inch rope) ; one block set for tensioning guys (1 double wooden block, 1 double wooden block with becket, 100 feet of 1/2-inch rope); two grips (come-a-long) for tensioning the 5/16-inch guys WR2; 100 feet of 1/2-inch wire rope with loops on each end; 175 feet of 3/4-inch rope for temporary guys for the antenna support; 6 feet of 3/4-inch rope for sling-on support (d(7) below).

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d. *Installing Guys.*

- (1) Place a temporary wooden strut, consisting of a jack and wooden blocks, between the foundation of the antenna support and the base of the gin pole.
- (2) Locate the 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 of the support. Install these anchors as described in b(2) above. Points A and C on figure 19 designate the position of the anchors.
- (3) 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). 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 which consists of plates G46 and G47 (fig. 18). Attach the shackle provided with the 5/8-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.
- (4) Dimension E (fig. 20) is the theoretical length of the guy from the point of guy attachment on the support to the center of the anchor rod eye when the turnbuckle is open to its full travel. Use the table in (a) below and the actual dimension A, as determined in 11d(1), to ascertain the dimension E.

Note. On level ground where dimension A is 67 feet 1/4 inch long, dimension E is 89 feet 9 3/4 inches long for guy WR1 and 90 feet 11 3/4 inches long for guy WR2.

- (a) Use the table below to determine the dimensions E for Guys WR1 and WR2 and to determine the proper guy tension. Locate the given dimension A in the first column of the table, and then find the corresponding value for dimension E in the columns labeled E (guy WR1) and E (guy WR2). For values of A not actually listed in the table below, 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.

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A (ft)	D (ft)	E (guy WR1) (ft)	E (guy WR2) (ft)	V1 ^a	V2 ^b	V3 ^c	V4 ^d
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

a Column V1-vibrations per minute, guy WR2, 1,600-pound initial tension, all supports.

b Column V2-vibrations per minute, guy WR2, 1,200-pound final tension, end supports.

c Column V3-vibrations per minute, guy WR2, 1,460-pound final tension, side supports.

d Column V4-vibrations per minute, guy WR1, 1,600-pound initial tension, all supports.

- (b) Lay out the calculated length E along guy WR2. Use a wire rope clip and attach each guy WR2 to the thimble-eye (fig. 20) of the permanent anchor at that length. After the support is raised, 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.

- (5) Use an 85-foot, 3/4-inch length of manila 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 location A. Run the free end of the rope through the thimble-eye of the screw anchor at point A and then snub it with several turns around the projecting rod.
- (6) Repeat the procedure given in (5) above and connect another 85-foot length of manila rope to the horizontal brace G20 and the supporting post on section C5 nearest location C. Secure the free end of the rope to the screw anchor at location C.

- (7) Loop and secure the free ends of a 6-foot length of 3/4-inch manila rope around the uppermost supporting post G5-A of section C6 as shown in detail X, figure 19. Use a wooden block, as illustrated, to avoid cutting the rope.

Use two wire rope clips and connect one end of a 100-foot, 1/2-inch wire rope hoisting cable to the sling thus formed.

- (8) 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 it with two wire rope clamps.
- (9) 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 ((7) above) in the hoisting cable.
- (10) Raise the hoisting cable to the top of the gin pole and place the cable on the top sheave as illustrated in detail Y, figure 19. 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-1, figure 19. Keep the thimble-eye clear during the raising process (e below). The support now is ready to be hoisted.

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

e. Hoisting Antenna Support.

- (1) For the hoisting procedure (fig. 19), set up the following stations:
 - (a) Position five men at the running end of the hoisting tackle assembly.
 - (b) Assign two or three men to each temporary guy at points A and C, respectively.
 - (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 and keeps positive control of the crews at all times during the hoisting operation.

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- (2) At the local commander's order to commence to raise, the various crews proceed as follows:
- (a) The hoisting crew pulls the running end of the hoisting tackle.
 - (b) The men at the temporary guy locations A and B grasp the open end of the rope and prepare to ease or take up the snubbing line.
 - (c) The men positioned on the 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 the alinement 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 eases the tension applied to the tackle assembly.
 - (b) The temporary guy crews exert care to maintain alinement and to ease or to 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 (position No. 3, fig. 19), check the guys WR2 to determine that they are attached properly to their anchors. If they are attached correctly, the guys may be tensioned by means of the turnbuckles (f below). If they are not attached properly, 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 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 wire rope clips and pull the pulling line of the tackle. Tension each of the side guys to approximately 1,600 pounds (f(1) below).

(c) Connect the wire rope clips approximately 6 inches from the thimble-eye (sect. B-B, fig. 20). 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 connect it temporarily with a wire rope clamp to the anchor rod (detail Z-1, fig. 19). Fasten an oval eyebolt (part of Erection Kit MX-746/FR) by means of two 5/8-inch wire rope clamps to guy WR1 as illustrated in detail Z-11, figure 19. Be sure to fasten the oval eyebolt 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 oval eyebolt.

(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 (*f*(1) (*d*) below). Locate and secure three wire rope clamps as illustrated in detail A-A, figure 20.

Note. The wire rope clamp is designed so that the saddle of the clamp forms a seat and prevents the butting 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 G-bolt and results in severe cutting of the guy strand.

(7) Remove all temporary guys and hoisting tackle.

