Sept. 22, 1964 R. L. CARREL ETAL 3,150,376

MULTI-BAND LOG PERIODIC ANTENNA

Filed April 3, 1964 2 Sheets-Sheet 1

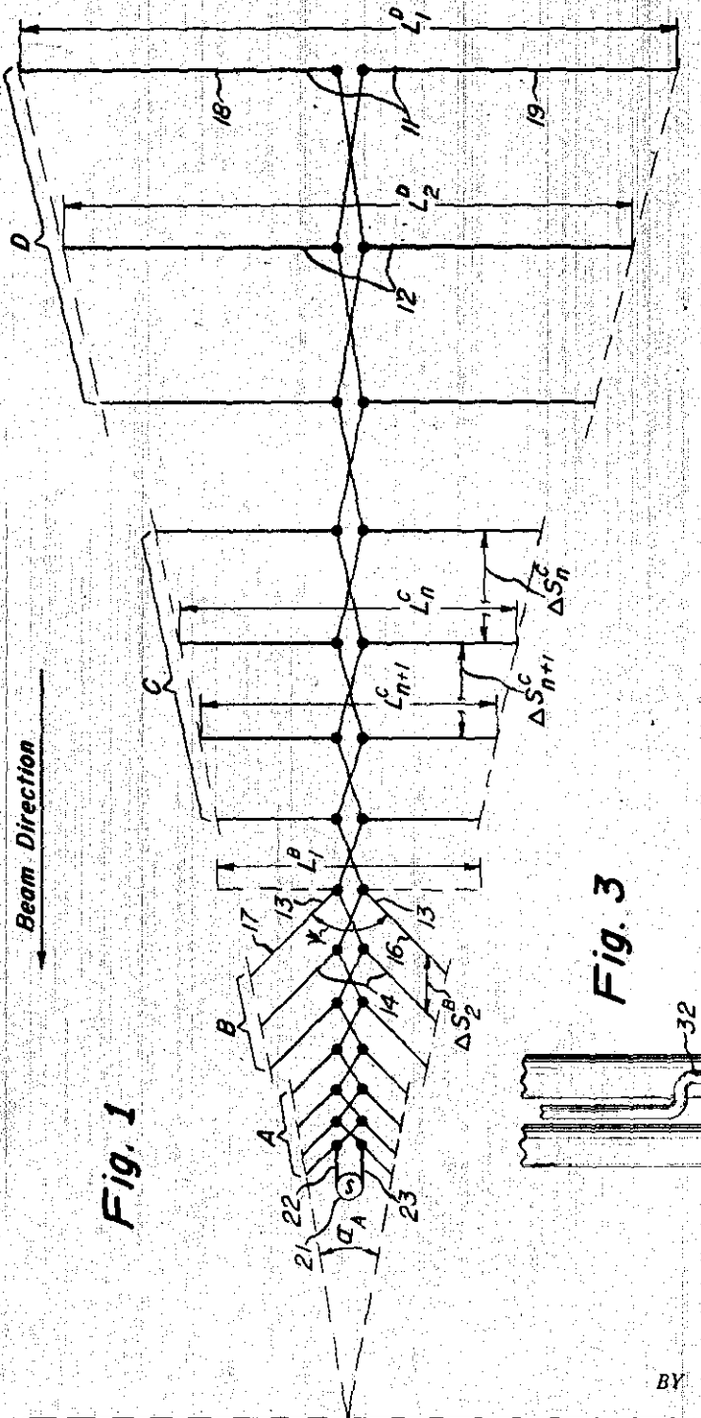


Fig. 1

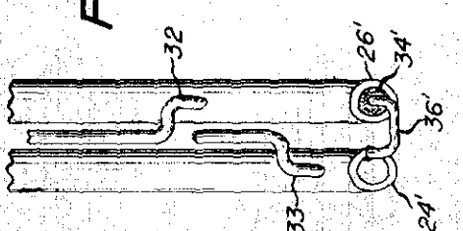


Fig. 3

INVENTORS:
Robert L. Carrel
Paul E. Mayes

BY

Merriam, Smith & Marshall
ATTORNEYS

Sept. 22, 1964 R. L. CARREL ETAL 3,150,376

MULTI-BAND LOG PERIODIC ANTENNA

Filed April 3, 1964 2 Sheets-Sheet 2

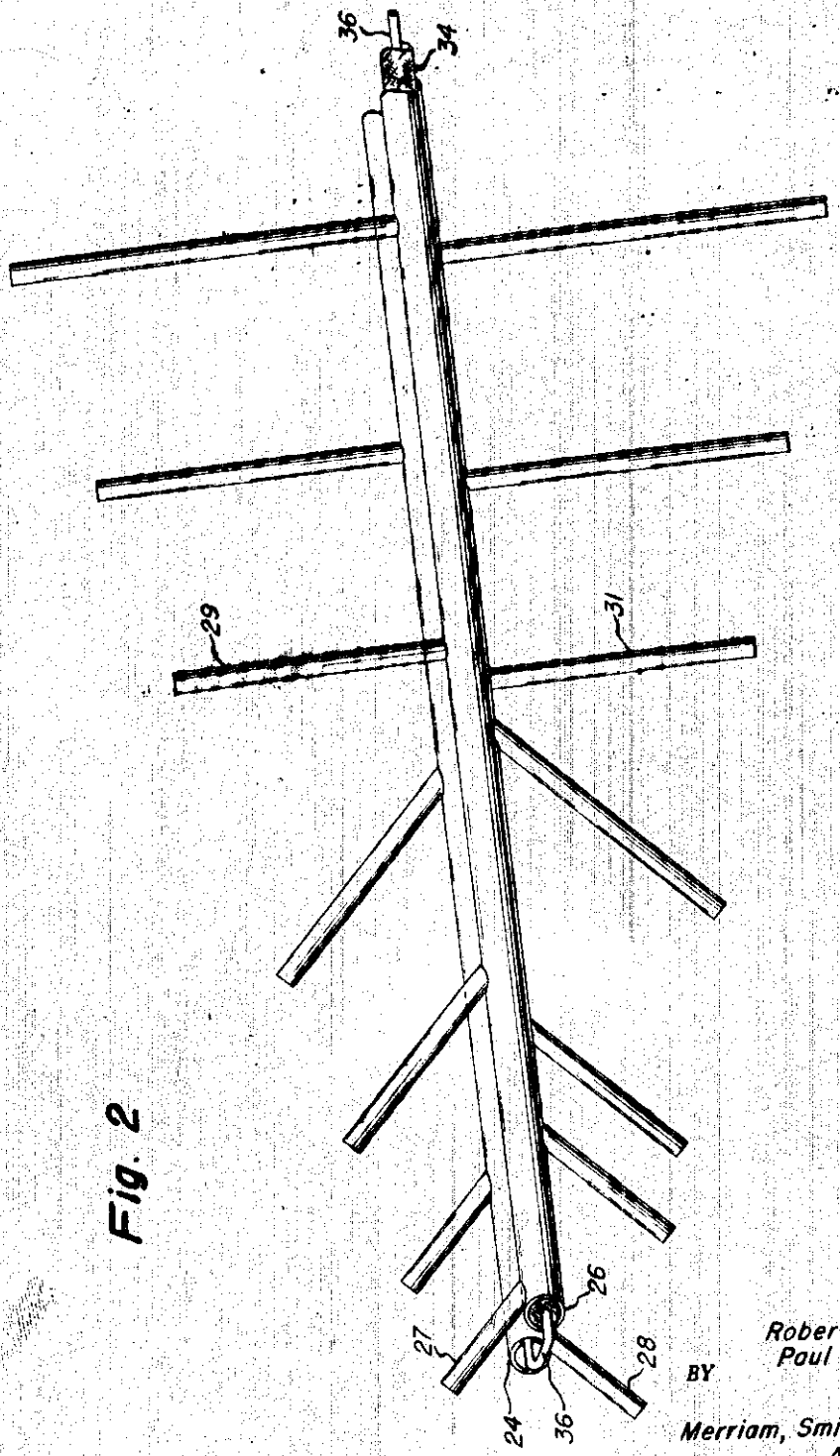


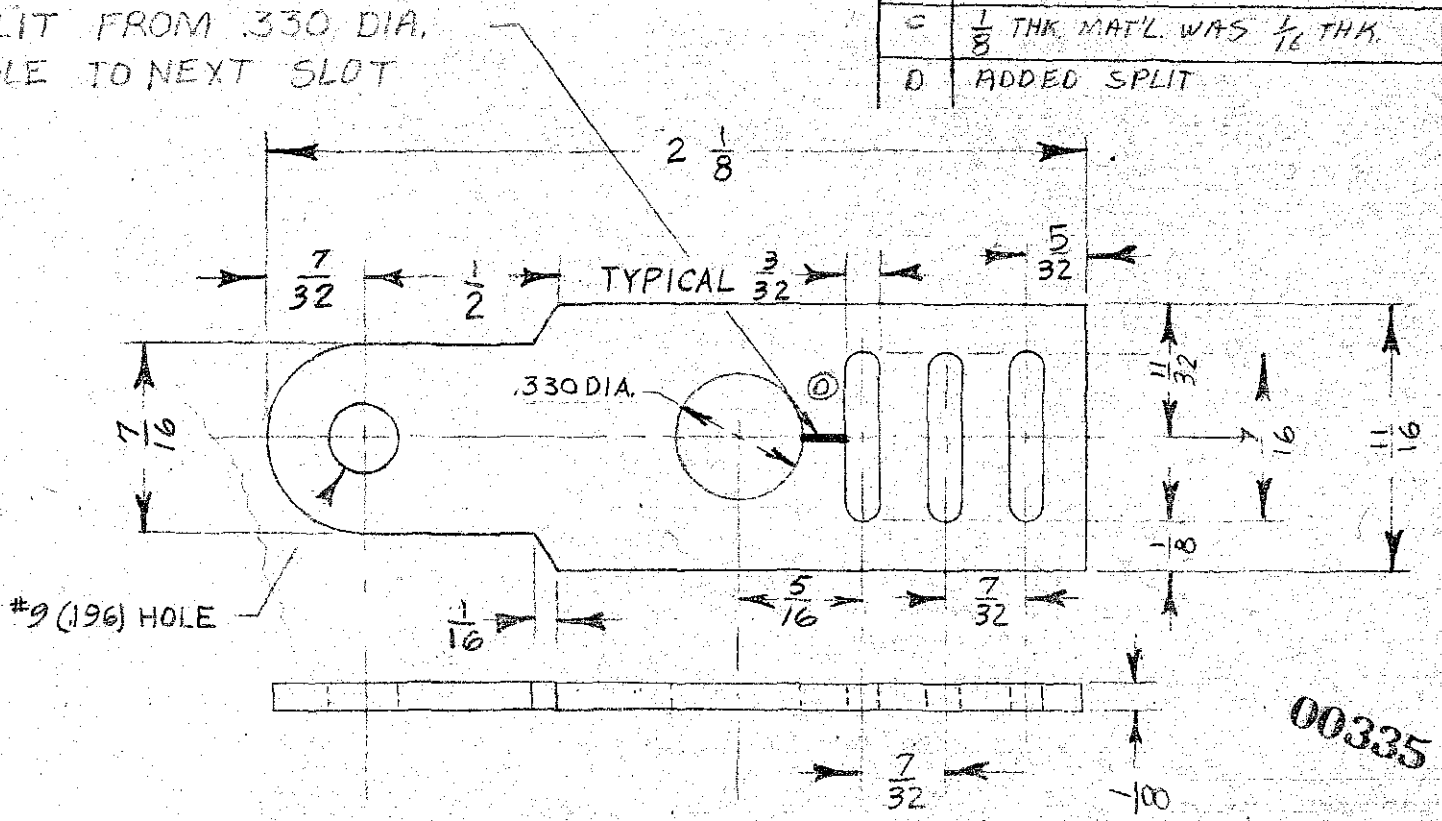
Fig. 2

INVENTORS:
Robert L. Carrel
Paul E. Mayes

BY

Merriam, Smith & Marshall
ATTORNEYS

REV.	DESCRIPTION	DATE	APP.
A	FINISH WAS NATURAL	1-23-63	
B	ADDED .330 DIA. HOLE	11-6-63	
C	$\frac{1}{8}$ THK. MAT'L. WAS $\frac{1}{16}$ THK.		
D	ADDED SPLIT	5-16-11	



ITEM NO.	NO. REQ'D	PART NO.	DESCRIPTION	MATERIAL	SPECIFICATION	NOTE

SCALE: 2 X SIZE

NO. REQ'D PER ASSEMBLY: ~

TOLERANCES UNLESS OTHERWISE SPECIFIED
FRACTIONAL ± 1/64
DECIMAL ± .005
ANGULAR ± 1/2°

MATERIAL: POLYETHYLENE

HEAT TREAT: ~

FINISH: BLACK

TWIN LEAD STRAIN RELIEF
ZIP ANT.

DRAWN	CHECKED	ENG. APP.	PROD. APP.
G. SMAGALA 7-18-62	7-18-62		

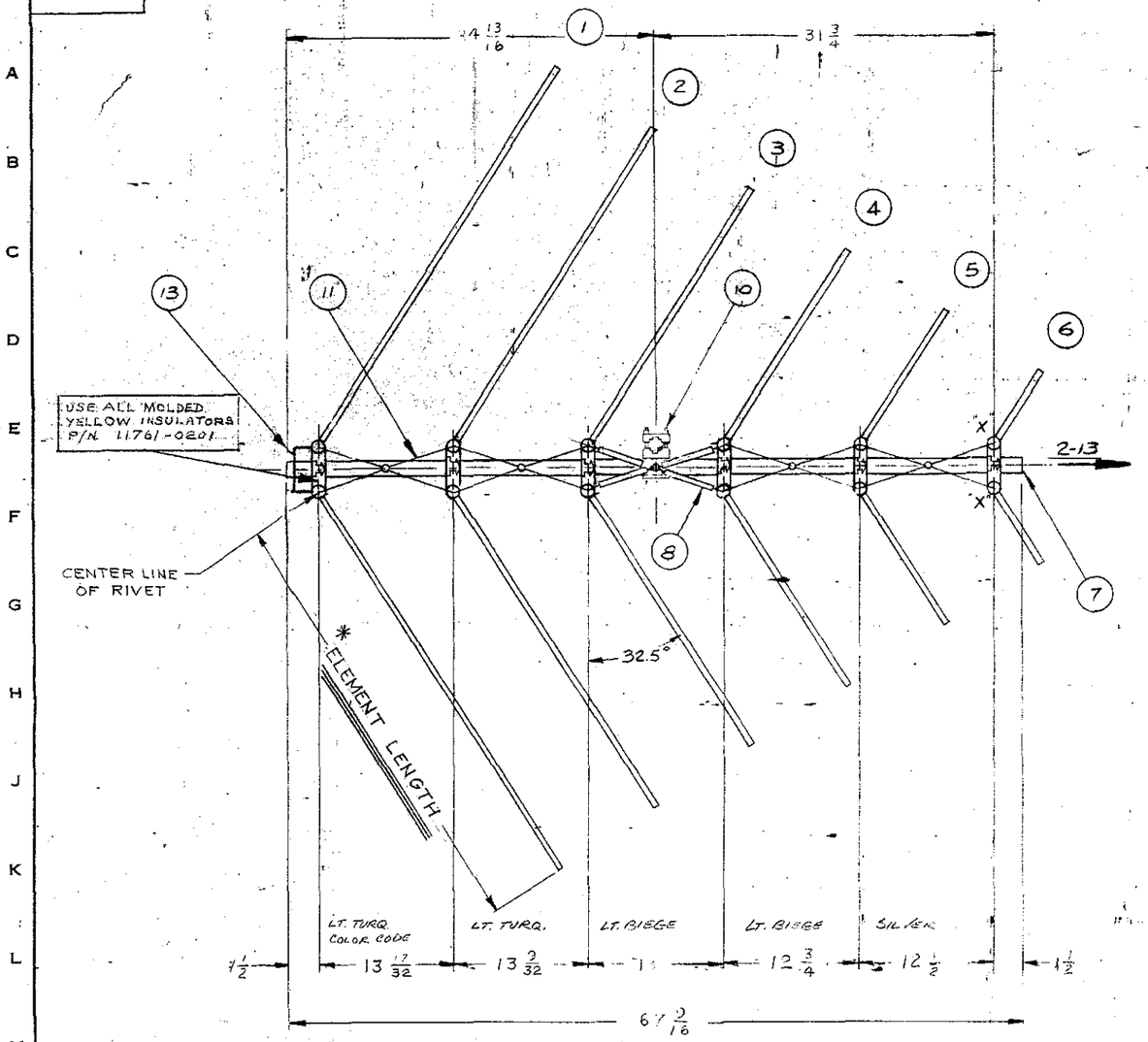
JFD ELECTRONICS CORP.
BROOKLYN, N.Y.

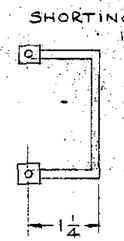
DATE OF PRINTING
JAN 2 0 1967
NEXT ASSEMBLY

DRAWING NO.
11881-0101

K+E ALBANENE 1966 ® TRACING PAPER 59219

REV.	DESCRIPTION	DATE	APP.
A	1½ DIM WAS 1", 34 DIM WAS 33 3/4, 67½ WAS 67.	4-16-63	
B	EL "2" LENGTH 46 5/8 WAS 46 3/16 EL "3" LENGTH 41 3/4 WAS 43	4-16-63	
C	"U" BOLT ASS'Y WAS 30398 CHANGED TO 30398-1; THE LETTER "D" WILL BE MARKED ON LABELS	5-2-63	
D	CROSSARM 68 WAS 67½	5-7-63	
E	CHANGED HARNESS TO SOLID WIRE .155 DIA. THE LETTER "H" SHALL BE STAMPED ON ALL LABLES	3-26-64	
F	MODIFIED SPACINGS. SEE CROSS ARM PRINT.	1-20-65	





NOTICE
THIS PRINT SUPERCEDES ALL ISSUES TO DATE
JFD SOUTHERN

* ELEMENT LENGTH MEASURED FROM CENTER OF RIVET TO END OF ELEMENT.