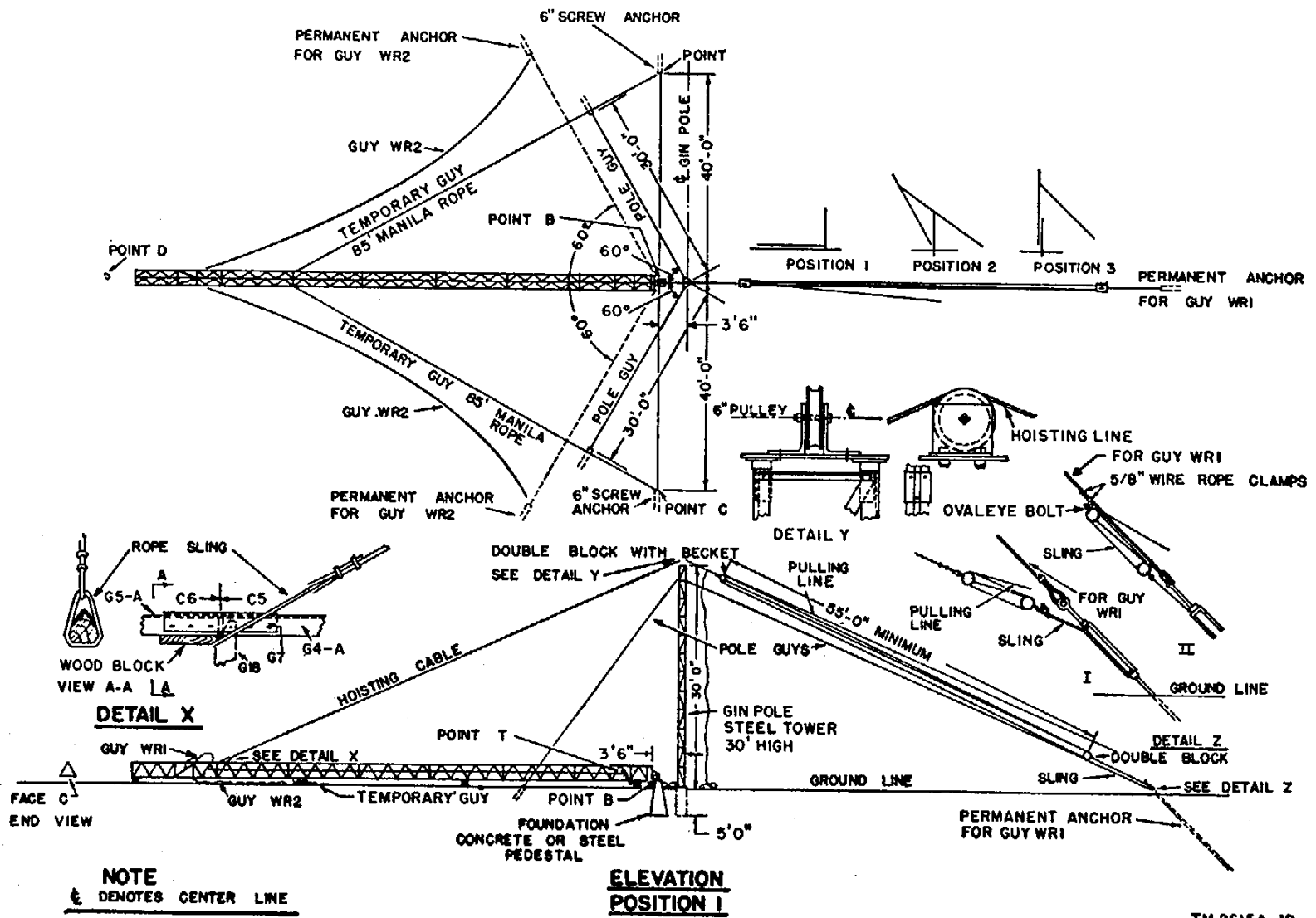
(8) Apply Grease, general purpose No. 2(WB), to the threaded parts of the turnbuckles. The grease is a rust preventive and will facilitate adjustment of guy tension (*f* below).

f. 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. Determine the tension under conditions where the support is plumb and there is no wind blowing. To determine guy tension in the field, use the table in dc(4) (*a*). To determine the tension of a guy for a given span, observe the natural rate of vibration for the guy.

(1) Obtaining initial tension, all guys.

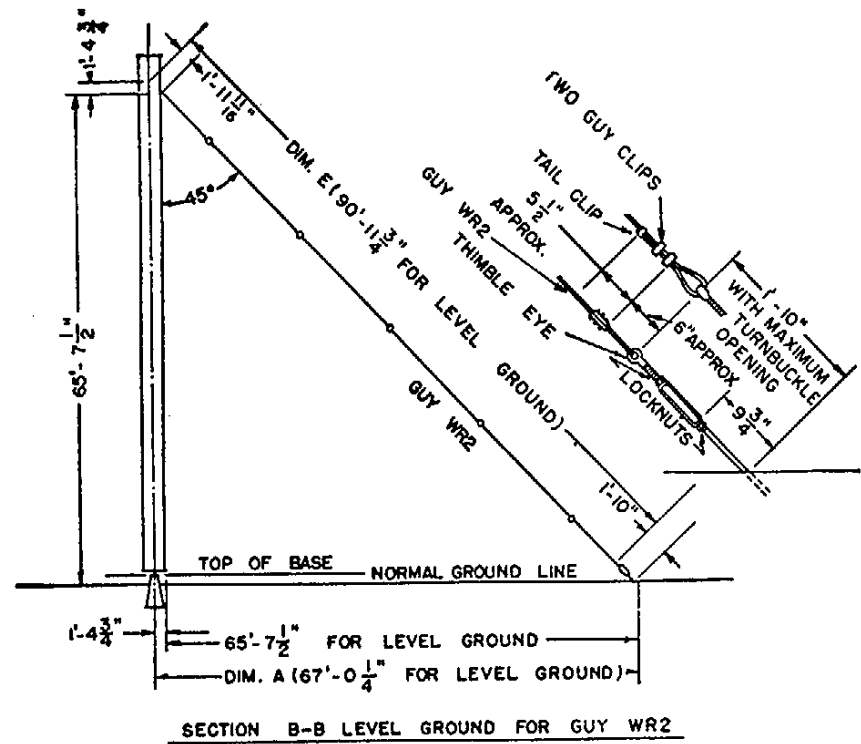
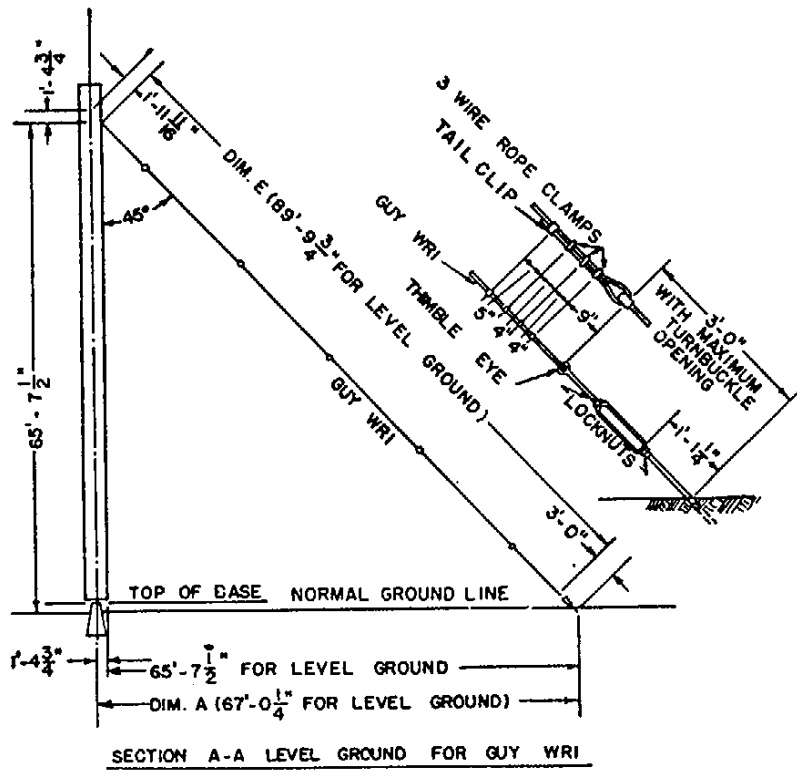
(a) Determine, from column V1 of the table in paragraph 14d(4) (*a*), the number of vibrations per minute (for an initial tension of 1,600 pounds) corresponding to the actual guy length (WR2) used. For example, for a given guy WR2 length of 98 feet (dimension E), the correct number of vibrations per minute as determined by the table is 111. Record this vibration rate.

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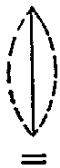
Figure 19. Method of raising support.



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

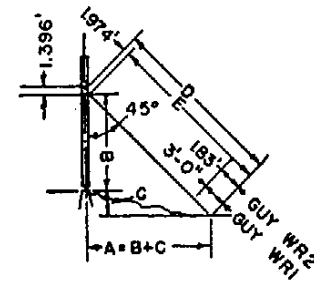
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NOTES

DIAM OF GUY WRI = 5/8"
 DIAM OF GUY WR2 = 5/16"



IRREGULAR GROUND

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Figure 20. Guy diagram.

- (b) Push the guy and set it swinging back and fourth 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 with a transit to see that the support is plumb. If a transit is not available, line up the corner post 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 the table in (a) above. Tighten the guys to increase 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 the table in 14d(4) (a) indicates the vibration rate for guy WR1, but 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 112617. When all the wires have been sagged the same amount, adjust and secure the turnbuckles in the 5/8-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 to check the tension of the 5/16-inch WR2 guys of the end supports. Determine, from column V2 of the table in 14d(4) (a), 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 is 1,200 pounds. To maintain the top of the support in the same position and to prevent a change in the sag in the antenna wires, adjust all three turnbuckles alike. After the

turnbuckles are adjusted, tighten all locknuts, pass safety wire through the turnbuckle body and eye of the thimble-eye bolt, and secure the turnbuckle so that it will not turn.

- (3) *Final tension, side supports.* Since the load on the side antenna supports is about one-third as much as on the end supports, the tension in the guys of the side supports changes very little 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 the table in 14d(4) (a). The tension of the guys should be approximately 1,460 pounds. Use the vibration method to check the tension; make the necessary adjustment in the turnbuckles; tighten the locknuts and secure the turnbuckle ((2) (b) above).

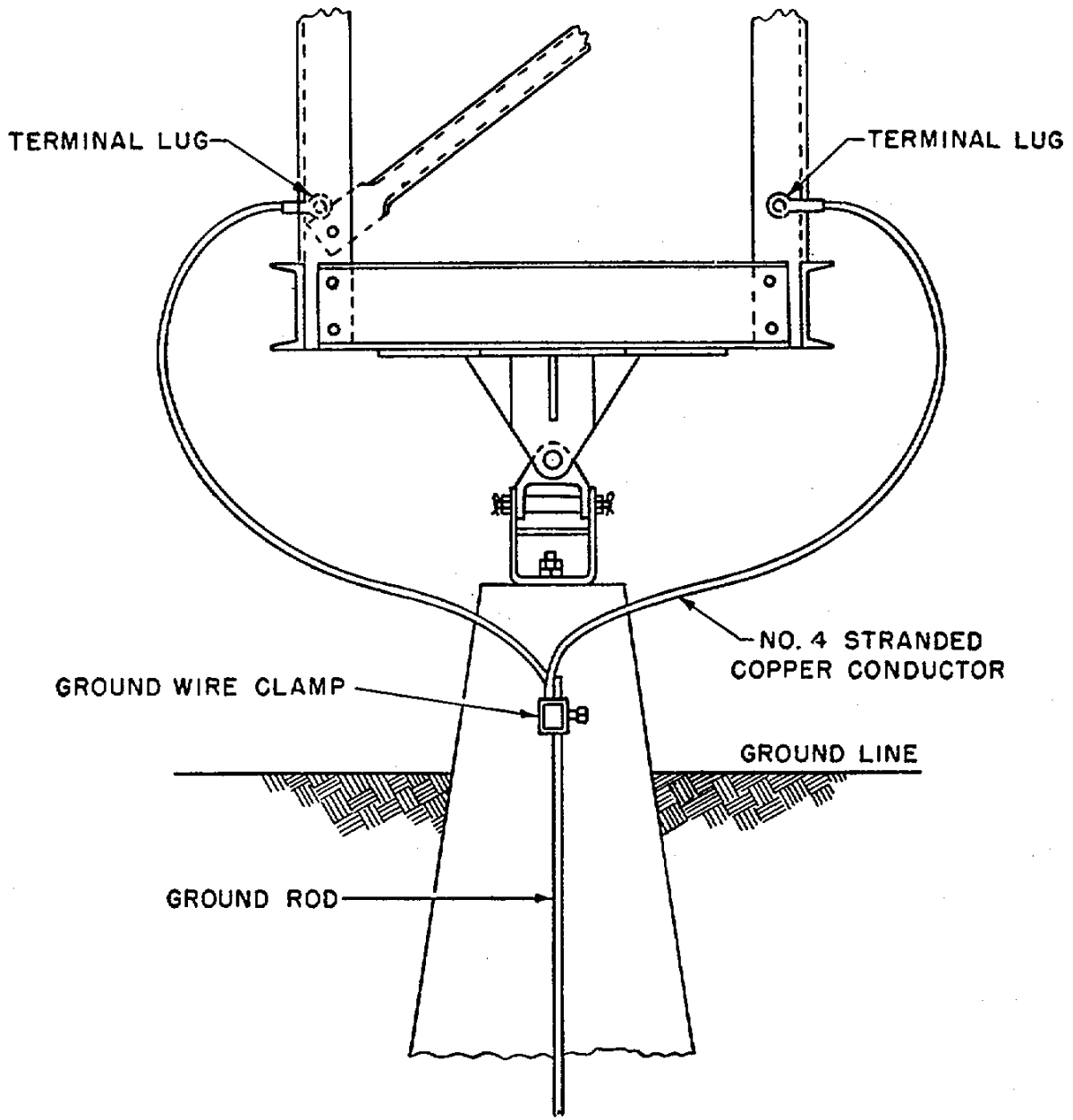
15. Installing Ground System (fig. 21)

- a. Force the 8-foot ground rod into the ground near the base of the support until only 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 terminal lug to the free end of each 3-foot length of wire.
- d. Use 3/8- by 1-inch bolts with flat washers and lockwashers to bolt the terminal lugs to the supporting posts of section C1. Insert the bolts through the third hole from the bottom of the supporting posts (fig. 9).

16. Final Steps

- a. If the installation is permanent, cut off the excess guy lengths on both guys WR1 and WR2 (sects. A-A and B-B, fig. 20). 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 it (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.

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FACE C

TM 2615A-21

Figure 21. Ground system.

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CHAPTER 3

MAINTENANCE INSTRUCTIONS

Section I. TOOLS, EQUIPMENT, AND LUBRICANTS

17. Tools and Materials

The following tools and materials must be on hand before performing preventive maintenance:

Brush, paint (Sig C stock No. 6Z1558-1).

Common hand tools.

Grease, general purpose No. 2 (WB) (QMC stock No. 14-G1230-5).

Paint OD (Sig C stock No. 6G1506.3).

Sandpaper #000 (Sig C stock No. 6Z7500-000).

18. Lubricants

When adjusting the guys and turnbuckles, apply a small amount of grease (WB) as a rust preventive. The application of the grease also facilitates the adjustment of the guy tension.