00334

NOTE:
1-TAKE OFF AT BOTTOM OF INSULATOR "XX"

1 CARTON SIZE IS 92¼ LG.

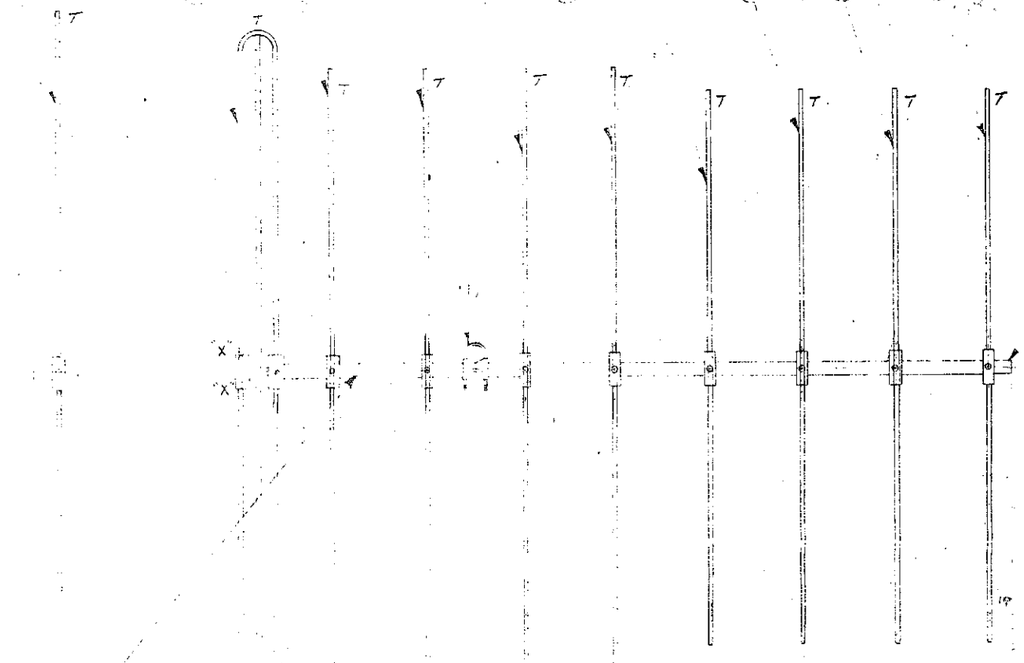
ITEM NO	NO. REQ'D	PART NO.	DESCRIPTION	MATERIAL	SPECIFICATION	NOTE
13	1	11896-4	SHORTING STUB 1¼ LG.			
11	4		HARNESS ASS'Y			
10	1	30398-1	DOUBLE U-BOLT ASS'Y			
8	1		HARNESS ASS'Y			
7	1	12036	CROSSARM SQ.			
1 TO 6	12	11833-	ELEMENT	-		

SCALE: NONE	TOLERANCES UNLESS OTHERWISE SPECIFIED FRACTIONAL ± 1/64 DECIMAL ± .005 ANGULAR ± 1/2°	ZENITH 973-2 ASSEMBLY DWG. (4PV6L)	DATE OF PRINTING NOV 7 1966
NO. REQ'D PER ASSEMBLY: ~			NEXT ASSEMBLY
MATERIAL ~		DRAWN M.W. 10-10-62 / CHECKED 10-12-62 / ENG. APP. / PROD. APP	
HEAT TREAT ~			DRAWING NO.
FINISH: GOLD ALODINE		JFD ELECTRONICS CORP. BROOKLYN, N.Y.	50451

K-E ALBANENE 1956 ® TRADE MARK

IBM 52610

REV.	DESCRIPTION	DATE	APP.
A	A WAS 11, B-J WAS 6 1/2 L1 WAS 30 1/4, L2 WAS 28 1/2 L3-L6 WAS 24 1/2, L10 WAS 23 3/4 88 7/8 WAS 55, 35 5/8 WAS 34 1/4	6-2-61	
B	L-2- WAS 54 5/16, L7 IS NOW 55 3/16.	6-6-60	
C	MODIFIED EL. CUT SIZE & SPACING	5-9-62	
D	EL. 3 WAS ON TOP.	6-28-62	
E	CHANGED BACK TO HI-BAND BKTS	8-7-62	
F	ADDED STRAIN RELIEF P/N 11881 + ILLUS	9-18-62	
G	CHANGED BACK TO HI-BAND BKT	12-12-62	
H	CHANGED ELEMENTS 3-9 TO ONE PIECE CONST.	5/4/64 RA	
I	OLD NO. 50171 CHANGED TO I.B.M. NO. 0120140	6-15-60	



NOTE:
STRAIN RELIEF, P/N 11881-(6CT), RIVETED TO UNDERSIDE OF CROSSARM AS SHOWN.

00336

NOTE
ALL ELEMENTS TO BE CONSTRUCTED OF 3/8 DIA. BUTTSEAM ALUM. TUBING
FOR MODEL 10Z1013 SUBSTITUTE 1" RD. CROSSARM
PRINT (50171) IBM 53691
X-X DENOTES TAKE-OFF POINT.

ITEM NO.	NO. REQD	PART NO.	DESCRIPTION	MATERIAL	SPECIFICATION	NOTE
1 & 10	1	30004	HI-BAND REFLECTOR SPLIT ASS'Y — ONE PC CONST.			
12	1	10950	CROSSARM 1" SQ. ALUM. TUBING			
11	1	BR38	U BOLT ASS'Y			
2	1	30002	HI-BAND FOLDED DIPOLE ASS'Y			
3 T-RU 9	7	30004	HI-BAND REFLECTOR ASS'Y	— 2 PC CONST.		

SCALE: NONE
NO. REQ'D PER ASSEMBLY: 1
MATERIAL:
HEAT TREAT:
FINISH:
TOLERANCES UNLESS OTHERWISE SPECIFIED
FRACTIONAL ± 1/64
DECIMAL ± .005
ANGULAR ± 1/2°

ANTENNA, 10 ELEMENT
10Y1013G ALBANY, N.Y.

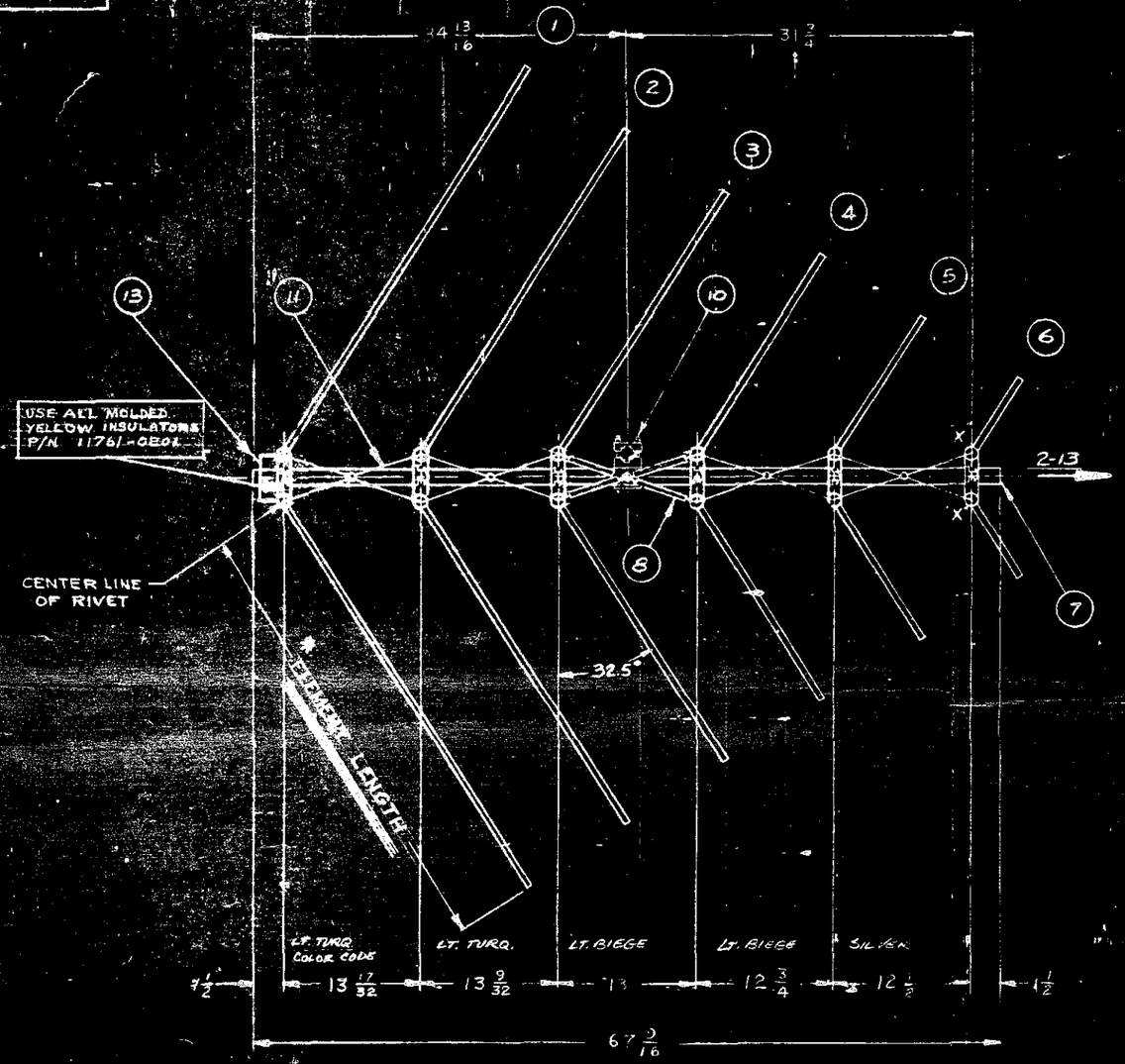
DRAWN	CHECKED	ENG. APP.	PROD. APP.
F.G. 2-12-59	6-2-59	6-16-60	6-17-60

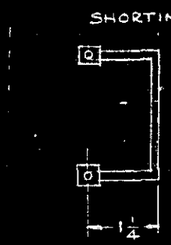
JFD MANUFACTURING CO. INC.
BROOKLYN 19, N.Y.

DATE OF PRINTING: JAN 2 0 1967
NEXT ASSEMBLY:
DRAWING NO. 1 CLAS

IBM 53701

REV.	DESCRIPTION	DATE	APP.
A	1½ DIM. WAS 1"; 34 DIM. WAS 33½; 67½ WAS 67.	4-16-63	
B	EL "2 LENGTH 46⅝ WAS 46 3/16 EL "3 LENGTH 41¾ WAS 43	9-16-63	
C	"U" BOLT ASS'Y WAS 30398 CHANGED TO 30398-1; THE LETTER "C" WILL BE STAMPED ON LABELS	5-2-63	
D	CROSSARM 68 WAS 67½	5-7-63	
E	CHANGED HARNESS TO SOLID WIRE .155 DIA. THE LETTER "H" SHALL BE STAMPED ON ALL LABELS	3-25-64	
F	MODIFIED SPACINGS. SEE CROSS ARM PRINT.	1-20-65	





NOTICE
THIS PRINT SUPERCEDES ALL ISSUES TO DATE
JFD SOUTHERN

* ELEMENT LENGTH MEASURED FROM CENTER OF RIVET TO END OF ELEMENT.

00334

NOTE:
1-TAKE OFF AT BOTTOM OF INSULATOR "XX"
- CARTON SIZE IS 92½ LG.

ITEM NO	NO. REQ'D	PART NO	DESCRIPTION	MATERIAL	SPECIFICATION	NOTE
13	1	1129G-4	SHORTING STUB 1/4 LG.			
11	4		HARNESS ASS'Y			
10	1	30398-1	DOUBLE U-BOLT ASS'Y			
8	1		HARNESS ASS'Y			
7	1	12036	CROSSARM SQ.			
1 TO 6	12	1183-	ELEMENT			

SCALE: NONE
NO. REQ'D PER ASSEMBLY: ~
MATERIAL: ~
HEAT TREAT: ~
FINISH: GOLD ALODINE

TOLERANCES UNLESS OTHERWISE SPECIFIED
FRACTIONAL ± 1/64
DECIMAL ± .005
ANGULAR ± 1/2°

Z-11H 973-2
ASSEMBLY DWG. (LPV6L)

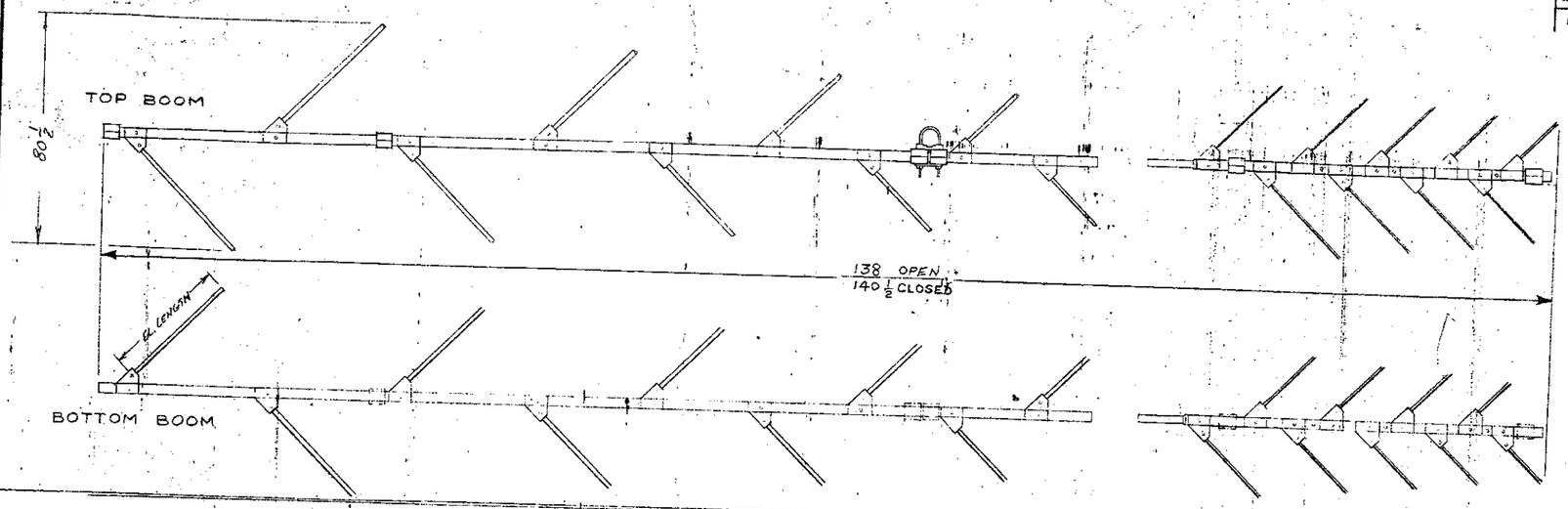
DRAWN	CHECKED	ENG. APP.	PROD. APP.
M.W. 10-10-62	10-12-62		

JFD ELECTRONICS CORP.
BROOKLYN, N.Y.

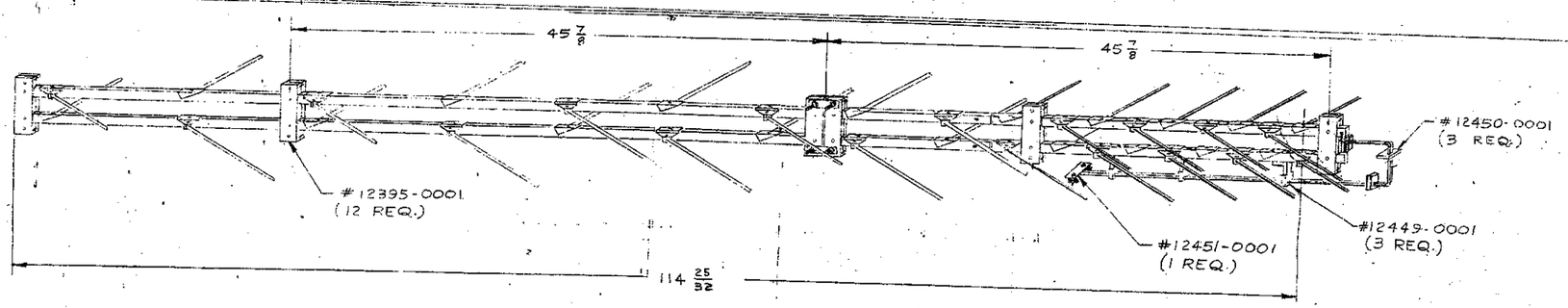
DATE OF PRINTING: NOV 7 1965
NEXT ASSEMBLY:
DRAWING NO. 50451

IBM 5260

REV.	DESCRIPTION	DATE	APP.
A	REVISED PER ECR 66-1124	10-14-66	



NOTICE
THIS PRINT SUPERCEDES ALL ISSUES TO DATE
JFD SOUTHERN



NOTE: BOOM BRACKET PT#1089-19 (U. TRUSS 54 1/2)
CROSSARM LENGTH - 118 1/32

00333

ITEM NO.	NO. REQ'D	PART NO.	DESCRIPTION	MATERIAL	SPECIFICATION	NOTE

SCALE: APPROX. 1/8 : 1
NO. REQ'D PER ASSEMBLY:
MATERIAL:
HEAT TREAT:
FINISH:

TOLERANCES UNLESS OTHERWISE SPECIFIED:
FRACTIONAL ± 1/64
DECIMAL ± .005
ANGULAR ± 1/2°

18 Element Twin Boom
LPVVU-18

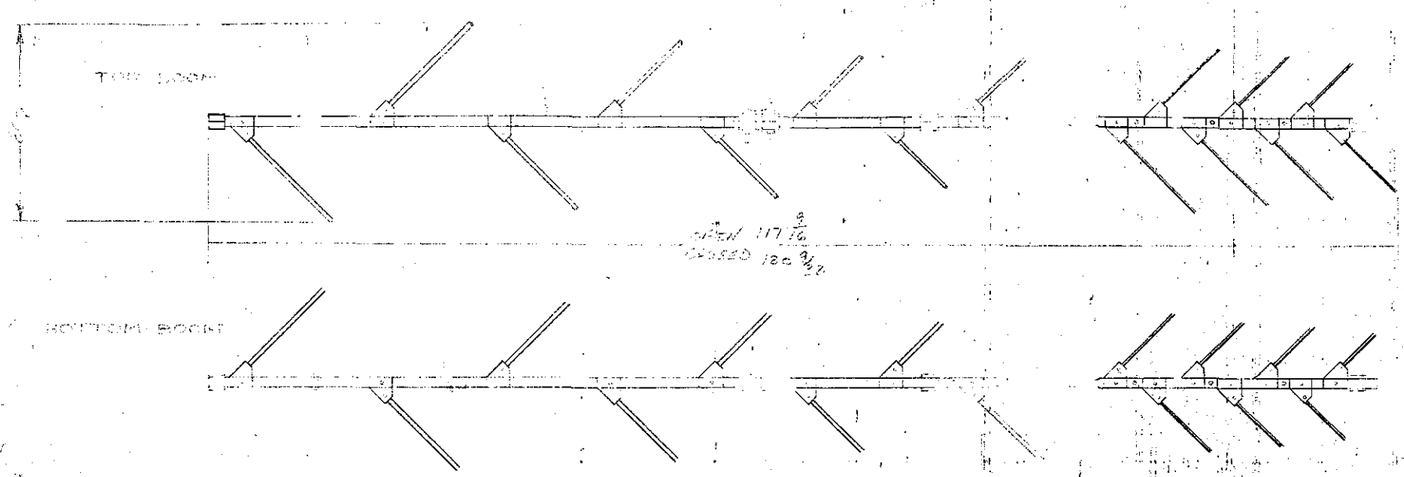
DRAWN	CHECKED	ENG. APP.	PROD. APP.
Andrea Scott 12-13-66			

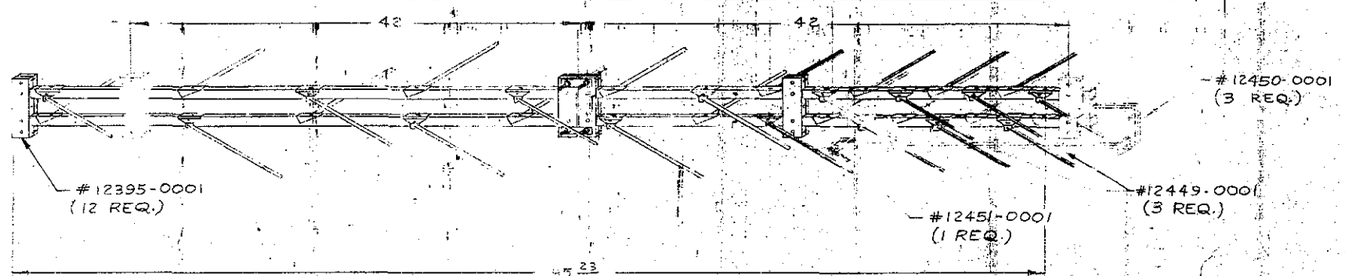
JFD ELECTRONICS CORP.
BROOKLYN 19, N. Y.

DATE OF PRINTING: NOV 7 1966
NEXT ASSEMBLY:
DRAWING NO.: 52730

REV.	DESCRIPTION	DATE	APP.
A	BOOM BRACE 51 "OUTSIDE WIRE TIE"	1-24-69	
B	CROSSARM CHANGED TO ONE PIECE	9-1-69	
C	REVISED OUTSIDE OF .156 WIRE	4-21-64	

NOTICE
THIS PRINT SUPERCEDES ALL ISSUES TO DATE
JFD SOUTHERN





NOTE: BOOM ASSY PT # 11084 (CUT-SIZE 51")
CROSSARM LENGTH = 28 31/32

00332

ITEM NO.	NO. REQ'D	PART NO.	DESCRIPTION	MATERIAL	SPECIFICATION	NOTE

SCALE: APPROX. 1/6 : 1
TOLERANCES UNLESS OTHERWISE SPECIFIED
FRACTIONAL ± 1/64
DECIMAL ± .005
ANGULAR ± 1/2°
NO. REQ'D PER ASSEMBLY:
MATERIAL:
HEAT TREAT:
FINISH:

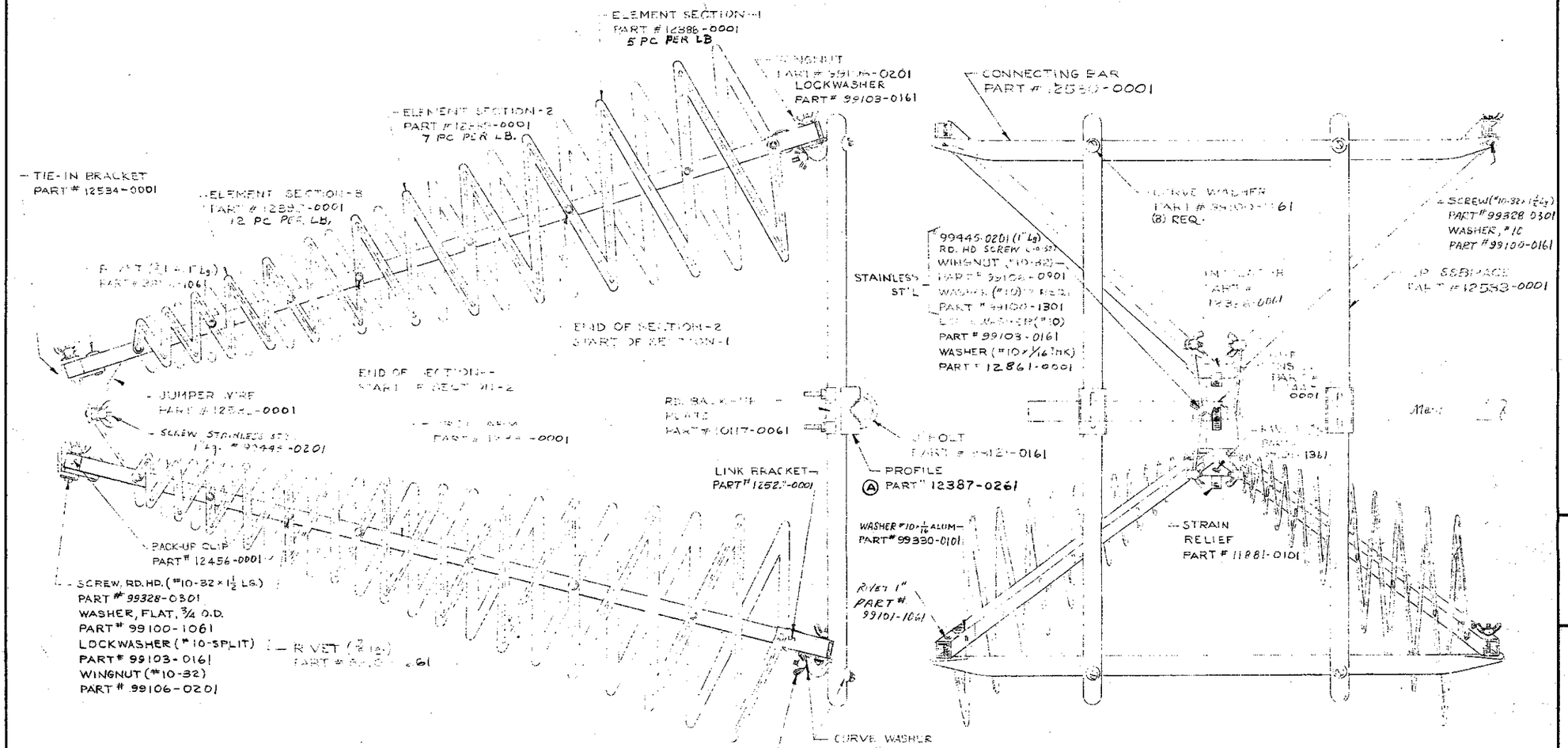
11 Element Twin Boom
LPVVU-1

DRAWN	CHECKED	ENG. APP.	PROD. APP.
Anderson			

JFD ELECTRONICS CORP.
BROOKLYN 19, N.Y.

DATE OF PRINTING: NOV 7 1966
NEXT ASSEMBLY:
DRAWING NO. 52720

REV.	DESCRIPTION	DATE	APP.
A	PART # 12387-0261 WAS PART # 10118-0061.	5-10-66	



NOTE: U-BOLTS, PROFILES, BACK UP PLATES, LOCK WASHER & NUTS TO BE ASSY TO CROSSARM BY FABRICATOR. ALL HARDWARE TO BE ATTACHED TO UNIT.

00331

ITEM NO.	NO. REQ'D	PART NO.	DESCRIPTION	MATERIAL	SPECIFICATION	NOTE

SCALE: 1:4

NO. REQ'D PER ASSEMBLY:

MATERIAL:

HEAT TREAT:

FINISH:

TOLERANCES UNLESS OTHERWISE SPECIFIED
FRACTIONAL ± 1/64
DECIMAL ±.005
ANGULAR ± 1/2°

DOUBLE BAY
LPV-21120 ANT.

DRAWN	CHECKED	ENG. APP.	PROD. APP.
Fred Scott 12-14-66			

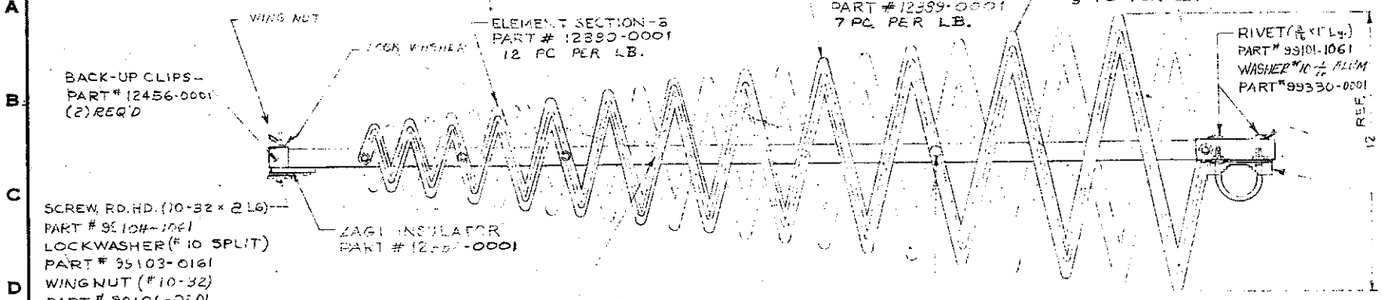
JFD ELECTRONICS CORP.
BROOKLYN 19, N.Y.

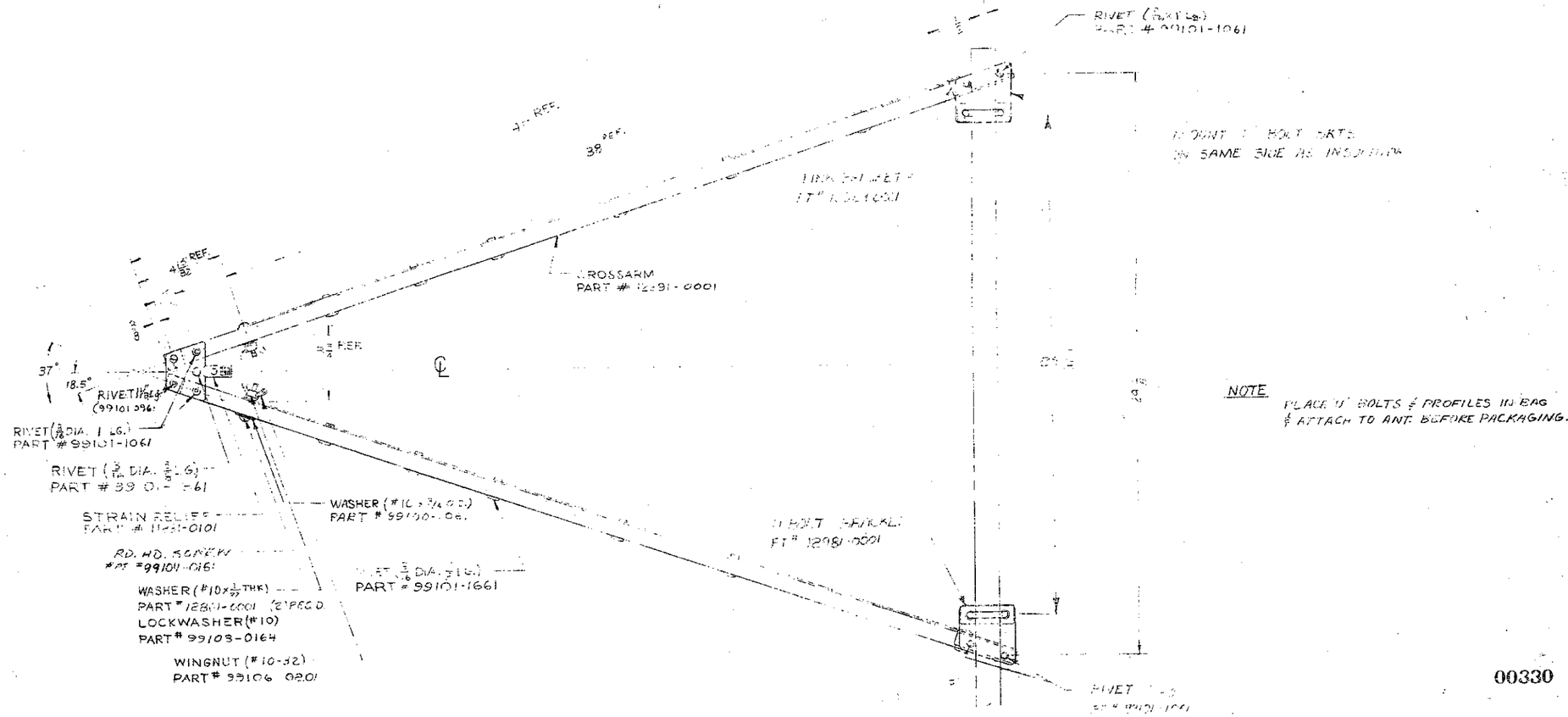
DATE OF PRINTING: DEC 14 1966

NEXT ASSEMBLY:

DRAWING NO. 52750

REV.	DESCRIPTION	DATE	APP.



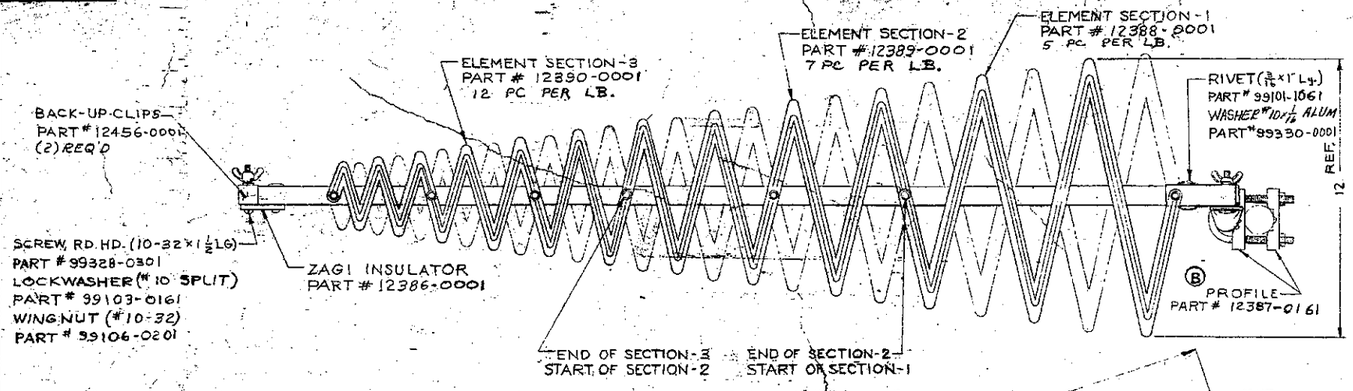


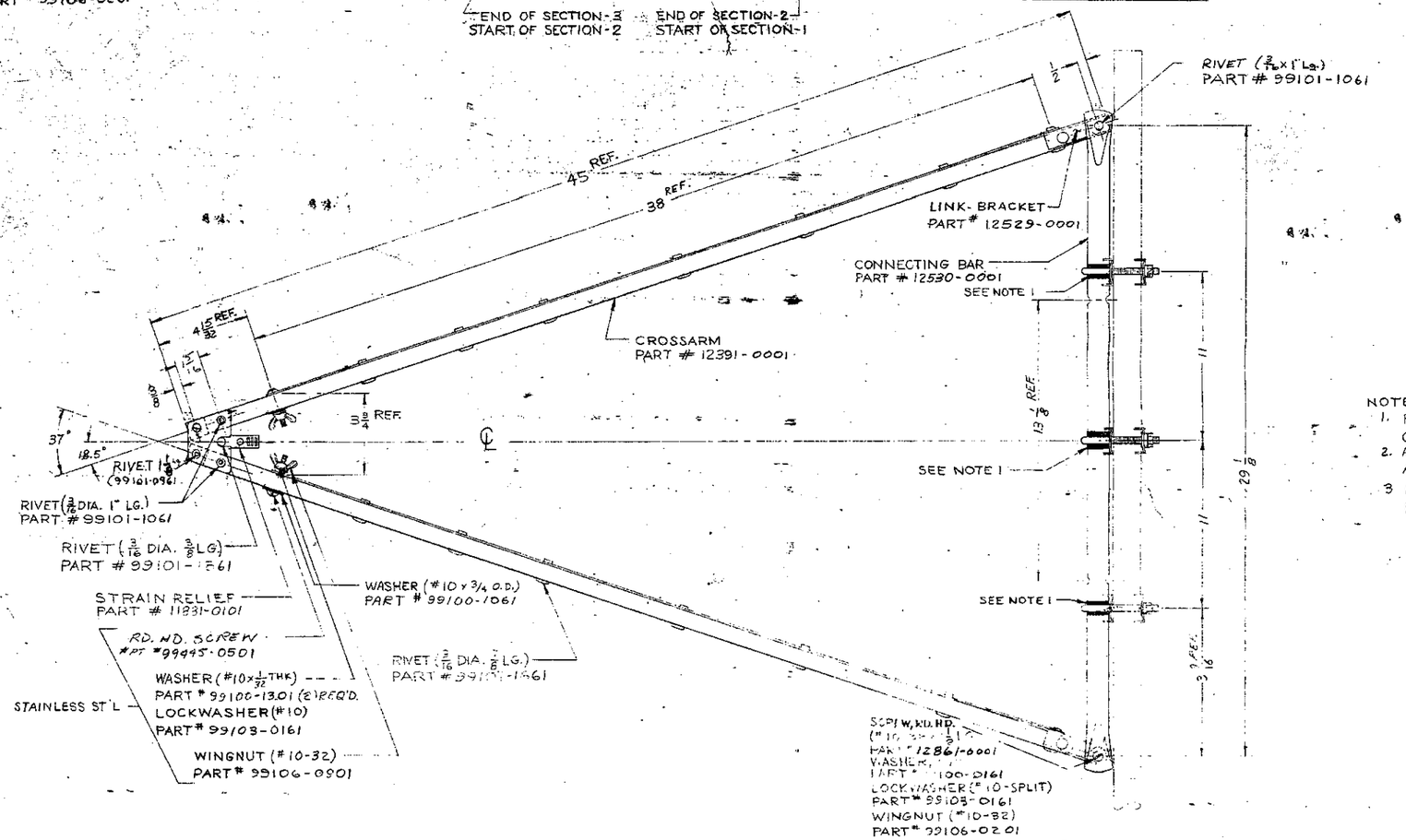
00330

ITEM NO.	NO. REQ'D	PART NO.	DESCRIPTION	MATERIAL	SPECIFICATION	NOTE

SCALE: 1" = 4	TOLERANCES UNLESS OTHERWISE SPECIFIED FRACTIONAL ± 1/64 DECIMAL ± .005 ANGULAR ± 1/2°	SINGLE BAY LPV-2U15 ANT.		DATE OF PRINTING DEC 14 1966
NO. REQ'D PER ASSEMBLY:		DRAWN: W M M	CHECKED:	NEXT ASSEMBLY
MATERIAL:		12-25-66	ENG. APP.	DRAWING NO.
HEAT TREAT:		JFD ELECTRONICS CORP. BROOKLYN 19, N.Y.	PROD. APP.	50506
FINISH:				

REV.	DESCRIPTION	DATE	APP.
A	ADDED 3/8 O.D FLAT WASHER UNDER HEAD OF RD. HD. SCREW ADDED BACK-UP CLIP (2 REQ'D)		
B	PART # 12387-0161 WAS PART # 11249-0061.	5-16-68	





NOTES:
1. PLACE BLACK TAPE AROUND CONNECTING BAR AS SHOWN.
2. ALL HARDWARE SHALL BE ATTACHED TO ANTENNA
3. PLACE "U" BOLTS & PROFILES IN BAG & ATTACH TO ANT. BEFORE PACKAGING.

00329

ITEM NO.	NO. REQ'D	PART NO.	DESCRIPTION	MATERIAL	SPECIFICATION	NOTE

SCALE: 1" = 4"
NO. REQ'D PER ASSEMBLY:
MATERIAL:
HEAT TREAT:
FINISH:

TOLERANCES UNLESS OTHERWISE SPECIFIED
FRACTIONAL ± 1/64
DECIMAL ± .005
ANGULAR ± 1/2°

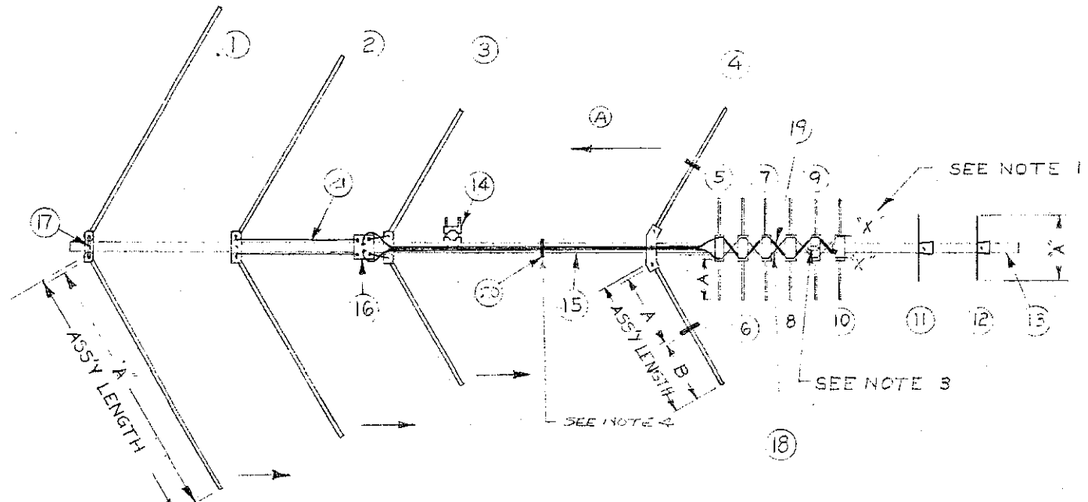
SINGLE BAY
LPV ZU 10. ANT.

DRAWN	CHECKED	ENG. APP.	PROD. APP.
Anderson 11-25-63			

JFD ELECTRONICS CORP.
BROOKLYN 19, N.Y.

DATE OF PRINTING: DEC 1 4 1966
NEXT ASSEMBLY:
DRAWING NO. 52740

REV.	DESCRIPTION	DATE	APP.
A	CHANGED FOLDING POINT OF ELEMENTS	10-20-66	
B	ADDED STRAIN RELIEF ITEM # 20 (2 UNITS)	10-28-66	
C	ADDED ITEM ~~#~~ 21	11-15-66	



NOTE: 1. "X"-"X" TAKE OFF POINT
2. → INDICATES FOLDING ACTION OF ELEMENTS
3. ATTACH STRAIN RELIEF P/N 11981-0101 TO UNDERSIDE OF CROSSARM AS SHOWN
4. STRAIN RELIEF ITEM # 20 USED TO SUPPORT TWIN LEAD HARNESS ASS'Y ITEM # 15.