Section II. PREVENTIVE MAINTENANCE SERVICES

19. Meaning and Importance

Preventive maintenance means making systematic checks and adjustments at regular intervals to keep equipment at top efficiency. It is not the same as trouble shooting and repair. The purpose of preventive maintenance is to *prevent* breakdowns and, therefore, the need for repair. The purpose of trouble shooting and repair is to locate and *correct existing defects*. The importance of preventive maintenance cannot be overemphasized. Failure of one piece of the equipment may cause the failure of the entire equipment. It is vitally important, therefore, that operators and repairmen maintain their equipment properly.

20. Procedures

a. General. Antenna Support AB-105C/FRC requires routine preventive maintenance. The performance of preventive maintenance operations depends to a certain degree upon the climatic conditions encountered in the particular

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location where the antenna support is set up. 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 indicated by rusting or corrosion of metal parts of the support and of mounting and guy facilities. Rusting of threaded parts of the guy wire turnbuckles may cause 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. Specific Requirements. 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 the color, the placement, the state of cleanliness, and the 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.

c. Use of Preventive Maintenance Forms (figs. 22 and 23).

- (1) This information is presented as a guide to the individual making an inspection of the equipment in accordance with instructions on DA AGO Forms 11-238 and 11-239. The decision as to which items on the forms are applicable to this equipment is a tactical decision to be made in the case of First Echelon Maintenance by the Communication Officer/Chief or his designated representatives, and in the case of Second and Third Echelon Maintenance by the individual making the inspection. Instructions for the use of each form appear on the reverse side of the form.
- (2) This manual contains preventive maintenance information that will aid in completing the forms. Pertinent instructions in the manual are cross-referenced to item numbers of the forms in *d* and *e* below.

d. DA AGO Form 11-238, Operation First Echelon Maintenance Check List for Signal Corps Equipment Radio Communication, Direction Finding, Carrier, Radar.

Form 11-238 item No.	Paragraph references (this manual)
7	21b
8	20b
17	21c

OPERATOR FIRST ECHELON MAINTENANCE CHECK LIST FOR SIGNAL CORPS EQUIPMENT RADIO COMMUNICATION, DIRECTION FINDING, CARRIER, RADAR										
INSTRUCTIONS: See other side										
EQUIPMENT NOMENCLATURE					EQUIPMENT SERIAL NO.					
LEGEND FOR MAKING CONDITIONS: ✓ Satisfactory; X Adjustment, repair or replacement required; ⊕ Defect corrected. NOTE: Strike out items not applicable.										
DAILY										
NO.	ITEM	CONDITION								
		S	M	T	W	T	F	S		
1	COMPLETENESS AND GENERAL CONDITION OF EQUIPMENT (receiver, transmitter, carrying cases, wire and cable, microphones, tubes, spare parts, technical manuals and accessories).									
2	LOCATION AND INSTALLATION SUITABLE FOR NORMAL OPERATION.									
3	CLEAN DIRT AND MOISTURE FROM ANTENNA, MICROPHONE, HEADSETS, CHESTSETS, KEYS, JACKS, PLUGS, TELEPHONES, CARRYING BAGS, COMPONENT PANELS.									
4	INSPECT SEATING OF READILY ACCESSIBLE "PLUCK-OUT" ITEMS: TUBES, LAMPS, CRYSTALS, FUSES, CONNECTORS, VIBRATORS, PLUG-IN COILS AND RESISTORS.									
5	INSPECT CONTROLS FOR BINDING, SCRAPING, EXCESSIVE LOOSENESS, WORN OR CHIPPED GEARS, MISALIGNMENT, POSITIVE ACTION.									
6	CHECK FOR NORMAL OPERATION.									
WEEKLY										
NO.	ITEM	COND. - ITEM	NO.	ITEM	COND. - ITEM					
						S	M	T	W	
7	CLEAN AND TIGHTEN EXTERIOR OF COMPONENTS AND CASES, RACK MOUNTS, SHOCK MOUNTS, ANTENNA MOUNTS, COAXIAL TRANSMISSION LINES, WAVE GUIDES, AND CABLE CONNECTIONS.		13	INSPECT STORAGE BATTERIES FOR DIRT, LOOSE TERMINALS, ELECTROLYTE LEVEL AND SPECIFIC GRAVITY, AND DAMAGED CASES.						
8	INSPECT CASES, MOUNTINGS, ANTENNAS, TOWERS, AND EXPOSED METAL SURFACES, FOR RUST, CORROSION, AND MOISTURE.		14	CLEAN AIR FILTERS, BRASS NAME PLATES, DIAL AND METER WINDOWS, JEWEL ASSEMBLIES.						
9	INSPECT CORD, CABLE, WIRE, AND SHOCK MOUNTS FOR CUTS, BREAKS, FRAYING, DETERIORATION, RINKS, AND STRAIN.		15	INSPECT METERS FOR DAMAGED GLASS AND CASES.						
10	INSPECT ANTENNA FOR ECCENTRICITIES, CORROSION, LOOSE FIT, DAMAGED INSULATORS AND REFLECTORS.		16	INSPECT SHELTERS AND COVERS FOR ADEQUACY OF WEATHER-PROOFING.						
11	INSPECT CANVAS ITEMS, LEATHER, AND CABLES FOR MILDEW, TEARS, AND FRAYING.		17	CHECK ANTENNA GUY WIRES FOR LOOSENESS AND PROPER TENSION.						
12	INSPECT FOR LOOSENESS OF ACCESSIBLE ITEMS: SWITCHES, KNOBS, JACKS, CONNECTORS, ELECTRICAL TRANSFORMERS, POWER-STATS, RELAYS, SELSYMS, MOTORS, BLOWERS, CAPACITORS, GENERATORS, AND PILOT LIGHT ASSEMBLIES.		18	CHECK TERMINAL BOX COVERS FOR CRACKS, LEAKS, DAMAGED GASKETS, DIRT AND GREASE.						
19 IF DEFICIENCIES NOTED ARE NOT CORRECTED DURING INSPECTION, INDICATE ACTION TAKEN FOR CORRECTION.										

DA AGO FORM 11-238
1 MAY 51

REPLACES DA AGO FORM 419, 1 DEC 50, WHICH IS OBSOLETE.

TM 2615A-22

Figure 22. DA AGO Form 11-238, with applicable items circled.

e. DA AGO Form 11-239, Second and Third Echelon Maintenance Check List for Signal Corps Equipment-Radio Communication, Direction Finding, Carrier, Radar.