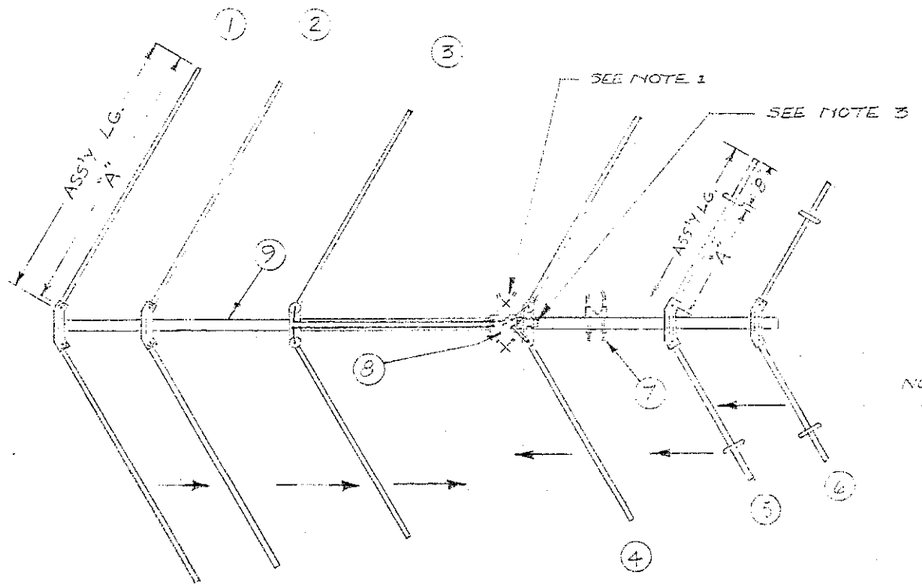
ANT. CARTON SIZE - 6 x 6 x 91
ANT. SHIPPING WEIGHT - - - - - - - - - - - - - - - - - APPROX LBS
ANT. WEIGHT - APPROX LBS
OVERALL CROSSARM LENGTH - - - - - - - - - - - - - - 90½ LONG
TURNING RADIUS - 48 RAD
LONGEST ELEMENT TIP TO TIP - - - - - - - - - - - - 92 LONG

00328

ITEM NO.	NO. REQ'D	PART NO.	DESCRIPTION	MATERIAL	SPECIFICATION	NOTE
21	2	12778-0101	HARNESS WIRE			
20	1	15081-0101	STRAIN RELIEF NYLON UNITAPE			
19	1	30761-0401	HARNESS WIRE ASS'Y			
18	1	15426-0701	HARNESS WIRE			
17	1	30695-0001	SHORTING STUB			
16	1	30695-0101	COUPLER (ISOLATOR			
15	1	30763-0101	TWIN LEAD HARNESS			
14	2	30598-0101	U-BOLT ASS'Y			
13	1	15447-0001	CROSSARM 1" SQ.			
11 + 12	1 EA	30750-0101	DOUBLE UHF WIRE EL. ASS'Y			
5 thru 10	1 EA	30756-0001	WIRE EL ASS'Y			
4	1	30752-0001	PARASITE EL ASS'Y			
1,2,3	1 EA	30759-0001	INSULATOR EL. ASS'Y LPV			

SCALE: NONE	TOLERANCES UNLESS OTHERWISE SPECIFIED FRACTIONAL ± 1/64 DECIMAL ± .005 ANGULAR ± 1/2°	LPV-G/S		DATE OF PRINTING DEC 14 1966
NO. REQ'D PER ASSEMBLY: -				NEXT ASSEMBLY
MATERIAL: NOTED		DRAWN	CHECKED / ENG. APP. / PROD. APP.	
HEAT TREAT: -		11-22-66		DRAWING NO.
FINISH: NONE		JFD ELECTRONICS CORP. BROOKLYN 19, N.Y.		01010030

REV.	DESCRIPTION	DATE	APP.



NOTE:
1. X-X TAKE OFF POINT (SEE COUPLER ISOLATOR DWG. P/N 30695-0001)
2. → INDICATES FOLDING ACTION OF ELEMENTS
3. ATTACH STRAIN RELIEF 11881-0101 TO UNDERSIDE OF CROSSARM AS SHOWN

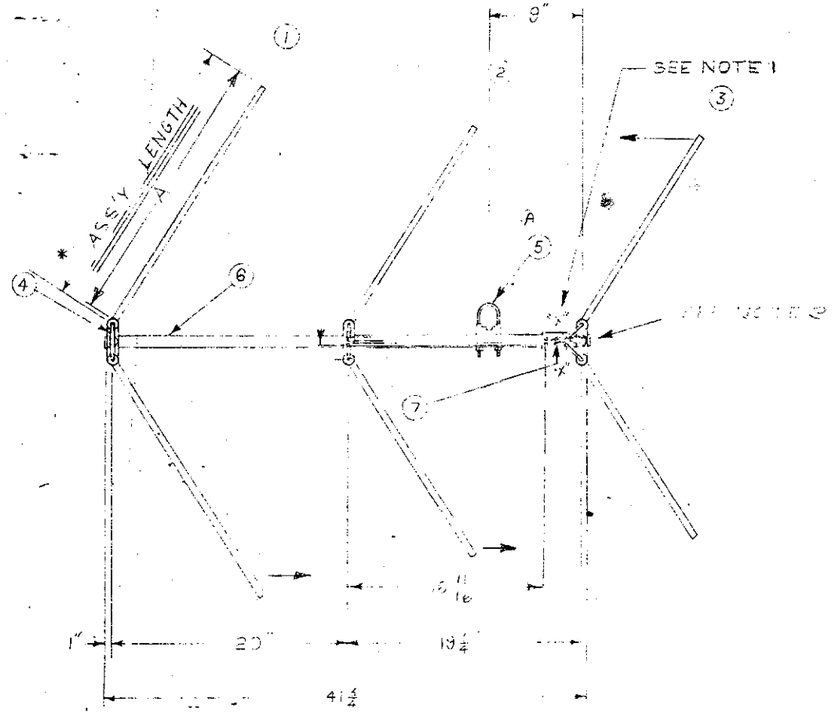
ANT. CARTON SIZE — 6 x 6 x 78
ANT. SHIPPING WT. — APPROX. 7½ LBS.
ANT. WT. — APPROX. 5¼ LBS.
OVERALL CROSSARM LG. — 71¾
TURNING RADIUS — 83
LONGEST ELEMENT TIP TO TIP — 90

00327

ITEM NO.	NO. REQ'D	PART NO.	DESCRIPTION	MATERIAL	SPECIFICATION	NOTE
9	1	13458-0001	CROSSARM 1" SQ.			
8	1	30695-0001	COUPLER (ISOLATOR)			
7	1	30396-0101	U-BOLT ASS'Y			
5/6	1 EA.	30752-0101	PARASITIC EL ASS'Y W/VHF CAPACITOR			
3/4	1 EA.	30759-0001	LPV INSULATOR ASS'Y			
1/2	1 EA.	30765-0001	PARASITE EL ASS'Y			

SCALE: NONE	TOLERANCES UNLESS OTHERWISE SPECIFIED FRACTIONAL ± 1/64 DECIMAL ± .005 ANGULAR ± 1/2°	LPV GK 2	DATE OF PRINTING DEC 14 1966
NO. REQ'D PER ASSEMBLY: ~~1~~			NEXT ASSEMBLY
MATERIAL: NOTED	DRAWN: S. Hattel 12-14-66	CHECKED	ENG. APP. / PROD. APP.
HEAT TREAT: ~~~			DRAWING NO.
FINISH: ~~~	JFD ELECTRONICS CORP. BROOKLYN 19, N.Y.		01001020

REV.	DESCRIPTION	DATE	APP.



NOTE:
1. 'X" 'X" TAKE OFF POINT (SEE COUPLER ISOLATOR DWG P/N 30695-0001)
2. INSTALL 3 ISOLATION SECTION OF ELEMENTS
3. ATTACH STRAIN RELIEF 11881-0101 TO UNDERSIDE OF CROSSARM AS SHOWN

09326

ITEM NO.	NO. REQ'D	PART NO.	DESCRIPTION	MATERIAL	SPECIFICATION	NOTE
7	1	30695-0001	[illegible] (ISOLATOR)			
6	1	12964-0001	CROSSARM SQ.			
5	1	30398-0101	[illegible] ASSY			
4	1	12023-0001	SHORTING STUB			
1, 2, 3	1 EA	30759-0001	[illegible] ASSY			

SCALE: NONE
NO. REQ'D PER ASSEMBLY:
MATERIAL: NOTED
HEAT TREAT:
FINISH: NONE

TOLERANCES UNLESS OTHERWISE SPECIFIED
FRACTIONAL ± 1/64
DECIMAL ± .005
ANGULAR ± 1/2°

LPV-GK1

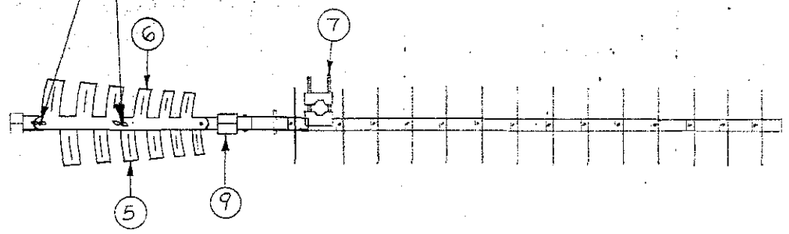
DRAWN	CHECKED	ENG. APP.	PROD. APP.

JFD ELECTRONICS CORP.
BROOKLYN 19, N. Y.

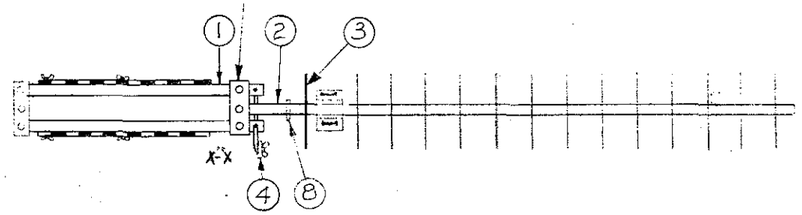
DATE OF DRAWING: DEC 14 1966
NEXT ASSEMBLY:
DRAWING NO. 01001010

REV.	DESCRIPTION	DATE	APP.

STUD RIVET P/N 13092-0361 TO BE RIVETED ONTO CROSSARM AT THIS POINT + ASSEMBLED WITH LOCKWASHER P/N 99103-0164 + WINGNUT P/N 99106-0201



SEE CONSTRUCTION NOTE



NOTE:
1. "X"-"X" TAKE OFF POINT
2. STRAIN RELIEF P/N 13081-0001 TO BE LOCATED AS SHOWN ON CENTER CROSSARM ONLY PRIOR TO RIVETING EL. ASSY TO CROSSARM.

CONSTRUCTION NOTE: PRIOR TO ASSY OF CENTER CROSSARM TO ANTENNA AND PRIOR TO ATTACHING CENTER CROSSARM ELEMENTS RIVET 1 EA TRIPLE BOOM INSULATOR P/N 12992-0101 TO CENTER CROSSARM USING RIVET P/N 99101-1001 AS SHOWN.

ANT CARTON SIZE ---------- 6 X 5 X 66 3/4
ANT SHIPPING WT. ---------- APPROX LBS
ANT WT. ---------- APPROX LBS
OVERALL CROSSARM LENGTH ---- 66 1/4 LONG
TURNING RADIUS ---------- 39 RAD
LONGEST ELEMENT TIP TO TIP ---- 13 LONG

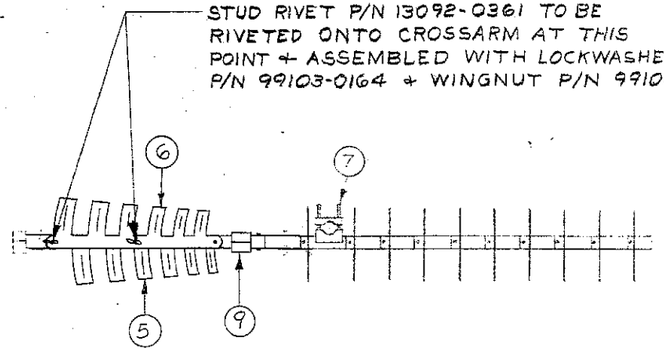
00325

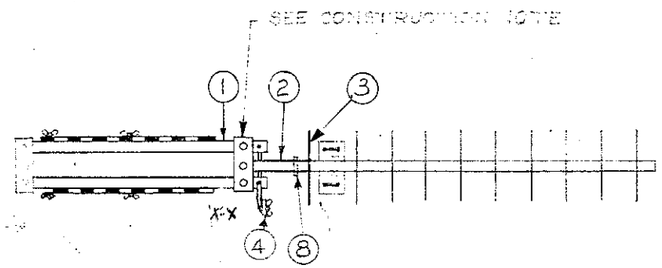
ITEM NO.	NO. REQ'D	PART NO.	DESCRIPTION	MATERIAL	SPECIFICATION	NOTE
9	4	12992-0101	TRIPLE BOOM INSULATOR			
8	1	13081-0001	STRAIN RELIEF ASSY, COLOR ORANGE			
7	1	30378-0201	U-BOLT INSULATOR ASSY			
6	2	13069-0101	UHF DRIVER TOP ALUM			
5	2	13069-0201	UHF DRIVER BOTTOM ALUM			
4	1	30744-0001	TAKE OFF WIRE ASSY			
3	14	12997-0001	UHF DISC ALUM			
2	1	13151-0101	3/4 SQ. CENTER CROSSARM			
1	2	13151-0001	3/4 SQ. TOP + BOTTOM CROSSARM			

SCALE: NONE	TOLERANCES UNLESS OTHERWISE SPECIFIED FRACTIONAL ± 1/64 DECIMAL ± .005 ANGULAR ± 1/2°	UCL 22		DATE OF PRINTING DEC 13 1966
NO. REQ'D PER ASSEMBLY: ~				NEXT ASSEMBLY
MATERIAL: NOTED		DRAWN: R Cates 9-28-66	CHECKED	ENG. APP.	PROD. APP.	DRAWING NO.
HEAT TREAT: ~						
FINISH: ~		JFD ELECTRONICS CORP. BROOKLYN 19, N.Y.				01023260

REV.	DESCRIPTION	DATE	APP.
A	ITEM 1 WAS 30878-0001 ITEM 9 WAS 30348-0201	11-10-66	

STUD RIVET P/N 13092-0361 TO BE RIVETED ONTO CROSSARM AT THIS POINT + ASSEMBLED WITH LOCKWASHER P/N 99103-0164 + WINGNUT P/N 99106-0201





NOTE:
1. "X"-"X" TAKE OFF POINT
2. STRAIN RELIEF P/N 13081-0001 TO BE LOCATED AS SHOWN ON CENTER CROSSARM ONLY PRIOR TO RIVETING E.L. ASSY TO CROSSARM.

CONSTRUCTION NOTE: PRIOR TO ASS'Y OF CENTER CROSSARM TO ANTENNA AND PRIOR TO ATTACHING CENTER CROSSARM ELEMENTS RIVET (1) EA TRIPLE BOOM INSULATOR P/N 12992-0101 TO CENTER CROSSARM USING RIVET P/N 99101-1001 AS SHOWN.

00324

9	4	12992-0101	TRIPLE BOOM INSULATOR
8	1	13081-0001	STRAIN RELIEF (POLY) COLOR ORANGE
7	1	30878-0001	U-BOLT INSULATOR ASS'Y
6	2	13069-0101	UHF DRIVER TOP ALUM
5	2	13069-0201	UHF DRIVER BOTTOM ALUM
4	1	30744-0001	TAKE OFF WIRE ASS'Y
3	10	12997-0001	UHF DISC ALUM.
2	1	13450-0101	3/4 SQ. CENTER CROSSARM
1	2	13450-0001	3/4 SQ. TOP + BOTTOM CROSSARM

ITEM NO.	NO. REQ'D	PART NO.	DESCRIPTION	MATERIAL	SPECIFICATION	NOTE

SCALE: NONE
TOLERANCES UNLESS OTHERWISE SPECIFIED FRACTIONAL ± 1/64 DECIMAL ± .005 ANGULAR ± 1/2°
UCL 22
DATE OF PRINTING: DEC 1 3 1966
NO. REQ'D PER ASSEMBLY: ~
NEXT ASSEMBLY
MATERIAL: NOTED
HEAT TREAT: ~
FINISH: ~

DRAWN	CHECKED	ENG. APP.	PROD. APP.
R Bates			
9-28-66			

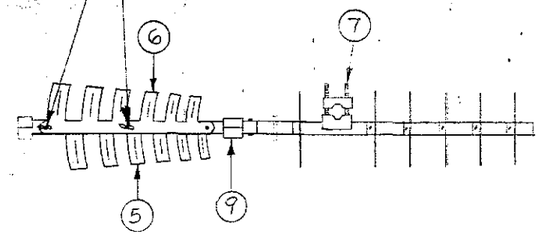
JFD ELECTRONICS CORP.
BROOKLYN 19, N.Y.

DRAWING NO. 01023220

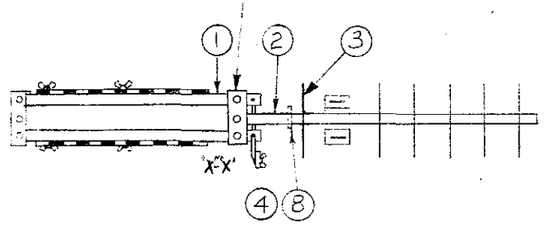
ANT CARTON SIZE	8×6×54 3/4
ANT SHIPPING WT.	APPROX LBS
ANT WT.	APPROX LBS
OVERALL CROSSARM LENGTH	54 1/4 LONG
TURNING RADIUS	28 RAD
LONGEST ELEMENT TIP TO TIP	13 LONG

REV.	DESCRIPTION	DATE	APP.

STUD RIVET P/N 13092-0361 TO BE RIVETED ONTO CROSSARM AT THIS POINT & ASSEMBLED WITH LOCKWASHER P/N 99103-0164 & WINGNUT P/N 99106-0201



SEE CONSTRUCTION NOTE



NOTE:
1. 'X'- 'X" TAKE OFF POINT
2. STRAIN RELIEF P/N 13081-0001 TO BE LOCATED AS SHOWN ON CENTER CROSSARM ONLY PRIOR TO RIVETING EL. ASSY TO CROSSARM.

CONSTRUCTION NOTE: PRIOR TO ASSY OF CENTER CROSSARM TO ANTENNA AND PRIOR TO ATTACHING CENTER CROSSARM ELEMENTS PIVET 4 EA TRIPLE BOOM INSULATOR P/N 12992-0101 TO CENTER CROSSARM USING PIVET P/N 99101-1081 AS SHOWN.

00323

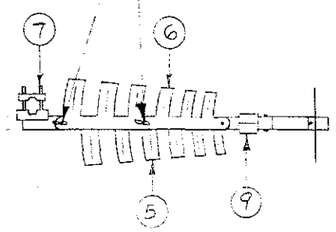
ANT CARTON SIZE	8x6x42
ANT SHIPPING WT.	APPROX LBS
ANT WT.	APPROX LBS
OVERALL CROSSARM LENGTH	42 LONG
TURNING RADIUS	28 RAD
LONGEST ELEMENT TIP TO TIP	13 LONG

ITEM NO.	NO. REQ'D	PART NO.	DESCRIPTION	MATERIAL	SPECIFICATION	NOTE
9	4	12992-0101	TRIPLE BOOM INSULATOR			
8	1	13081-0001	STRAIN RELIEF (POLY) COLOR ORANGE			
7	1	30398-0201	U-BOLT INSULATOR ASS'Y			
6	2	13069-0101	UHF DRIVER TOP	ALUM		
5	2	13069-0201	UHF DRIVER BOTTOM	ALUM		
4	1	30744-0001	TAKE OFF WIRE ASS'Y			
3	6	12997-0001	UHF DISC	ALUM		
2	1	13449-0101	3/4 SQ. CENTER CROSSARM			
1	2	13449-0001	3/4 SQ. TOP + BOTTOM CROSSARM			

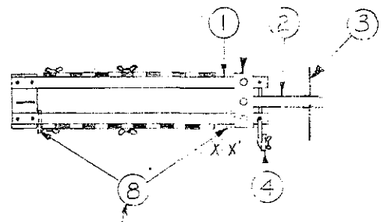
SCALE: NONE	TOLERANCES UNLESS OTHERWISE SPECIFIED FRACTIONAL ± 1/64 DECIMAL ± .005 ANGULAR ± 1/2°	UCL 18		DATE OF PRINTING DEC 13 1966
NO. REQ'D PER ASSEMBLY: ~				NEXT ASSEMBLY
MATERIAL: NOTED		DRAWN: R Cates 9-22-66	CHECKED / ENG. APP. / PROD. APP.	
HEAT TREAT: ~		JFD ELECTRONICS CORP. BROOKLYN 19, N.Y.		DRAWING NO. 01023180
FINISH: ~				

REV.	DESCRIPTION	DATE	APP.

STUD RIVET P/N 13092-0361 TO BE RIVETED ONTO CROSSARM AT THIS POINT & ASSEMBLED WITH LOCKWASHER P/N 99103-0164 & WINGNUT P/N 99106-0201



– SEE CONSTRUCTION NOTE



SEE NOTE (2)

NOTE:
1. "X"-"X" TAKE OFF POINT
2. STRAIN RELIEF P/N 13081-0001 TO BE LOCATED AS SHOWN ON BOTTOM CROSSARM ONLY PRIOR TO RIVETING EL. ASSEMBLY TO CROSSARM

CONSTRUCTION NOTE: PRIOR TO ASS'Y OF CENTER CROSSARM TO ANTENNA AND PRIOR TO ATTACHING CENTER CROSSARM ELEMENTS RIVET (1) EA TRIPLE BOOM INSULATOR P/N 12992-0101 TO CENTER CROSSARM USING RIVET P/N 99101-1001 AS SHOWN.

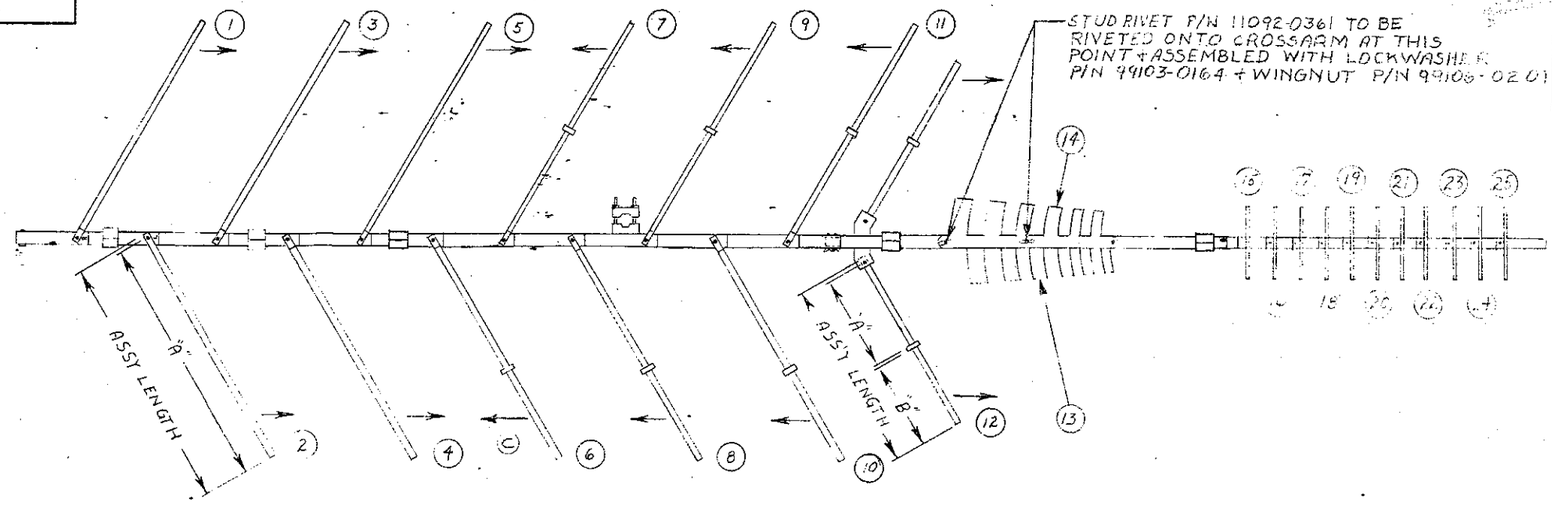
00322

ANT CARTON SIZE	6 x 8 x 28 1/2
ANT SHIPPING WT	APPROX LBS
ANT WT.	APPROX LBS
OVERALL CROSSARM LENGTH	27 3/4 LONG
TURNING RADIUS	26 1/2 RAD
LONGEST ELEMENT TIP TO TIP	13" LONG

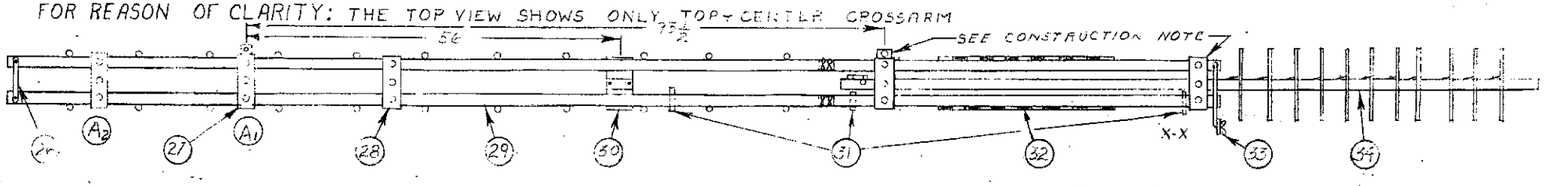
ITEM NO.	NO. REQ'D	PART NO.	DESCRIPTION	MATERIAL	SPECIFICATION	NOTE
9	2	12992-0101	TRIPLE BOOM INSULATOR			
8	2	13081-0001	STRAIN RELIEF (POLY) COLOR ORANGE			
7	1	30751-0001	U-BOLT INSULATOR ASS'Y			
6	2	13069-0101	UHF DRIVER TOP	ALUM		
5	2	13069-0201	UHF DRIVER BOTTOM	ALUM		
4	1	30744-0001	TAKE OFF WIRE ASS'Y			
3	1	12997-0001	UHF DISC	ALUM		
2	1	13448-0101	3/4 SQ. CENTER CROSSARM			
1	2	13448-0001	3/4 SQ. TOP + BOTTOM CROSSARM			

SCALE: NONE	TOLERANCES UNLESS OTHERWISE SPECIFIED FRACTIONAL ± 1/64 DECIMAL ± .005 ANGULAR ± 1/2°	UCL 13		DATE OF PRINTING DEC 13 1966
NO. REQ'D PER ASSEMBLY: ~~				NEXT ASSEMBLY
MATERIAL: NOTED	DRAWN: R Cates 9-28-66	CHECKED	ENG. APP.	PROD. APP.
HEAT TREAT: ~~				DRAWING NO.
FINISH: ~~	JFD ELECTRONICS CORP. BROOKLYN 19, N.Y.			01023130

REV.	DESCRIPTION	DATE	APP.
A	1/4 INSULATOR MOVE 1 POS. & INSULATOR ADDED	7-5-66	
B	WIRING CHANGE	9-29-66	
C	DELETE SPRING WASHER SF EL-60	11-15-66	



FOR REASON OF CLARITY: THE TOP VIEW SHOWS ONLY TOP & CENTER CROSSARM



NOTE:
1. FOR BOOM BRACE SEE JFD DWG NO. 13421-0701
2. X-X TAKE OFF POINT
3. BOTTOM CROSSARM HAS STRAIN RELIEFS ATTACHED AS SHOWN - STRAIN RELIEFS TO BE POSITIONED PRIOR TO RIVETING EL ASS'Y.
4. → INDICATES FOLDING ACTION OF ELEMENTS

ANT. CARTON SIZE — — — 128½ X 6" X 6"
ANT. SHIPPING WEIGHT — — APPROX LBS
ANT. WEIGHT — — — — APPROX LBS.
OVERALL CROSSARM LENGTH — — "LONG
TURNING RADIUS — — 98½ RAD.
LONGEST ELEMENT TIP TO TIP — 92½ LONG

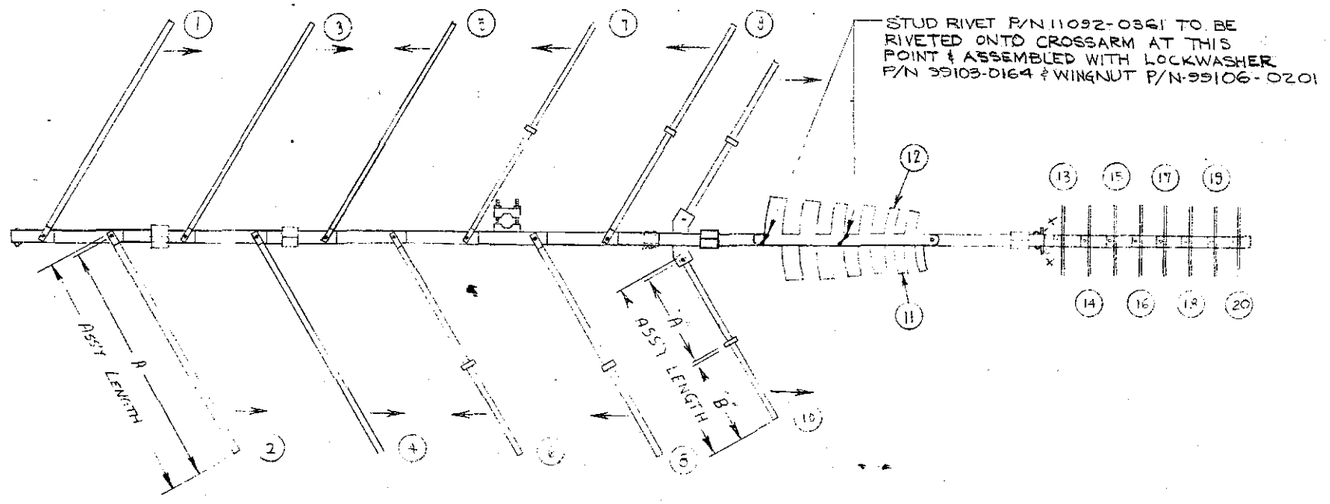
CONSTRUCTION NOTE: PRIOR TO INSTALLATION OF CENTER CROSSARM TO DIPOLE ASSY, FIND PRIOR TO INSTALLATION OF CENTER CROSSARM ELEMENTS, INSTALL TRIPLE BOOM INSULATOR P/N 12992-0101 TO CENTER CROSSARM USING RIVET P/N 99101-1061 AS SHOWN.

00321

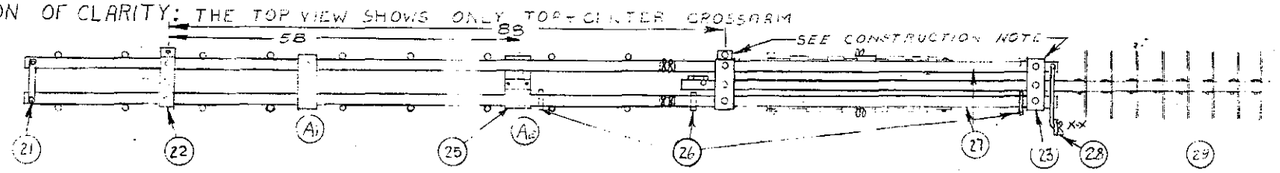
ITEM NO.	NO. REQ'D	PART NO.	DESCRIPTION	MATERIAL	SPECIFICATION	NOTE
15 THRU 25	1 EA.	12997-0001	ALUM DISC.			
NOT SHOWN	1	30749-0001	BOOM BRACE ASS'Y			
NOT SHOWN	1	30755-0101	HARDWARE BAG			
3	1	13440-0301	3/4 SQ CENTER CROSSARM			
26	1	30744-0001	TAKE OFF WIRE ASS'Y			
1	2	13440-0201	3/4 SQ TOP & BOTTOM CROSSARM			
3	3	13081-0001	STRAIN RELIEF POLY. COLOR ORANGE			
26	1	30751-0001	U-BOLT & INSULATOR ASS'Y			
2	2	13440-0101	3/4 SQ TOP & BOTTOM CROSSARM			
5	6	12992-0101	TRIPLE BOOM INSULATOR			
4	4	12992-0001	TRIPLE BOOM INSULATOR FOR BOOM BRACE			
26	1	10258-0401	SHORTING STRAP			
14	2 EA	13069-0201	UHF DRIVER BOTTOM			
13	2 EA	13069-0101	UHF DRIVER TOP			
12	1	30752-0001	PARASITE EL. ASS'Y			
6-8-10	2 EA	30754-0201	EL. & CAPACITOR ASS'Y - L.H.			
7-9-11	2 EA	30754-0101	EL. & CAPACITOR ASS'Y R.H.			
2-4	2 EA	30753-0101	EL. ASS'Y L.H.			
1-3-5	2 EA	30753-0201	EL. ASS'Y R.H.			

SCALE: NONE	TOLERANCES UNLESS OTHERWISE SPECIFIED FRACTIONAL ± 1/64 DECIMAL ± .005 ANGULAR ± 1/2°	EPV-CL 700		DATE OF PRINTING DEC 13 1966
NO. REQ'D PER ASSEMBLY: 2		DRAWN	CHECKED / ENG. APP. / PROD. APP.	NEXT ASSEMBLY
MATERIAL: 2		J. PANZA 7-29-66		DRAWING NO.
HEAT TREAT: 2		JFD ELECTRONICS CORP. BROOKLYN 19, N.Y.		01013700
FINISH: 2				

REV.	DESCRIPTION	DATE	APP.
A 1	ADDED INSULATOR	9-14-66	
B	MOVED U BOLT LOCATION		
E	[illegible]	[illegible]	



FOR REASON OF CLARITY: THE TOP VIEW SHOWS ONLY TOP CENTER CROSSARM



NOTE: 1. FOR BOOM BRACE SEE JFD DWG NO. 13421-0701
2. X-X TAKE OFF POINT
3. BOTTOM CROSSARM HAS STRAIN RELIEFS ATTACHED AS SHOWN- STRAIN RELIEFS TO BE POSITIONED PRIOR TO RIVETING EL ASS'Y
4. → INDICATES FOLDING ACTION OF ELEMENTS

ANT. CARTON SIZE — 10½ x 5 x 5
ANT. SHIPPING WEIGHT — APPROX 16½ LBS
NET WEIGHT — APPROX 13 LBS
OVERALL CROSSARM LENGTH — 159¾ LONG
TURNING RADIUS — 85 RAD
LONGEST ELEMENT TIP TO TIP — 92½ LONG

CONSTRUCTION NOTE: PRIOR TO INSTALL OF CENTER CROSSARM ITS DIMPLED END FACE TO ATTACHING CENTER CROSSARM ELEMENTS. INSTALL TRIPLE BOOM INSULATOR P/N 12992-0101 TO CENTER CROSSARM USING RIVET P/N 99101-1061 AS SHOWN.

ITEM NO.	NO. REQ'D	PART NO.	DESCRIPTION	MATERIAL	SPECIFICATION	NOTE
13 THRU 20	1 EA.	12997-0004	ALUM DISC, UHF		00320	
NOT SHOWN	1	30749-0001	BOOM BRACE ASS'Y			
NOT SHOWN	1	30755-0101	HARDWARE BAG			
29	1	13441-0301	3/4 SQ CENTER CROSSARM			
28	1	30744-0001	TAKE OFF WIRE ASS'Y			
27	2	13441-0201	3/4 SQ TOP+BOTTOM CROSSARM			
26	3	13081-0001	STRAIN RELIEF POLY. COLOR ORANGE			
25	1	30751-0001	U-BOLT+INSULATOR ASS'Y			
24	2	13441-0101	3/4 SQ TOP+BOTTOM CROSSARM			
23	4	12992-0101	TRIPLE BOOM INSULATOR			
22	4	12992-0001	TRIPLE BOOM INSULATOR FOR BOOM BRACE			
21	1	10258-0401	SHORTING STRAP			
12	2 EA	13069-0201	UHF DRIVER (TOP)			
11	2 EA	13069-0101	UHF DRIVER (BOTTOM)			
10	1	30752-0001	PARASITE EL ASS'Y			
6-8	2 EA	30754-0201	EL.+CAPACITOR ASS'Y L.H.			
7-9	2 EA	30754-0101	EL.+CAPACITOR ASS'Y R.H.			
2-4	2 EA	30753-0101	EL ASS'Y L.H.			
1-3-5	2 EA	30753-0201	EL ASS'Y R.H.			

SCALE: NONE
NO. REQ'D PER ASSEMBLY:
MATERIAL:
HEAT TREAT:
FINISH:

TOLERANCES UNLESS OTHERWISE SPECIFIED
FRACTIONAL ± 1/64
DECIMAL ± .005
ANGULAR ± 1/2°

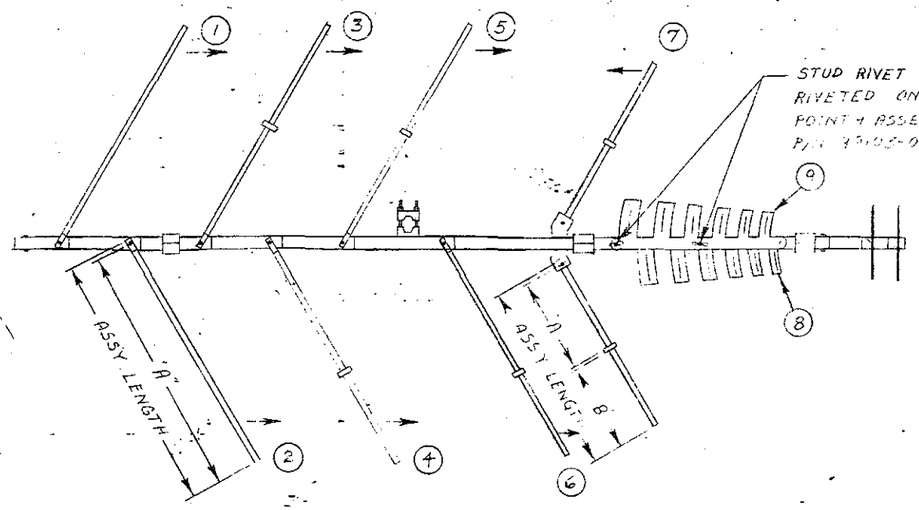
LPV-CL-600

DRAWN	CHECKED	ENG. APP.	PROD. APP.
J. FINCH			
7-19-66			

JFD ELECTRONICS CORP.
BROOKLYN 19, N.Y.