Form 11-239 item No.	Paragraph references (this manual)
3	21b(1)
7	21b(2)(3)
8	20b
10	21b(4)
17	21c

SECOND AND THIRD ECHELON MAINTENANCE CHECK LIST FOR SIGNAL CORPS EQUIPMENT				
RADIO COMMUNICATION, DIRECTION FINDING, CARRIER, RADAR				
INSTRUCTIONS: See other side				
EQUIPMENT NOMENCLATURE			EQUIPMENT SERIAL NO.	
LEGEND FOR MARKING CONDITIONS: ✓ Satisfactory; X Adjustment, repair or replacement required; ① Defect corrected. NOTE: Strike out items not applicable.				
NO.	ITEM	NO.	ITEM	NO.
1	COMPLETENESS AND GENERAL CONDITION OF EQUIPMENT (receiver, transmitter, carrying case, wire and cable, microphone, tubes, spare parts, technical manuals and accessories).	19	ELECTRON TUBES - INSPECT FOR LOOSE ENVELOPES, CAP CONNECTORS, CRACKED SOCKETS; INSUFFICIENT SOCKET SPRING TENSION; CLEAN DUST AND DIRT CAREFULLY; CHECK EMISSION OF RECEIVER TYPE TUBES.	
2	LOCATION AND INSTALLATION SUITABLE FOR NORMAL OPERATION.	20	INSPECT FIRM CUT-OUTS FOR LOOSE PARTS, DIRT, MISALIGNMENT AND CORROSION.	
③	CLEAN DIRT AND MOISTURE FROM ANTENNA, MICROPHONE, HEADSETS, CHESTSETS, KEYS, JACKS, PLUGS, TELEPHONES, CARRYING BAGS, COMPONENT PANELS.	21	INSPECT FIXED CAPACITORS FOR LEAKS, BULGES, AND DISCOLORATION.	
4	INSPECT SEATING OF READILY ACCESSIBLE "PLUCK-OUT" ITEMS: TUBES, LAMPS, CRYSTALS, FUSES, CONNECTORS, VIBRATORS, PLUG-IN COILS AND RESISTORS.	22	INSPECT RELAY AND CIRCUIT BREAKER ASSEMBLIES FOR LOOSE MOUNTINGS; BURNED, PITTED, CORRODED CONTACTS; MISALIGNMENT OF CONTACTS AND SPRINGS; INSUFFICIENT SPRING TENSION; BINDING OF PLUNGERS AND HINGE PARTS.	
5	INSPECT CONTROLS FOR BINDING, SCRAPING, EXCESSIVE LOOSENESS, WORN OR CHIPPED GEARS, MISALIGNMENT, POSITIVE ACTION.	23	INSPECT VARIABLE CAPACITORS FOR DIRT, MOISTURE, MISALIGNMENT OF PLATES, AND LOOSE MOUNTINGS.	
6	CHECK FOR NORMAL OPERATION.	24	INSPECT RESISTORS, BUSHINGS, AND INSULATORS, FOR CRACKS, CHIPPING, BLISTERING, DISCOLORATION AND MOISTURE.	
①	CLEAN AND TIGHTEN EXTERIOR OF COMPONENTS AND CASES, RACK MOUNTS, SHOCK MOUNTS, ANTENNA MOUNTS, COAXIAL TRANSMISSION LINES, WAVE GUIDES, AND CABLE CONNECTIONS.	25	INSPECT TERMINALS OF LARGE FIXED CAPACITORS AND RESISTORS FOR CORROSION, DIRT AND LOOSE CONTACTS.	
⑧	INSPECT CASES, MOUNTINGS, ANTENNAS, TOWERS, AND EXPOSED METAL SURFACES, FOR RUST, CORROSION, AND MOISTURE.	26	CLEAN AND TIGHTEN SWITCHES, TERMINAL BLOCKS, BLOWERS, RELAY CASES, AND INTERIORS OF CHASSIS AND CABINETS NOT READILY ACCESSIBLE.	
9	INSPECT CORD, CABLE, WIRE, AND SHOCK MOUNTS FOR CUTS, BREAKS, FRAYING, DETERIORATION, KINKS, AND STRAIN.	27	INSPECT TERMINAL BLOCKS FOR LOOSE CONNECTIONS, CRACKS AND BREAKS.	
⑩	INSPECT ANTENNA FOR ECCENTRICITIES, CORROSION, LOOSE FIT, DAMAGED INSULATORS AND REFLECTORS.	28	CHECK SETTINGS OF ADJUSTABLE RELAYS.	
11	INSPECT CANVAS ITEMS, LEATHER, AND CABLING FOR MILDEW, TEARS, AND FRAYING.	29	LUBRICATE EQUIPMENT IN ACCORDANCE WITH APPLICABLE DEPARTMENT OF THE ARMY LUBRICATION ORDER.	
12	INSPECT FOR LOOSENESS OF ACCESSIBLE ITEMS: SWITCHES, KNOBS, JACKS, CONNECTORS, ELECTRICAL TRANSFORMERS, POWERSTATS, RELAYS, SELSYNS, MOTORS, BLOWERS, CAPACITORS, GENERATORS, AND PILOT LIGHT ASSEMBLIES.	30	INSPECT GENERATORS, AMPLIDYNES, DYNAMOTORS, FOR BRUSH WEAR, SPRING TENSION, ARCING, AND FITTING OF COMMUTATOR.	
13	INSPECT STORAGE BATTERIES FOR DIRT, LOOSE TERMINALS, ELECTROLYTE LEVEL AND SPECIFIC GRAVITY, AND DAMAGED CASES.	31	CLEAN AND TIGHTEN CONNECTIONS AND MOUNTINGS FOR TRANSFORMERS, CHOKES, POTENTIOMETERS, AND RHEOSTATS.	
14	CLEAN AIR FILTERS, BRASS NAME PLATES, DIAL AND METER WINDOWS, JEWEL ASSEMBLIES.	32	INSPECT TRANSFORMERS, CHOKES, POTENTIOMETERS, AND RHEOSTATS FOR OVERHEATING AND OIL-LEAKAGE.	
15	INSPECT METERS FOR DAMAGED GLASS AND CASES.	33	BEFORE SHIPPING OR STORING - REMOVE BATTERIES.	
16	INSPECT SHELTERS AND COVERS FOR ADEQUACY OF WEATHERPROOFING.	34	INSPECT CATHODE RAY TUBES FOR BURNY SCREEN SPOTS.	
⑪	CHECK ANTENNA GUY WIRES FOR LOOSENESS AND PROPER TENSION.	35	INSPECT BATTERIES FOR SHORTS AND DEAD CELLS.	
18	CHECK TERMINAL BOX COVERS FOR CRACKS, LEAKS, DAMAGED GASKETS, DIRT AND GREASE.	36	INSPECT FOR LEAKING WATERPROOF GASKETS, WORN OR LOOSE PARTS.	
		37	MOISTURE AND FUNGIPROOF.	
38	IF DEFICIENCIES NOTED ARE NOT CORRECTED DURING INSPECTION, INDICATE ACTION TAKEN FOR CORRECTION.			

DA AGO FORM 11-239
1 MAY 51

REPLACES DA AGO FORM 439, 1 DEC 50, WHICH IS OBSOLETE.

4-10-4482-1

TM 2615A-23

Figure 23. DA AGO Form, 11-239, with applicable items circled.

21. Detailed Instructions

a. *General.* The following preventive maintenance operations should be performed by organizational personnel at monthly intervals, or more frequently if considered necessary by the local commander.

b. *Supporting Posts, Braces, Splice Plates, Pedestal Base.*

- (1) Inspect all parts for rust and corrosion. Clean all rusted or corroded parts. Remove rust from tower surfaces with sandpaper and touch up the surface with 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.

c. *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 the 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 (par. 14). Adjust the turnbuckles and determine whether a rust preventive material (par. 20) must be applied.