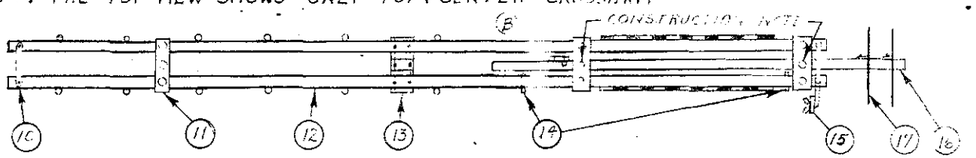
DATE OF PRINTING: DEC 13 1966
NEXT ASSEMBLY:
DRAWING NO.: 01013600

REV	DESCRIPTION	DATE	APP.
A	P/N 13404-1 WAS 13104-	5-27-66	
B	LENGTHENED CENTER & 44	10-25-66	



STUD RIVET P/N 13092-0361 TO BE RIVETED ONTO CROSSARM AT THIS POINT & ASSEMBLED WITH LOCKWASHER P/N 13092-0164 & WINGNUT P/N 13101-0201

FOR REASON OF CLARITY: THE TOP VIEW SHOWS ONLY TOP & CENTER CROSSARM



NOTE:

1. X-X TAKE OFF POINT
2. BOTTOM CROSSARM HAS STRAIN RELIEFS ATTACHED AS SHOWN - STRAIN RELIEFS TO BE POSITIONED PRIOR TO RIVETING EL. ASSY.
3. → INDICATES FOLDING ACTION OF ELEMENTS

ANT. CARTON SIZE — — — 105"X8"X6"
ANT. SHIPPING WEIGHT — — — APPROX LBS
ANT. WEIGHT — — — — — — APPROX LBS
OVERALL CROSSARM LENGTH — — — 102" LONG
TURNING RADIUS — — — — 52" RAD.
LONGEST ELEMENT TIP TO TIP — 92" LONG

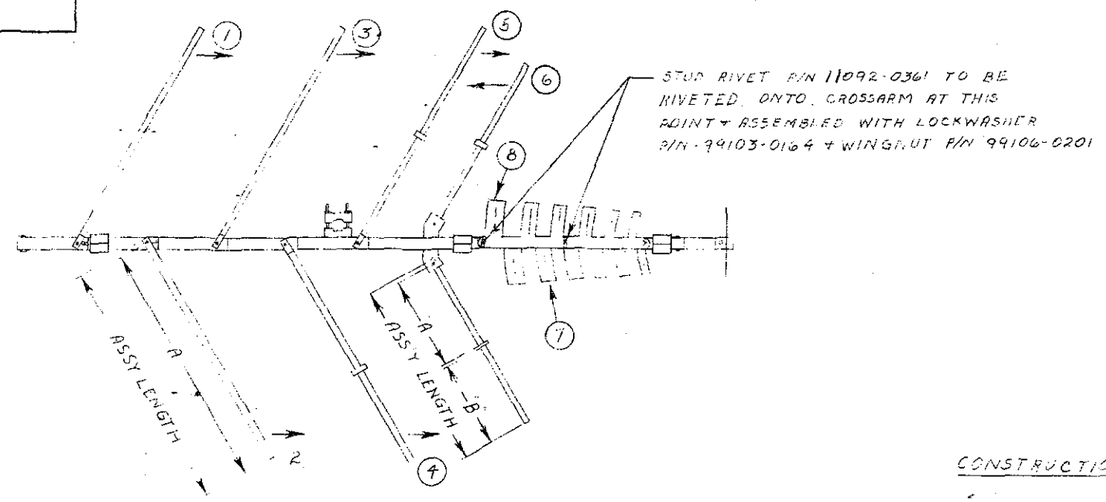
CONSTRUCTION NOTE: PRIOR TO ASS'Y OF CENTER CROSSARM TO ANTENNA AND PRIOR TO ATTACHING CENTER CROSSARM ELEMENTS, RIVET (1)EA. TRIPLE BOOM INSULATOR P/N 12992-0101 TO CENTER CROSSARM USING RIVET P/N 98101-1061 AS SHOWN.

00318

ITEM NO.	NO. REQ'D	PART NO.	DESCRIPTION	MATERIAL	SPECIFICATION	NOTE
17	2	12997-0001	UHF DISC	ALUM		
16	1	13404-0101	3/4 SQ TUBE CROSSARM			
15	1	30144-0001	TAPE WIRE ASS'Y			
14	2	13081-0601	STRAIN RELIEF POLY. COLOR ORANGE			
13	1	30751-0001	U-BOLT & INSULATOR ASS'Y			
12	2	13404-0001	3/4 SQ TOP & BOTTOM CROSSARM			
11	1	12992-0101	TRIPLE BOOM INSULATOR			
10	1	10258-0401	SHORTING STRAP			
9	1	13069-0101	UHF DRIVER TOP	ALUM		
8	1	13069-0201	UHF DRIVER BOTTOM	ALUM		
7	1	30752-0001	PARASITE EL. ASS'Y			
4-6	2 EA	30754-0201	EL. & CAPACITOR ASSY L.H.			
3-5	2 EA	30754-0101	EL. & CAPACITOR ASSY R.H.			
2	2EA	30753-0101	EL ASSY L.H.			
1	2EA	30753-0201	EL ASSY R.H.			

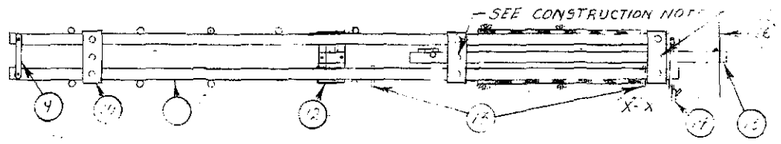
SCALE: NONE	TOLERANCES UNLESS OTHERWISE SPECIFIED FRACTIONAL ± 1/64 DECIMAL ± .005 ANGULAR ± 1:2°	LPV-CL 400		DATE OF PRINTING DEC 13 1966
NO. REQ'D PER ASSEMBLY: 2				NEXT ASSEMBLY
MATERIAL 2		DRAWN J HORNER 8-11-66	CHECKED	ENG. APP. PROD. APP.
HEAT TREAT 2				DRAWING NO.
FINISH 2		LFD ELECTRONICS CORP. BROOKLYN 19, N.Y.		01013400

REV.	DESCRIPTION	DATE	APP.
A	P/N 13407 WAS 12107 -	9-22-66	



STUD RIVET P/N 11092-0361 TO BE RIVETED ONTO CROSSARM AT THIS POINT & ASSEMBLED WITH LOCKWASHER P/N 99103-0164 & WINGNUT P/N 99106-0201

FOR REASON OF CLARITY: TOP VIEW SHOWS ONLY TOP & CENTER CROSSARM



CONSTRUCTION NOTE: PRIOR TO ASSY OF CENTER CROSSARM TO ANTENNA, AND PRIOR TO ATTACHING CENTER CROSSARM ELEMENTS RIVET (1) PR. TRIPLE BOOM INSULATOR P/N-12992-0101 TO CENTER CROSSARM USING RIVET P/N 99101-1061 AS SHOWN.

NOTE:
1. 'X'-'X' TAKE OFF POINT
2. BOTTOM CROSSARM HAS STRAIN RELIEFS ATTACHED AS SHOWN-STRAIN RELIEFS TO BE POSITIONED PRIOR TO RIVETING EL. ASSY
3. → INDICATES FOLDING ACTION OF ELEMENTS

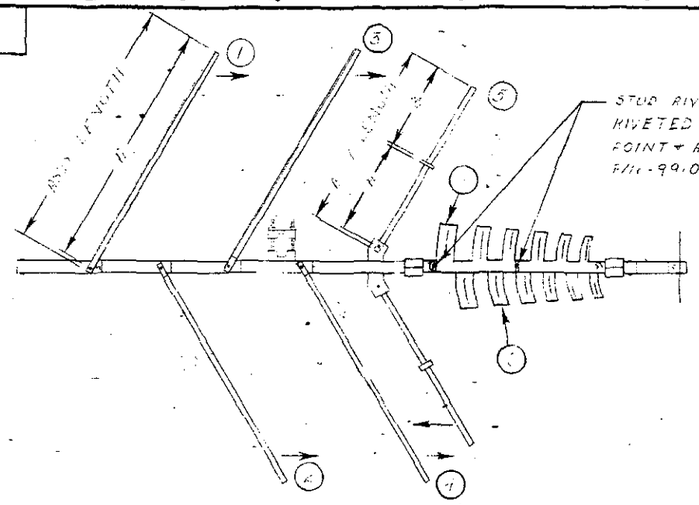
ANT CARTON SIZE — — — — — — — 25½" X 3" X 3"
ANT WEIGHT — — — — — — — APPROX 7½ LBS
SHIPPING WEIGHT — — — — — — — APPROX 10 LBS
OVERALL CROSSARM LENGTH — — — — 93" LONG
TURNING RADIUS — — — — — — 50" RAD.
LONGEST ELEMENT TIP TO TIP — 91" LONG

00317

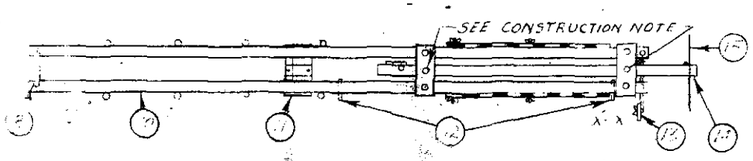
ITEM NO.	NO. REQ'D	PART NO.	DESCRIPTION	MATERIAL	SPECIFICATION	NOTE
16	1	12997-0001	UHF DRIVER	ALUM		
15	1	13407-0201	CENTER CROSSARM			
14	1	30744-0001	TAKE OFF WIRE ASS'Y			
13	2	13081-0001	STRAIN RELIEF POLY. COLOR ORANGE			
12	1	30751-0001	U-BOLT & INSULATOR ASS'Y			
11	2	13407-0101	3/4 SQ. TOP & BOTTOM CROSSARM			
10	6	12992-0101	TRIPLE BOOM INSULATOR			
9	1	10258-0401	SHORTING STRAP			
8	1	13049-0101	UHF DRIVER	ALUM	TOP	
7	1	13049-0201	UHF DRIVER	ALUM	BOTTOM	
6	1	30752-0001	PARASITE EL. ASS'Y			
5	2 EA	30754-0101	EL. & CAPACITOR ASS'Y R.H.			
4	2 EA	30754-0201	EL. & CAPACITOR ASS'Y L.H.			
2	2 EA	30753-0101	EL. ASS'Y L.H.			
1 & 3	2 PR	30753-0201	EL. ASS'Y R.H.			

SCALE: NONE	TOLERANCES UNLESS OTHERWISE SPECIFIED FRACTIONAL ± 1/64 DECIMAL ± .005 ANGULAR ± 1/2°	LPV-CL 300		DATE OF PRINTING DEC 1 8 1966	
NO. REQ'D PER ASSEMBLY: ~				NEXT ASSEMBLY	
MATERIAL: ~		DRAWN: T HOANCA	CHECKED	ENG. APP.	PROD. APP.
HEAT TREAT: ~		9-22-66			
FINISH: ~		JFD ELECTRONICS CORP. BROOKLYN 19, N.Y.		DRAWING NO.	C-113300

REV.	DESCRIPTION	DATE	APP.
A	REMOVED INSULATOR	8-26-66	
B	REVISED EL. SHEET	9-7-66	
C	P/N 13403 WAS 13163	9-27-66	



FOR REASON OF CLARITY: TOP VIEW SHOWS ONLY TOP & CENTER CROSSARM



CONSTRUCTION NOTE: PRIOR TO ASS'Y OF CENTER CROSSARM TO ANTENNA AND APPLY TO ATTACHING CENTER CROSSARM ELEMENTS RIVET REAR TRIPLE BOOM INSULATOR P/N-12992-0101 TO CENTER CROSSARM USING RIVET P/N 99101-1061 AS SHOWN.

NOTE:
1. "X-X" TAKE OFF POINT
2. BOTTOM CROSSARM HAS STRAIN RELIEFS ATTACHED AS SHOWN-STRAIN RELIEFS TO BE POSITIONED PRIOR TO RIVETING EL. ASS'Y
3→ INDICATES FOLDING ACTION OF ELEMENTS

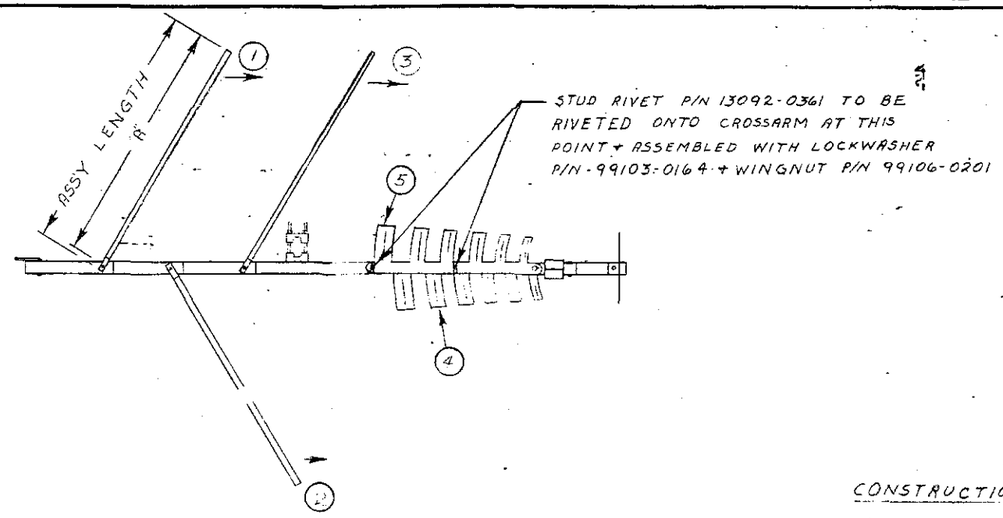
ANT CARTON SIZE — — — — — — — — 14"X8"X6"
ANT WEIGHT — — — — — — — — APPROX 7 LBS
SHIPPING WEIGHT — — — — — — — — APPROX 9½ LBS
OVERALL CROSSARM LENGTH — — — — — 80"LONG
TURNING RADIUS — — — — — — — — 50" RAD.
LONGEST ELEMENT TIP TO TIP — 68" LONG

00316

ITEM NO.	NO. REQ'D	PART NO.	DESCRIPTION	MATERIAL	SPECIFICATION	NOTE
15	1	12997-0001	UHF REF. ALUM			
14	1	13403-0101	CENTER CROSSARM			
13	1	30744-0001	TAKE OFF WIRE ASS'Y			
12	2	13081-0001	STRAIN RELIEF POLY. COLOR ORANGE			
11	1	30751-0001	U-BOLT & INSULATOR ASS'Y			
10	2	13403-0201	3/4 SQ. TOP & BOTTOM CROSSARM			
9	4	12992-0101	TRIPLE BOOM INSULATOR			
8	1	10258-0401	SHORTING STRAP			
7	1	13069-0101	UHF DRIVER TOP ALUM			
6	1	13069-0201	UHF DRIVER BOTTOM ALUM			
5	1	30752-0001	PARASITE EL. ASS'Y			
2+4	2 ER	30753-0101	EL. ASS'Y L.H.			
1+3	2 PR	30753-0201	EL. ASS'Y RH.			

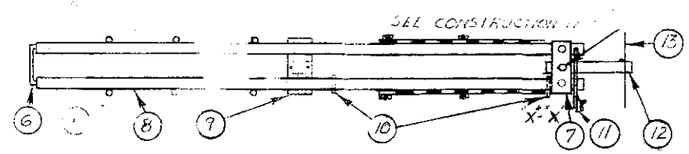
SCALE: NONE	TOLERANCES UNLESS OTHERWISE SPECIFIED FRACTIONAL ± 1/64 DECIMAL ± .005 ANGULAR ± 1/2°	LPV-CL 200	DATE OF PRINTING DEC 19 1966
NO. REQ'D PER ASSEMBLY:		DRAWN J NOAMEA 7-22-66 / CHECKED / ENG. APP. / PROD. APP.	NEXT ASSEMBLY
MATERIAL:		JFD ELECTRONICS CORP. BROOKLYN 19, N.Y.	DRAWING NO. 01013200
HEAT TREAT:			
FINISH:			

REV.	DESCRIPTION	DATE	APP.
A	REMOVED INSULATOR	8-26-66	



STUD RIVET P/N 13092-0361 TO BE RIVETED ONTO CROSSARM AT THIS POINT + ASSEMBLED WITH LOCKWASHER P/N-99103-0164 + WINGNUT P/N 99106-0201

FOR REASON OF CLARITY: TOP VIEW SHOWS ONLY TOP + CENTER CROSSARM



CONSTRUCTION NOTE: PRIOR TO ASS'Y OF CENTER CROSSARM TO ANTENNA AND PRIOR TO ATTACHING CENTER CROSSARM ELEMENTS RIVET (1)EA. TRIPLE BOOM INSULATOR P/N-12992-0101 TO CENTER CROSSARM USING RIVET P/N 99101-1061 AS SHOWN.

NOTE:
1. 'X'-'X' TAKE OFF POINT
2. BOTTOM CROSSARM HAS STRAIN RELIEFS ATTACHED AS SHOWN-STRAIN RELIEFS TO BE POSITIONED PRIOR TO RIVETING EL. ASS'Y
3 → INDICATES FOLDING ACTION OF ELEMENTS

ANT CARTON SIZE — — — — — — — 62"X8"X6"
ANT WEIGHT — — — — — — — — APPROX 6 LBS
SHIPPING WEIGHT — — — — — — — APPROX 8 LBS
OVERALL CROSSARM LENGTH — — — — — 55 LONG
TURNING RADIUS — — — — — — — 50" RAD.
LONGEST ELEMENT TIP TO TIP — 90" LONG

00315

ITEM NO.	NO. REQ'D	PART NO.	DESCRIPTION	MATERIAL	SPECIFICATION	NOTE
13	1	12997-0001	UHF-DISC	ALUM		
12	1	13100-0201	CENTER CROSSARM			
11	1	30744-0001	TAKE OFF WIRE ASS'Y			
10	2	13081-0001	STRAIN RELIEF POLY. COLOR ORANGE			
9	1	30751-0001	U-BOLT + INSULATOR ASS'Y			
8	2	13100-0101	3/4 SQ. TOP + BOTTOM CROSSARM			
7	2	12992-0101	TRIPLE BOOM INSULATOR			
6	1	13097-0101	SHORTING TAB	ALUM		
5	1	13069-0101	UHF DRIVER	ALUM	TOP	
4	1	13069-0201	UHF DRIVER	ALUM	BOTTOM	
2	2 EA	30753-0101	EL. ASS'Y L.H.			
1+3	2 EA	30753-0201	EL. ASS'Y R.H.			

SCALE: NONE
NO. REQ'D PER ASSEMBLY:
MATERIAL:
HEAT TREAT:
FINISH:
TOLERANCES UNLESS OTHERWISE SPECIFIED: FRACTIONAL ± 1/64, DECIMAL ± .005, ANGULAR ± 1/2°

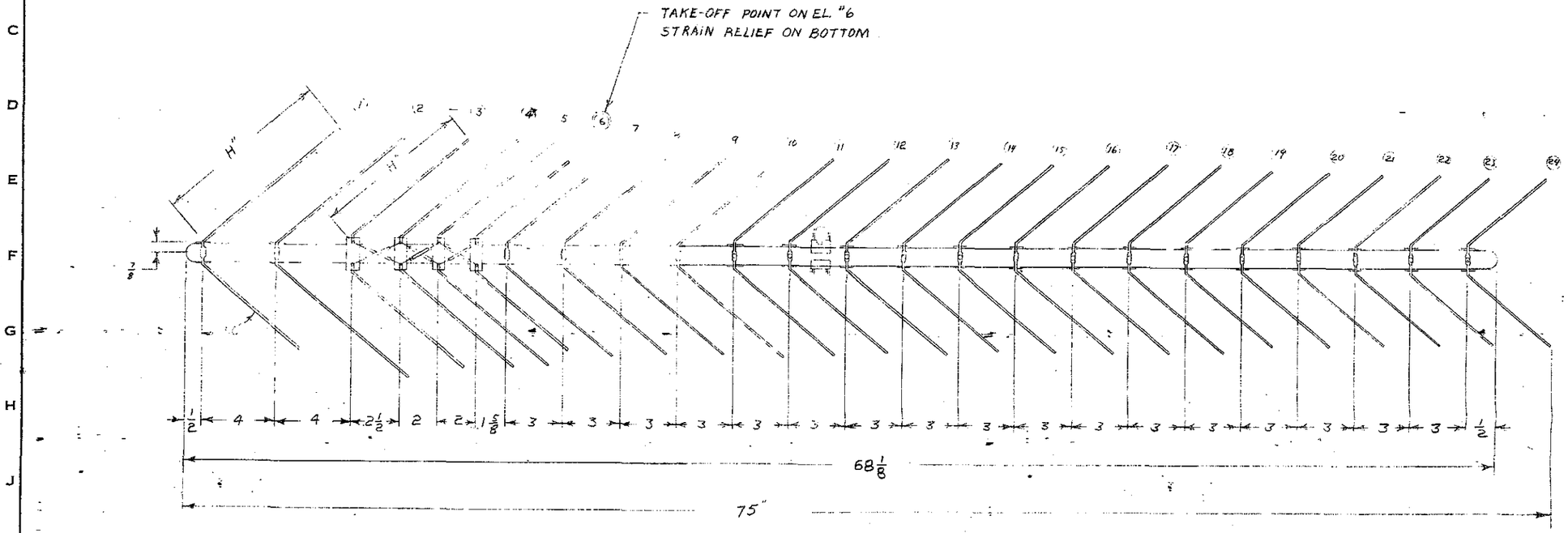
LPV-CL 100

DRAWN	CHECKED	ENG. APP.	PROD. APP.
J. HORNER 7-22-66			

JFD ELECTRONICS CORP.
BROOKLYN 19, N.Y.

DATE OF PRINTING: DEC 13 1966
NEXT ASSEMBLY:
DRAWING NO.: 01013100

REV.	DESCRIPTION	DATE	APP.



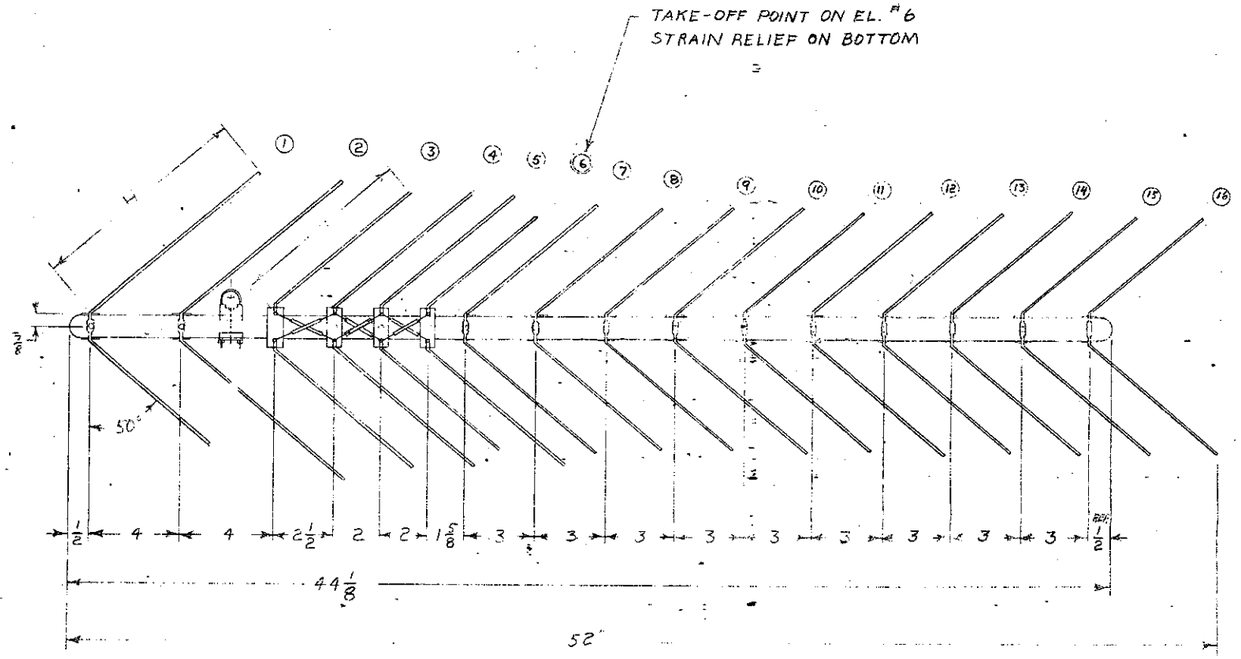
00314

Prov 76" Lg

ITEM NO.	NO. REQ'D	PART NO.	DESCRIPTION	MATERIAL	SPECIFICATION	NOTE

SCALE: NONE	TOLERANCES UNLESS OTHERWISE SPECIFIED FRACTIONAL ± 1/64 DECIMAL ± .005 ANGULAR ± 1/2°	LPV-TR22 - ASS'Y D.W.G.		DATE OF PRINTING DEC 1 3 1966
NO. REQ'D PER ASSEMBLY: ~				NEXT ASSEMBLY
MATERIAL: ~		DRAWN: W M M	CHECKED	ENG. APP. / PROD. APP.
HEAT TREAT: ~		9-27-65		DRAWING NO.
FINISH: ~		JFD ELECTRONICS CORP. BROOKLYN 19, N.Y.		55100

REV.	DESCRIPTION	DATE	APP.



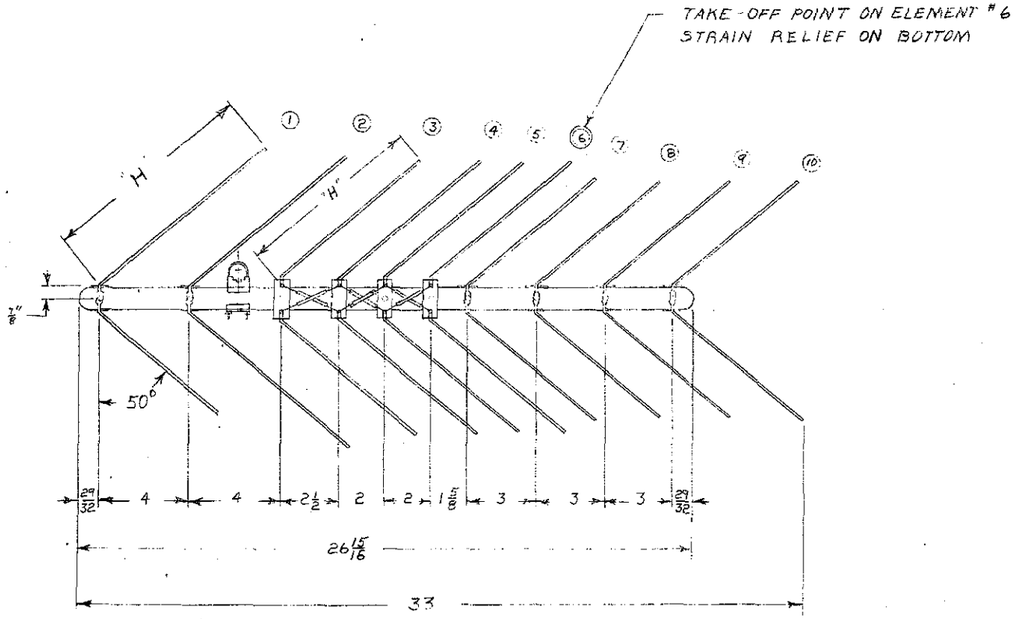
00313

52 Eq

ITEM NO.	NO. REQ'D	PART NO.	DESCRIPTION	MATERIAL	SPECIFICATION	NOTE

SCALE: NONE	TOLERANCES UNLESS OTHERWISE SPECIFIED FRACTIONAL ± 1/64 DECIMAL ± .005 ANGULAR ± 1/2°	LPV-TR16 ASS'Y D.W.G.		DATE OF PRINTING DEC 13 1966
NO. REQ'D PER ASSEMBLY:				NEXT ASSEMBLY
MATERIAL: ~	DRAWN: W M M 9-27-65	CHECKED	ENG. APP.	PROD. APP.
HEAT TREAT: ~				DRAWING NO.
FINISH: ~	JFD ELECTRONICS CORP. BROOKLYN 19, N.Y.			55110

REV.	DESCRIPTION	DATE	APP.



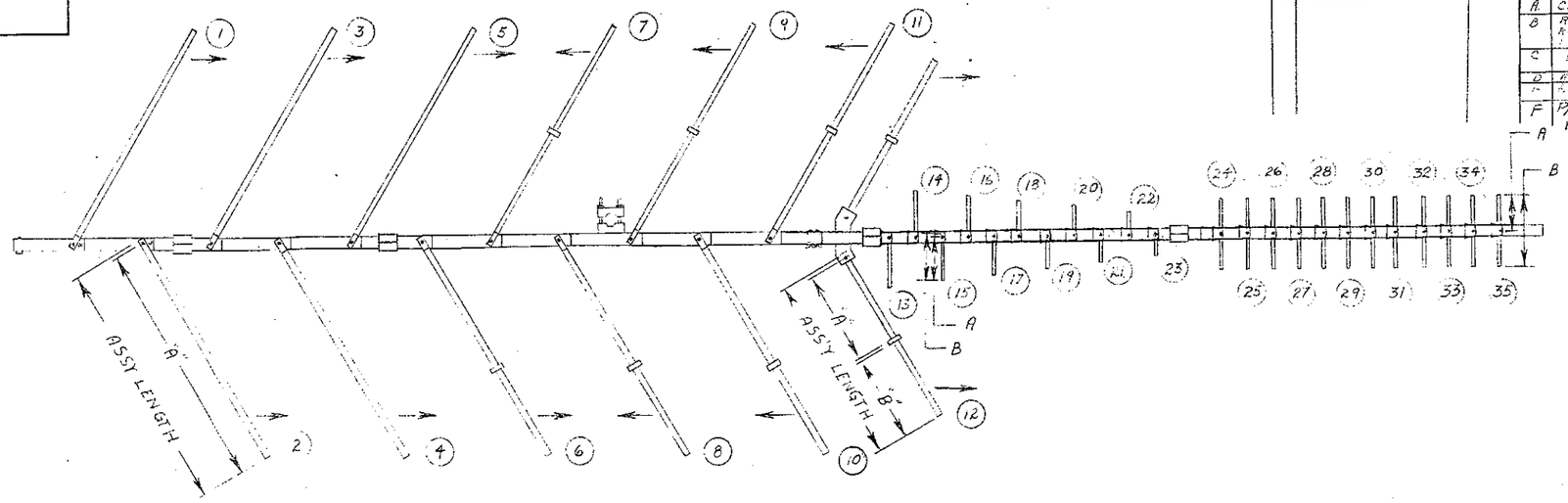
00312

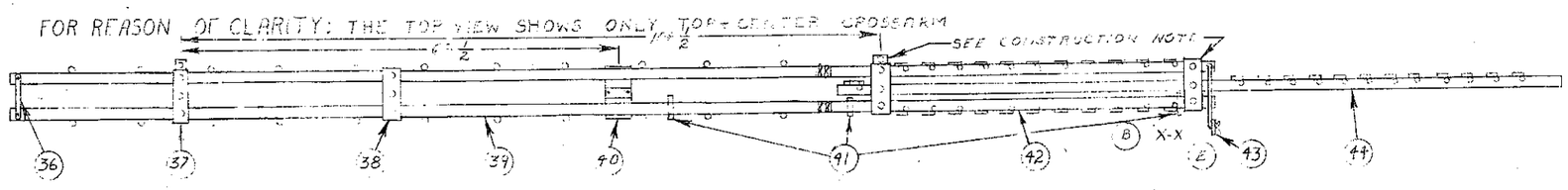
DEC 13 1966

ITEM NO.	NO. REQ'D	PART NO.	DESCRIPTION	MATERIAL	SPECIFICATION	NOTE

SCALE: N-NE	TOLERANCES UNLESS OTHERWISE SPECIFIED FRACTIONAL ± 1/64 DECIMAL ± .005 ANGULAR ± 1/2°	LPV-TRIO ASS'Y D.W.G.	DATE OF PRINTING DEC 13 1966
NO. REQ'D PER ASSEMBLY:			NEXT ASSEMBLY
MATERIAL:		DRAWN: WMM 9-27-65 / CHECKED / ENG. APP. / PROD. APP.	DRAWING NO.
HEAT TREAT:		JFD ELECTRONICS CORP. BROOKLYN 19, N.Y.	55090
FINISH:			

REV.	DESCRIPTION	DATE	APP.
A	CLARIFIED UHF WIRE BRT.	8-3-66	
B	REMOVED 2.8" SQ. SPACERS; RELOCATION OF BOOM CLAMP INSULATOR 70 WAS 60	7-7-66	
C	BOOM BRACE DIM. 66 1/2" 106" WAS 70" WT.	9-10-66	
D	ADDED STRAIN RELIEF	9-19-66	
E	ADDED TRIM OFF NOTE	10-18-66	
F	P/N 13420-WAS 13120-13421 - WAS 13121	12-27-66	
G	REVISED ANT. SIZE WT.	11-10-66	





NOTE: 1. FOR BOOM STYLE SEE JFD DWG. NO. 34-0701
2. X-X TYP. FOR ALL
3. BOTTOM CROSSARM UNITS SHALL BE SUPPLIED AS SHOWN - STRAIN RELIEFS TO BE INSTALLED AS TO ELEMENT NO. 1
4 → INDICATES FOLDING DIRECTION OF ELEMENTS

ANT. CENTER LINE	18" ABOVE (G)
ANT. WEIGHT	APPROX 12 LBS
ANT. SHIPPING WT.	APPROX 13 LBS
OVERALL LENGTH	206" LONG
SHIPPING HEIGHT	107" APX.
LONG. SHIPPING BOX	92" LONG

CONSTRUCTION NOTE: PRIOR TO INSTALLATION OF CENTER CROSSARM TO DYNA-PAR AND PRIOR TO INSTALLATION OF CENTER CROSSARM ELEMENTS, SLIDE TWO 2" PIECES OF INSULATION P/N 12992-0101 TO CENTER CROSSARM USING ANTI SEIZE COMPOUND P/N 99101-1061 AS SHOWN.

ITEM NO.	NO. REQ'D	PART NO.	DESCRIPTION	MATERIAL	SPECIFICATION	NOTE
NOT SHOWN	1	30149-0001	BOOM BRACE ASSY			
NOT SHOWN	1	30755-0101	HARDWARE PAK			
44	1	13420-0301	3/4 SQ CENTER CROSSARM			00311
43	1	30744-0001	TAKE OFF WIRE ASSY			
42	2	13420-0201	3/4 SQ TOP + BOTTOM CROSSARM			
41	3	13081-0001	STRAIN RELIEF POLY. COLOR UNPAINT			
40	1	30751-0001	U-BOLT + INSULATOR ASSY			
39	2	13420-0101	3/4 SQ TOP + BOTTOM CROSSARM			
38	4	12992-0101	TRIPLE BOOM INSULATOR			
37	4	12992-0001	TRIPLE BOOM INSULATOR FOR BOOM BRACE			
36	1	10258-0401	SHORTING STRAP			
24 THRU 35	1 EA	30750-0101	DOUBLE UHF w/WIRE EL. ASSY			
13 THRU 23	2 EA	30750-0001	SINGLE UHF WIRE EL. ASSY			
12	1	30752-0001	PARASITE EL. ASSY			
6-8-10	2 EA	30754-0201	EL + CAPACITOR ASSY L.H.			
7-9-11	2 EA	30754-0101	EL + CAPACITOR ASSY R.H.			
2-4	2 EA	30753-0101	EL ASSY L.H.			
1-3-5	2 EA	30753-0201	EL ASSY R.H.			

SCALE: NONE
NO. REQ'D PER ASSEMBLY:
MATERIAL:
HEAT TREAT:
FINISH:

TOLERANCES UNLESS OTHERWISE SPECIFIED
FRACTIONAL ± 1/64
DECIMAL ± .005
ANGULAR ± 1/2°

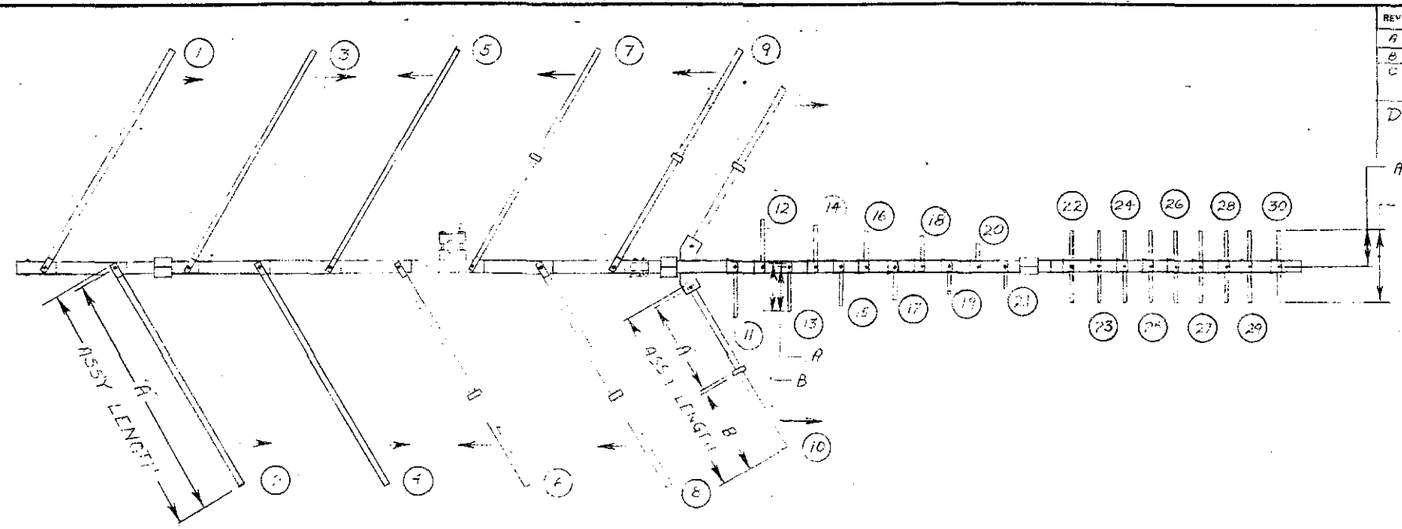
LPV-VU 180

DRAWN	CHECKED	ENG. APP.	PROD. APP.

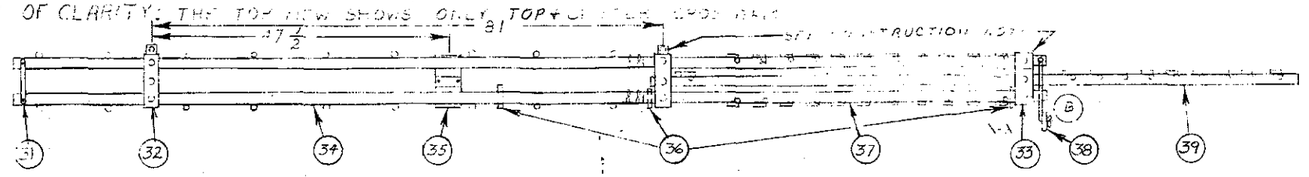
JFD ELECTRONICS CORP.
BROOKLYN 19, N.Y.