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CHAPTER 4
REPAIR INSTRUCTIONS

22. Replacement of Parts

a. General. To replace defective components of a completely erected and installed antenna support, lower the support to the ground. Damage to an erected antenna support is uncommon and ordinarily results from hurricane winds or from 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 (pars. 11 through 16, and 24 and TM 112617).
- (2) Loosen and remove the nuts and bolts that secure the defective component in place. When replacing defective components, replace the uppermost ones first and work down. The top end of each piece is the first to be connected to the bolts that hold more than one piece. Use a drift pin as a temporary bolt and as a means of alining 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 3/4-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 it to the anchor.
- (3) Remove the defective guy and replace the insulator.

(a) If an insulator in the 5/8-inch guy WR1 is to be replaced, remove the wire rope clamps from both sides

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of the insulator. Examine the clamps and replace them if necessary. 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.
 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 the wire, and secure it with three wire rope clips.
- (b) Replace a defective insulator in the 5/16-inch guy assembly WR2 in the same manner as described in (a) above for guy assembly WR1.
- (4) Reinstall the guy (par. 14d) and remove the temporary guy. Be sure to obtain proper tension on the guy (par. 14f).

23. Painting

- a. Paint antenna support components when they begin to rust or show signs of corrosion.
- b. Remove all rust or corrosion from channels, braces, nuts, bolts, attachment plates, etc. Use a steel wire brush; obtain a bright, smooth finish.
- c. Wipe clean with a clean, dry cloth.
- d. Paint with olive drab paint; use brush, sash tool, Signal Corps stock No. 6Z1566-2. Use a high-grade outside paint for metal.

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CHAPTER 5
SHIPMENT AND LIMITED STORAGE AND
DEMOLITION TO PREVENT ENEMY USE

24. Dismantling and Repacking Equipment

To dismantle the antenna support, reverse the procedures described in paragraphs 11 through 16 for installation, assembly, and erection. Repack all parts and components in boxes and bundles in which they originally were shipped.

- a. Install the gin pole, temporary guys, screw anchors, and hoisting cable.
- b. Station men at the positions listed in paragraph 14e(1). When lowering the support, observe the same safety precautions observed during the erection procedure. Slacken off on the hoisting tackle slowly by snubbing on the permanent anchor for WR1; at the same time apply tension to guys WR2.
- c. Disassemble the various sections, and disassemble each section piece-by-piece.
- d. Dig up the anchors.
- e. Sort the tower parts and consolidate them as indicated in paragraph 7.
- f. Be sure that the components and the parts are placed in the packing boxes and the bundles as indicated in paragraph 7.
- g. Nail and strap the boxes; strap the bundles (fig. 3).

25. Methods of Demolition

- a. *Smash.* Use sledges, axes, handaxes, pickaxes, hammers, crowbars, heavy tools.
- b. *Cut.* Use axes, handaxes, machetes.
- c. *Burn.* Use gasoline, kerosene, oil, flame throwers, incendiary grenades.
- d. *Explode.* Use firearms, grenades, TNT.

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e. *Dispose.* Bury in slit trenches, fox holes, other holes. Throw in streams. Scatter.

f. *Other.* Use anything immediately available for destruction of this equipment.

26. Destruction of Components

When ordered by your commander, destroy all equipment to prevent its being used or salvaged by the enemy.

a. Smash (par. 25a) all guy insulators, supporting posts, braces, channels, anchors, shackles, turnbuckles, plates.

b. Cut (par. 25b) guys.

c. Burn (par. 25c) technical manuals.

d. Bend turnbuckles, plates, clips.

e. Bury or scatter (par. 25e) all that remains.

f. Destroy everything.

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APPENDIX I
REFERENCES

Note. For availability of items listed, check SR 310-20-3, SR 310-20-4, and SR 310-20-5. Check Department of the Army Supply Catalog SIG 1 for Signal Corps Supply Catalogs.

1. Army Regulations

AR 380-5	Military Security (Safeguarding Security Information) .
AR 750-5	Maintenance of Supplies and Equipment (Maintenance Responsibilities and Shop Operation).

2. Supply Publications

SB 11-47	Preparation and Submission of Requisitions for Signal Corps Supplies.
SB 11-76	Signal Corps Kit and Materials for Moisture - and Fungi-Resistant Treatment.
SB 11-100	Serviceability Standards for Signal Equipment in Hands of Troops.

3. Painting, Preserving, Maintenance, and Lubrication

TB SIG 13	Moistureproofing and Fungiproofing Signal Corps Equipment.
TB SIG 69	Lubrication of Ground Signal Equipment.
TM 9-2851	Painting Instructions for Field Use.

4. Other Publications

FM 24-5	Signal Communications.
FM 24-18	Field Radio Techniques.
FM 24-20	Field Wire Technique.
FM 72-20	Jungle Warfare.
SR 310-20-3	Index of Training Publications.

SR 310-20-4

SR 310-20-5

SR 700-45-5

SR 745-45-5

NAV DEPT

SERIAL

85-P00

AFR 71-4

TB SIG 4

TB SIG 25

TB SIG 54

TB SIG 66

TB SIG 72

TB SIG 75

TB SIG 123

TB SIG 178

TB SIG 219

TB SIG 223

TM 11-310

TM 11-314

TM 11-369

TM 11-453

TM 11-455

TM 11-462

TM 11-466

TM 11-483

Index of Technical Manuals, Technical Regulations, Technical Bulletins, Supply, Bulletins, Lubrication Orders, Modification Work Orders, Tables of Organization and Equipment, Reduction Tables, Tables of Allowances, Tables of Organization, and Tables of Equipment.

Index of Administrative Publications.

Unsatisfactory Equipment Report (Reports Control Symbol CSGLD-247).

Report of Damaged or Improper Shipment (Reports Control Symbols CSGLD-66 (Army), SandA-70-6 (Navy), and AF-MC-U2 (Air Force)).

Methods for Improving the Effectiveness of Jungle Radio Communication.

Preventive Maintenance of Power Cords.

Working through Jamming with Frequency Modulated Radio Sets.

Winter Maintenance of Signal Equipment.

Tropical Maintenance of Ground Signal Equipment.

Desert Maintenance of Ground Signal Equipment.

Preventive Maintenance Practices for Ground Signal Equipment.

Preventive Maintenance Guide for Radio Communication Equipment.

Operation of Signal Equipment at Low Temperatures.

Field Expedients for Wire and Radio.

Schematic Diagrams for Maintenance of Ground Radio Communication Sets.

Antennas and Antenna Systems.

Spiral-Four Cable.

Shop Work.

Radio Fundamentals.

Signal Corps Tactical Communication Reference Data.

Radar Electronic Fundamentals.

Suppression of Radio Noises.

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TM 11-486	Electrical Communication Systems Engineering.
TM 11-496	Training Text and Applicatory Exercises for Amplitude-Modulated Radio Sets.
TM 11-660	Introduction to Electronics.
TM 11-661	Electrical Fundamentals (Direct Current).
TM 11-676	Grounding Procedure and Protective Devices.
TM 11-681	Electrical Fundamentals (Alternating Current).
TM 11-2261	Telephone Outside Plant Engineering.
TM 11-2262	Open Wire Pole Line Construction and Maintenance.
TM 11-2263	Lead-Covered Cable Construction and Maintenance.
TM 11-2614	Erection Kit MX-746/FR.
TM 11-2617	Antenna Kit for Rhombic Transmitting Antenna (Drawing ES-E-368-D).
TM 11-4000	Trouble Shooting and Repair of Radio Equipment.

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APPENDIX II

IDENTIFICATION TABLE OF PARTS

Note. The following is an identification table of parts for Antenna Support AB-105C/FRC (Sig C stock No. 2A248-105A). The fact that a part is listed in this table is not sufficient basis for requisitioning the item. Requisitions must cite an authorized basis, such as a specific T/O&E, T/A, SIG 7-8-10, list of allowances of expendable material, or another authorized supply basis. The Department of the Army Supply Catalog applicable to the equipment covered in this manual is SIG 7 & 8 AB-105/FRC. For an index of available supply catalogs in the Signal portion of the Department of the Army Supply Catalog, see the latest issue of SIG 1.

Fig. No. & ref symbol	Name of part and description	Function of part	Signal Corps stock No.
Fig. 2 (33)	ANCHOR, guy: four-way expanding; iron, rustproof finish.	Used as a holding device in the ground for the 5/8-inch back guy.	5B164-1
Fig. 2 (33)	ANCHOR, guy: two-way expanding; iron, rustproof finish.	Used as a holding device in the ground for the 5/16-inch side guy.	5B100
G14-A	BASE, antenna support: steel, hot-dipped galv -----	Provides attachment to base -----	2A326.1-6
	BASE, antenna support: steel, hot-dipped galv -----	Mounts antenna support-----	2A3448/2
Fig. 2 (37)	BOLT, hook: steel, hot-dipped galv; 3/4"-10; 1' 6 3/4" 1g--	Fastens base to foundation -----	6L412-18.7
Fig. 2 (37)	BOLT, machine: steel, galv; 5/8"-11; 6 3/4" 1g-----	Joins G14-A, G15-A, and G16-A -----	6L610-6.7
Fig. 2 (37)	BOLT, machine: steel, galv; 3/8"-16; 1" 1g-----	Secures structural members in place -----	5B1506-1
Fig. 2 (37)	BOLT, machine: steel, galv; 3/8"-16; 1 1/4" 1g -----	Secures structural members in place -----	5B1506-1.2
MO TA1	BOLT, eye: 1"-8 mach thd; 8 7/8" 1g under eye-----	Used in conjunction with turnbuckle for ----- four-way expansion anchor to secure and tighten 5/8-inch back guy.	5B1316-8

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Fig. 2 (37)	BOLT, machine: steel, galv; 3/8"-16; 1 1/2" 1g-----	Secures structural members in place -----	6L606-1.5S
Fig. 2 (37)	BOLT, machine: steel, galv; 1/2"-16; 1 1/2" 1g-----	Secures guy and antenna attachment plates ----- on section C6; also used for assembly of pedestal base.	6L608-1.5S
Fig. 2 (37)	BOLT, machine: steel, galv; 3/4"-10; 2" 1g-----	Secures bottom assembly (G16-A) to ped ----- estal base.	5B1512-2
2-00	BRACE, tower: corner post for antenna support base; --- 4' 5 3/4" 1g.	Acts as pedestal corner post -----	2A377.1-44
3-00	BRACE, tower: horizontal pedestal base (inside); 3' ---- 5 3/4" 1g.	Acts as horizontal brace in pedestal-----	2A377.1-45
4-00	BRACE, tower: horizontal pedestal base (outside) ; 3' ---- 10" 1g.	Acts as horizontal brace in pedestal-----	2A377.1-46
G8-A	BRACE, tower: tower strut; 2' 3 1/2" 1g-----	Acts as diagonal strut -----	2A377.1-47
G9-A	BRACE, tower: tower strut; 2' 3 1/8" 1g-----	Acts as diagonal strut -----	2A377.1-48
G10-A	BRACE, tower: tower strut; 1' 11" 1g-----	Acts as horizontal brace and step-----	2A377.1-33
G18	BRACE, tower: horizontal brace; 1' 11" 1g-----	Acts as horizontal brace in section C5-----	2A377.1-23
G19	BRACE, tower: horizontal brace; 1' 11" 1g-----	Acts as horizontal brace in section C5-----	2A377.1-22
G20	BRACE, tower: horizontal brace; 1' 11" 1g-----	Acts as horizontal brace in section C5-----	2A377.1-49
G22	BRACE, tower: horizontal brace; 1' 11" 1g-----	Acts as horizontal brace -----	2A377.1-32
G23	BRACE, tower: horizontal brace; 1' 11" 1g-----	Acts as horizontal brace -----	2A377.1-19
G24	BRACE, tower: horizontal brace; 1' 11" 1g-----	Acts as horizontal brace -----	2A377.1-20
G25	BRACE, tower: diagonal brace; 2' 6 3/8 " 1g-----	Acts as diagonal brace-----	2A377.1-18
G27	BRACE, tower: horizontal brace; 1' 11" 1g-----	Acts as horizontal brace -----	2A377.1-21
G28	BRACE, tower: horizontal brace; 1' 11" 1g-----	Acts as horizontal brace -----	2A377.1-25
G29	BRACE, tower: horizontal brace; 1' 11" 1g-----	Acts as horizontal brace -----	2A377.1-30
G44-A	BRACE, tower: diagonal brace; 2' 3 1/8" 1g-----	Acts as diagonal brace in section C6-----	2A377.1-50
G16-A	BRACKET: U-shaped; 6" 1g x 5" wd x 6 1/2" h -----	Mounts base swivel to foundation-----	2Z1239.317
G17-B	BRACKET: steel, galv; 2' 1g-----	Connects bottom assembly G14-A to sec- tion C1 and top plate G48 to section C7.	2Z1239.318
	BRUSH, painting: flat, 8-1/16" 1g x 2" wd x 1/2" d-----	Used for applying black paint-----	38-5551.500-200

Fig. No. & ref symbol	Name of part and description	Function of part	Signal Corps stock No.
Fig. 21	CLAMP: ground rod; drawn broze; 1" 1g x 33/64" wd (in- side) x :20/32" h (inside).	Attaches ground wire to ground rod -----	5B3361C
Fig. 20	CLAMP: wire rope bolted; steel, galv; 3/8" dia U-bolt ----- w/base; for 5/16" dia wire rope (WR2).	Secures free end of guy in place -----	2A478.3-9
Fig. 20	CLAMP: wire rope; steel, galv; 9/16" dia U-bolt w/base; -- for 5/8" dia wire rope (WR1).	Secures free end of guy in place -----	5B4024
WR1	GUY: wire rope, zinc-coated; 101' 5" 1g; 5/8" dia-----	Guys antenna support-----	2A1344-70
WR2	GUY: wire rope, zinc-coated; 100' 6" 1g; 5/16" dia-----	Guys antenna support-----	2A1344-69
	INSULATOR, strain: rd; brown glaze porcelain; 3 1/4" 1g-	Used with guy WR2-----	3G360-7
	INSULATOR, strain: rd; brown glaze porcelain; 5 1/4" 1g-	Used with guy WR1-----	3G360-8
	PAINT: black; 1 pint----- and before burying in ground.	Used to paint pedestal base after assembly -----	6G1409
	PIN, cotter: steel, black finish; 1/8" dia x 1" 1g -----	Secures shoulder bolts in bottom assem- ----- blies G14-A and G16-A.	6L974-6-64S
1-00	PLATE, antenna mast: steel, pyramid shape; 95/8" 1g x -- 9 5/8" wd x 5 1/8" d.	Used as the pedestal cap -----	2A3393A.5-1
G21	PLATE, antenna mast: rectangular; 1' 11 3/4" 1g x 2Y4" - wd x 3/16" thk.	Used for antenna attachment -----	2A2822-12.3
G30	PLATE, antenna mast: rectangular; 1' 9 3/4" 1g x 3" wd -- x 1/4" thk.	Used for antenna attachment -----	2A2822-12.2
G31	PLATE, antenna mast: rectangular; 4 1/4" 1g x 3" wd x --- 1/4" thk. -----	Used to reinforce antenna attachment ----- plate G30.	2A2822-12.4
G15-A	PLATE, bottom: double U-shaped; 4 1/2" 1g x 4 1/2" wd x 5 1/8" h.	Two-way swivel plate used for connecting bottom assemblies G14-A and G16-A.	2A2821.1-3
G45	PLATE, filler: irregular shape; 6 25/34" 1g x 4" wd x 1/2" thk	Used between guy attachment plates G37 and G38.	2A2821.2
G32	PLATE, gusset: triangular shape; 9 1/8" 1g x 6" wd x ----- 3/16" thk.	Used with horizontal braces G27 and G28-----	2A2821.3-1

G36	PLATE, gusset: 9 3/4" 1g x 8 1/8" wd x 3/16" thk-----	Reinforces diagonal brace -----	2A2821.3
G37	PLATE, guy: bent rectangular shape; 18 3/4" 1g x 4" wd x 3/16" thk.	Used as attachment plate for guy WR1 -----	2A2822.11-2
G38	PLATE, guy: bent rectangular shape; 18 3/4" 1g x 4" wd - x 3/16" thk.	Used as attachment plate for guy WR1 -----	2A2822.11-3
G46	PLATE, guy: irregular shape; 8 1/8" 1g x 4 1/4" wd x 3/16" thk	Used as attachment plate for guy WR2-----	2A2822.11-1
G47	PLATE, guy: irregular shape; 8 1/8" 1g x 4 1/4" wd x 3/16" thk	Used as attachment plate for guy WR2-----	2A2822.11
G47	PLATE, reinforcing: V-shaped; 12" 1g each leg of V, ----- 1 15/16" wd, .134" thk.	Reinforces and connects supporting posts -----	2A2822-14
G48	PLATE, top: triangular; each leg of triangle 1' 9" 1g, ----- 1/4" thk.	Used as base for beacon obstruction light ----- and for rhombic antenna attachment.	2Z7090.218
G1-A	POST, supporting: V-shaped; 2' 11 3/4" 1g, each leg of angle 2" wd, .134" thk.	Vertical post for section C1 -----	2Z7259-218
G2-A	POST, supporting: V-shaped; 2' 5 3/4" 1g, each leg of V 2" wd, .134" thk.	Vertical post for section C2 -----	2Z7259-219
G3-A	POST, supporting: V-shaped; 5' 3/4" 1g, each leg of V --- 2" wd, .134" thk.	Vertical post for section C3 -----	2Z7259-220
G4-A	POST, supporting: V-shaped; 9' 11 3/4" 1g, each leg of angle 2" wd, .134" thk.	Vertical post for section C4 and section C5 -----	2Z7259-221
G5-A	POST, supporting: V-shaped; 5' 11 3/4" 1g, each leg of V 2" wd, .134" thk.	Vertical post for section C6 -----	2Z7259-222
G6-A	POST, supporting: V-shaped; 5' 11 3/4" 1g, each leg of V 2" wd, .134" thk.	Vertical post for section C7 -----	2Z7259-223
TA1	ROD ASSEMBLY, anchor: steel, galv; 1" dia x 10' 10" 1g-	Connects turnbuckle (and guy) to four- ----- way expansion anchor.	2A3186.3-2
TA2	ROD ASSEMBLY, anchor: steel, galv; 1/2" dia x 7' 11" 1g--	Connects 5/16-inch guy to two-way expan- ----- sion anchor; also used to tighten guy.	5B9600
Fig. 2 (38)	ROD, ground: copper-coated steel; 1/2" dia x 8' 1g -----	Ground rod for ground antenna support -----	2A3189.1
	SHACKLE, anchor: U-shaped; for 5/8" dia wire rope -----	Secures 5/8-inch guy to guy attachment ----- plate.	5B15404-1

Fig. No. & ref symbol	Name of part and description	Function of part	Signal Corps stock No.
MO TA-1 Fig. 2 (37) Fig. 2 (37) Fig. 2 (37) Fig. 2 (37) Fig. 2 (37)	SHACKLE, anchor: U-shaped; for 5/16" dia wire rope-----	Secures 5/16-inch guy to guy attachment ----- plate.	5B15406
	TERMINAL SET, lug: bare copper -----	Attaches ground wire to antenna support-- -----	3Z12060-13.8
	THIMBLE, guy: for 5/8" dia cable; 3 7/16" 1g x 2 3/8" wd; 2 1/4" 1g x 1 1/2" wd inside.	Protects guy assembly WR1 against chafing.	5B18044
	THIMBLE, guy: for 5/16" dia cable; 2 1/16" 1g x 1 1/4" wd; 1 1/2" 1g x 13/16" wd inside.	Protects guy assembly WR2 against chafing.	5B18043
	TURNBUCKLE: 1"-8 thd ea end; one rh, one lh; 12" take-up.	Tightens 5/8-inch guy and connects guy to anchor rod.	5B19016-8
	WASHER, flat: rd; 1" OD, .4375" ID, .078" thk; for ----- 3/8" bolt.	Hardware -----	6L58037-20
	WASHER, flat: rd; 2" OD, .8125" ID, .5625" thk; for ----- 3/4" bolt.	Hardware-----	6L71013-4
	WASHER, lock: rd; 3/4" OD, 1/2" ID, .115" thk; for 3/8" --- bolt.	Hardware-----	6L71006-7C
	WASHER, lock: rd; 15/16" OD, 1/2" ID, .151" thk; for 1/2" bolt.	Hardware -----	6L71008-18
	WASHER, lock: rd; 1 5/16" OD, 13/16" ID, .226" thk; for 3/4", bolt.	Hardware-----	6L71012-13
WIRE, electrical: bare, stranded; soft copper-----	Used in ground system as connection be----- tween antenna support and ground rod.	1A804.8	
WIRE, mechanical: galv iron; #14 AWG (.064" dia -----	Used as seizing wire -----	1A814.14	

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