DATE OF PRINTING: DEC 14 1966
NEXT ASSEMBLY:
DRAWING NO. 01012180

REV	DESCRIPTION	DATE	APP.
A	ADD [illegible] BRACE	8-17-66	
B	ROTATED TAKE OFF 180°	8-18-66	
C	P/N 13422-WAS 13122- 13421 WAS 13121-	9-27-66	
D			



FOR REASON OF CLARITY: THE TOP VIEW SHOWS ONLY TOP & BOTTOM BOOM BRACE



NOTE: 1. FOR BOOM BRACE SEE DRAWING NO. 13421-0401
2. X-X TAKE OFF POINT
3. BOTTOM CROSSARM AND SHORTING STRAP ARE ATTACHED AS SHOWN. STRAPS TO BE POSITIONED PRIOR TO RIVETING EL ASSY
4. → INDICATES FOLDING ACTION OF ELEMENTS

ANT. CARTON SIZE — — — 107½"x6"x6"
ANT. SHIPPING WEIGHT — — APPROX 15 LBS
ANT. WEIGHT — — — — — APPROX 12 LBS
OVERALL CROSSARM LENGTH — — 164 LONG
TURNING RADIUS — — — — 91½ RAD.
LONGEST ELEMENT TIP TO TIP — 92 LONG

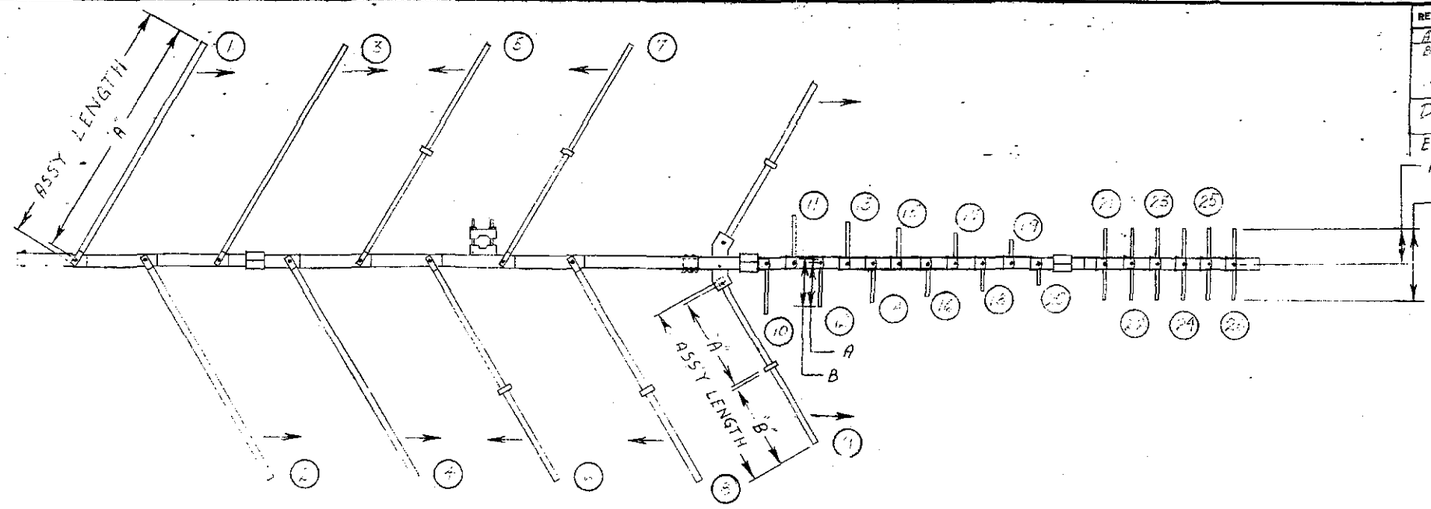
CONSTRUCTION NOTE: PRIOR TO ASS'Y OF CENTER CROSSARM TO DYNA-PAK, AND PRIOR TO ATTACHING CENTER CROSSARM ELEMENTS RIVET (1)EA. TRIPLE BOOM INSULATOR P/N-12992-0101 TO CENTER CROSSARM USING RIVET P/N 99101-1061 AS SHOWN.

00310

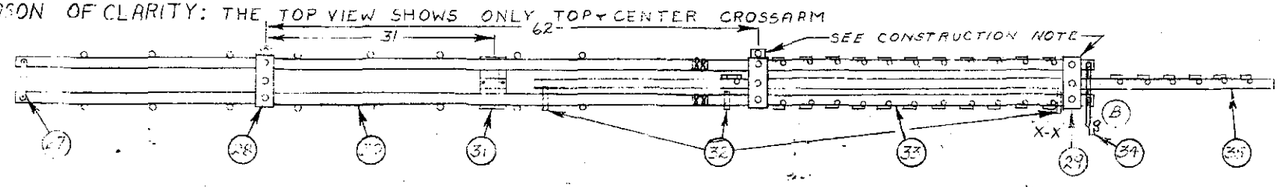
ITEM NO	NO. REQ'D	PART NO.	DESCRIPTION	MATERIAL	SPECIFICATION	NOTE
NOT SHOWN	1	30749-0001	[illegible]			
NOT SHOWN	1	30755-0101	[illegible]			
39	1	13422-0301	3/4 SQ. CENTER CROSSARM			
38	1	30749-0001	TAKE OFF BRACE ASSY			
37	2	13422-0201	5/8 SQ. TOP CROSSARM			
26	3	13021-0401	STRAP LOW POLY CURVE CHANGE			
35	1	30751-0001	U-BOLT + INSULATOR ASSY			
34	2	13422-0101	5/8 SQ. TOP + BOTTOM CROSSARM			
33	2	12992-0101	TRIPLE BOOM [illegible]			
32	4	12992-0001	TRIPLE BOOM INSULATOR FOR BOOM BRACE			
31	1	10258-0401	SHORTING STRAP			
22 THRU 30	1 EA	30750-0101	DOUBLE UHF WIRE EL ASS'Y			
11 THRU 21	2 EA	30750-0001	SINGLE UHF WIRE EL. ASS'Y			
10	1	30752-0001	PARASITE EL ASS'Y			
6-8	2 LH	30754-0201	EL + CAPACITOR ASS'Y L.H.			
7-9	2 EA	30754-0101	EL + CAPACITOR ASS'Y R.H.			
2-4	2 LA	30753-0101	EL ASS'Y L.H.			
1-3-5	2 EA	30753-0201	EL ASS'Y R.H.			

SCALE: NONE	TOLERANCES UNLESS OTHERWISE SPECIFIED FRACTIONAL ± 1/64 DECIMAL ± .005 ANGULAR ± 1/2°	LPV-VU 150		DATE OF PRINTING DEC 14 1966
NO. REQ'D PER ASSEMBLY: (X)				NEXT ASSEMBLY
MATERIAL: ( )		DRAWN: J HORNER, 8-11-66	CHECKED / ENG. APP. / PROD. APP.	DRAWING NO.
HEAT TREAT: ( )		JFD ELECTRONICS CORP. BROOKLYN, N.Y.		01012150
FINISH: (X)				

REV.	DESCRIPTION	DATE	APP.
A	STRAIN RELIEF ADDED	8-19-66	
B	ROTATED TAKE OFF ASSY P/N 30746 180° P/N 30746 MADE 13116	9-27-66	
D	ADDED [illegible] TO CENTER CROSSARM; ITEM #35	10-18-66	RON GRANT
E	REVISED ANT. CARTON SIZE & ANT. SHIPPING WT.	11-10-66	



FOR REASON OF CLARITY: THE TOP VIEW SHOWS ONLY TOP CENTER CROSSARM



NOTE:
1. FOR BOOM BRACE SEE JFD DWG NO. 13421-0101
2. X-X TAKE OFF POINT
3. BOTTOM CROSSARM HAS STRAIN RELIEFS ATTACHED AS SHOWN - STRAIN RELIEFS TO BE POSITIONED PRIOR TO RIVETING EL. ASS'Y.
4. → INDICATES FOLDING ACTION OF ELEMENTS

ANT. CARTON SIZE — — — — 7" "X 6¼"X 6¼" (E)
ANT. SHIPPING WEIGHT — — — APPROX [illegible] LBS
ANT. HEIGHT — — — — — — APPROX [illegible] LBS.
OVERALL CROSSARM LENGTH — — — [illegible]"LONG
TURNING RADIUS — — — — 91½"RAD.
LONGEST ELEMENT TIP TO TIP — 92½"LONG

CONSTRUCTION NOTE: PRIOR TO ASS'Y OF CENTER CROSSARM TO DYNA-PAK, AND PRIOR TO ATTACHING CENTER CROSSARM ELEMENTS, RIVET (1EA. IN) L BOOM INSULATION P/N 12992-0101 TO CENTER CROSSARM USING RIVET P/N 99101-1061 AS SHOWN.

00309

ITEM NO.	NO. REQ'D	PART NO.	DESCRIPTION	MATERIAL	SPECIFICATION	NOTE
NOT SHOWN	1	30749-0001	BOOM BRACE ASS'Y			
NOT SHOWN	1	30755-0101	HARDWARE BAG			
35	1	13416-0301	3/4 SQ CENTER CROSSARM			
34	1	30744-0001	TAKE OFF WIRE ASS'Y			
33	2	13416-0201	3/4 SQ TOP + BOTTOM CROSSARM			
32	3	13081-0001	STRAIN RELIEF POLY. COLOR ORANGE			
31	1	30751-0001	U-BOLT + INSULATOR ASS'Y			
30	2	13416-0101	3/4 SQ TOP + BOTTOM CROSSARM			
29	1	12992-0101	TRIPLE BOOM INSULATOR			
28	4	12992-0001	TRIPLE BOOM INSULATOR FOR BOOM BRACE			
27	1	10258-0401	SHORTING STRAP			
21 THRU 26	1 EA	30750-0101	DOUBLE UHF WIRE EL. ASS'Y			
10 THRU 20	2 EA.	30750-0001	SINGLE UHF WIRE EL. ASS'Y			
9	1	30752-0001	PARASITE EL. ASS'Y			
6-8	2 EA	30754-0201	EL. + CAPACITOR ASSY L.H.			
5-7	2 EA	30754-0101	EL. + CAPACITOR ASSY R.H.			
2-4	2EA	30753-0101	EL. ASSY L.H.			
1-3	2EA	30753-0201	EL. ASSY R.H.			

SCALE: NONE
NO. REQ'D PER ASSEMBLY: ~
MATERIAL: ~
HEAT TREAT: ~
FINISH: ~

TOLERANCES UNLESS OTHERWISE SPECIFIED
FRACTIONAL ± 1/64
DECIMAL ± .005
ANGULAR ± 1/2°

LPV-VU 120

DRAWN	CHECKED	ENG. APP.	PROD. APP.
J. PARKER 7-29-66			

JFD ELECTRONICS CORP.
BROOKLYN 19, N. Y.

DATE OF PRINTING: DEC 14 1966
NEXT ASSEMBLY:
DRAWING NO.: 01012120

REV	DESCRIPTION	DATE	APP.
A	ROTATED EL. ASSY 1/8 IRON SHOWING END OF UNIT	5-12-66	
B	ADDED STRAIN RELIEF ROTATED TAKE OFF ASSY 180°	8-18-66	
C	ADDED STRAIN RELIEF	8-17-66	
D	ROTATED TAKE OFF ASSY 180°	8-18-66	
E	P/N 13402-WAS 13102-	9-27-66	

F	CENTER CROSSARM LENGTHENED BY 10". DIM CHANGED E. 2 1/4	10-25-66	
G	REVISED ANT. CARTON SIZE & ANT. SHIP WT.	11-10-66	

ASSEMBLE 30721 10 CENTER CROSSARM WITH OPEN END OF BRACKET TOWARDS REAR

FOR REASON OF CLARITY: THE TOP VIEW SHOWS ONLY TOP OF [illegible] CROSS ARM

SEE MATERIAL BY NOTE

NOTE:

1. X-X TAKE OFF POINT
2. BOTTOM CROSSARM AND STRAIN RELIEF WITH [illegible] SHOWN - STRAIN RELIEFS TO BE INSTALLED 2 FT TO RIVETING OF ASSY
3. ➔ INDICATES SOLDERING NOTCH ON ELEMENT

ANT. CARTON SIZE — 122" X 9 1/4 X 6 1/4" (G)
ANT. SHIP WT. — APPROX 11 LBS
ANT. UNIT WT — APPROX 10 LBS
OVERALL CROSSARM LENGTH — [illegible]
TURNING RADIUS — [illegible] RAD.
LONGEST ELEMENT TIP — 12 1/2" LG. G

ASSY OF LPV-VU 90 FOR 50 Ω FEEDER FROM TRANSMITTER TO ANTENNA
INCLUDES ALL PARTS REQUIRED TO INSTALL ELEMENTS TO TRANSMISSION LINE AS PER IR492 0101
TO INSTALL TRANSMISSION LINE AS PER 79101-1061

ITEM NO.	NO. REQ'D	PART NO.	DESCRIPTION	MATERIAL	SPECIFICATION	NOTE
22	1	13492-0101	3/4 SQ. ROTATION CROSSARM			
1	1	30744-0001	TAKE OFF WIRE ASSY			
2	3	13021-0001	STRAIN RELIEF POLY. COLOR ORANGE			
25	1	30751-0001	U-BOLT + INSULATOR ASSY			
4	2	[illegible]	3/4 SQ TOP + BOTTOM CROSSARM			
7	2	12992-0101	TRIPLE BOOM INSULATOR			
8	1	10258-0401	SHORTING STRAP			
9 THRU 12	1 EA	30750-0101	DOUBLE UHF WIRE EL. ASSY			
3 THRU 5	2 EA	30750-0001	SINGLE UHF WIRE EL. ASSY			
6	1	30752-0001	PARASITE EL. ASSY			
14	2 EA	30754-0201	EL. + CAPACITOR ASSY L.H.			
13	2 EA	30754-0101	EL. + CAPACITOR ASSY R.H.			
16	2 EA	30753-0101	EL ASSY L.H.			
15	2 EA	30753-0201	EL ASSY R.H.			

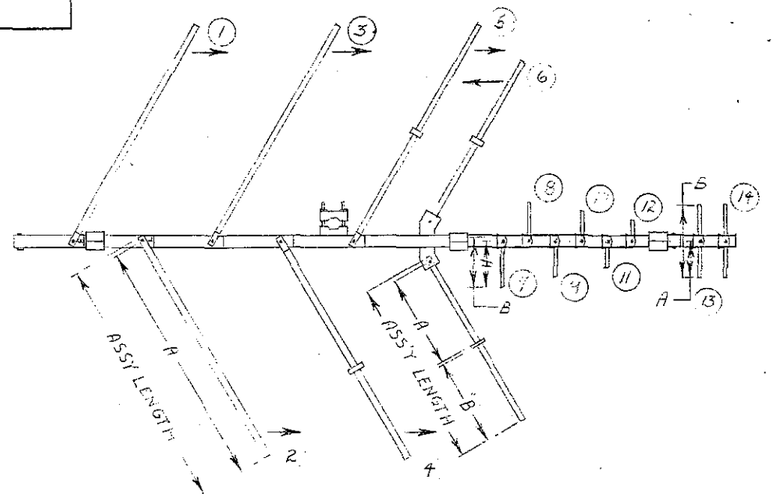
DEC 1 4 1966

00368

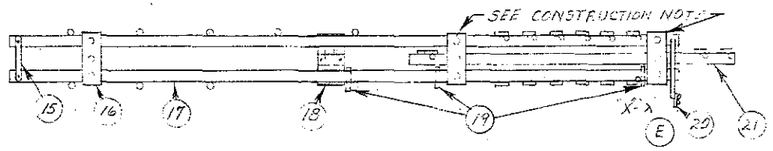
SCALE: NONE	TOLERANCES UNLESS OTHERWISE SPECIFIED FRACTIONAL ± 1/64 DECIMAL ± .005 ANGULAR ± 1/2°	LPV-VU 90	DATE OF PRINTING DEC 1 4 1966
NO. REQ'D PER ASSEMBLY: AS REQ'D		DRAWN: J HANNA 8-11-66	NEXT ASSEMBLY
MATERIAL: AS REQ'D		CHECKED	DRAWING NO.
HEAT TREAT: AS REQ'D		ENG. APP.	
FINISH: AS REQ'D		PROD. APP.	01012090

JFD ELECTRONICS CORP.

REV.	DESCRIPTION	DATE	APP.
A	"U" BOLT ROTATES 180°	8-1-66	
B	CLARIFY [illegible] W. P.O.	8-3-66	
C	ONE STRAIN RELIEF RE 180° & 3-CC		
D	ADD 2 STRAIN RELIEF	9-7-66	
E	ROTATE TAKE OFF ASSY 180°	9-18-66	
F	P/N 13405 WAS 13105	9-27-66	
G	REVISED APPLICATION SHT. 1 SH. WT.	11-14-66	



FOR REASON OF CLARITY: TOP VIEW SHOWS ONLY TOP + CENTER CROSSARM



CONSTRUCTION NOTE: PRIOR TO ASSY OF CENTER CROSSARM TO ANTENNA AND PRIOR TO ATTACH OF CENTER CROSSARM ELEMENTS REMOVE TRIPLE BOOM INSULATOR P/N 12992-0101 TO CENTER CROSSARM USING RIVET P/N 99101-1061 IN 3 PLACES.

NOTE:
1. 'X'-'X' TAKE OFF POINT
2. BOTTOM CROSSARM HAS STRAIN RELIEFS ATTACHED AS SHOWN - STRAIN RELIEFS TO BE POSITIONED PRIOR TO RIVETING EL. ASS'Y
3 → INDICATES FOLDING ACTION OF ELEMENTS

ANT CARTON SIZE — — — — — — 98 X 6½ X 6¼
ANT WEIGHT — — — — — — — APPROX 5 3/4 LBS
SHIPPING WEIGHT — — — — — — APPROX 9 LBS
OVERALL CROSSARM LENGTH — — — — 94" LONG
TURNING RADIUS — — — — — — 56½" RAD.
LONGEST ELEMENT TIP TO TIP — 91" LONG

00307

ITEM NO.	NO. REQ'D	PART NO.	DESCRIPTION	MATERIAL	SPECIFICATION	NOTE
21	1	13405-0101	CENTER CROSSARM			
20	1	30744-0001	TAKE OFF WIRE ASS'Y			
19	3	13081-0001	STRAIN RELIEF POLY. COLOR ORANGE			
18	1	30751-0001	U-BOLT + INSULATOR ASS'Y			
17	2	13405-0001	3/4 SQ. TUP BOTTOM CROSSARM			
16	6	12992-0101	TRIPLE BOOM INSULATOR			
15	1	10258-0401	SHORT NO STRIP			
13+14	1 EA	30750-0101	DOUBLE UHF WIRE EL. ASS'Y			
7,8,9,10,11,12	2 EA	30750-0001	SINGLE UHF WIRE EL. ASS'Y			
6	1	30752-0001	PARASITIC EL. ASS'Y			
5	2 EA	30754-0101	EL + CAPACITOR ASS'Y R.H.			
4	2 EA	30754-0201	EL. + CAPACITOR ASS'Y L.H.			
2	2 EA	30753-0101	EL. ASS'Y L.H.			
1+3	2 EA	30753-0201	EL. ASS'Y R.H.			

SCALE: NONE
NO. REQ'D PER ASSEMBLY:
MATERIAL:
HEAT TREAT:
FINISH:

TOLERANCES UNLESS OTHERWISE SPECIFIED
FRACTIONAL ± 1/64
DECIMAL ± .005
ANGULAR ± 1/2°

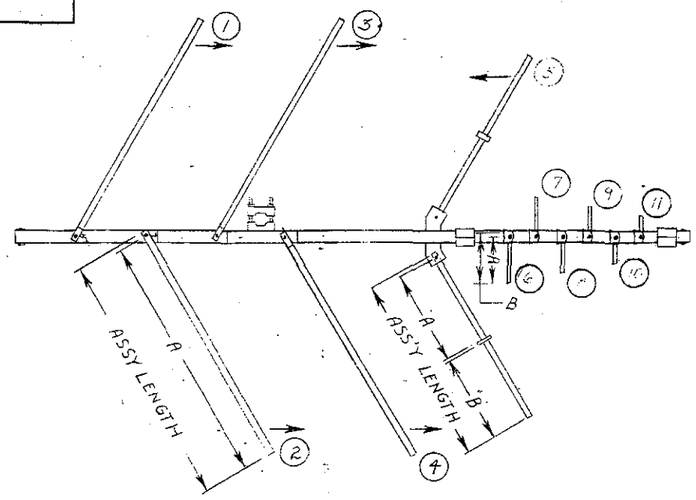
LPV-VU-60

DRAWN	CHECKED	ENG. APP.	PROD. APP.
I. FRANK 7-22-66			

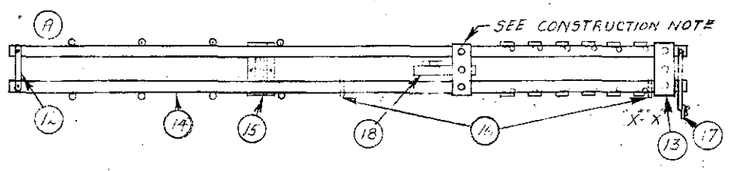
JFD ELECTRONICS CORP.
BROOKLYN 19, N.Y.

DATE OF PRINTING: DEC 14 1966
NEXT ASSEMBLY:
DRAWING NO. 0101206

REV.	DESCRIPTION	DATE	APP.
A	REMOVED INSULATOR	8-26-66	
B	CL "A" WAS 5 1/4 AND 52 1/8	8-31-66	
C	CHANGED EL LENGTHS 1, 2, 3, 4	10-13-66	
D	REVISED ANT. CARTON SIZE	11-10-66	



FOR REASON OF CLARITY: TOP VIEW SHOWS ONLY TOP + CENTER CROSSARM



CONSTRUCTION NOTE: PRIOR TO ASS'Y OF CENTER CROSSARM TO ANTENNA AND PRIOR TO ATTACHING CENTER CROSSARM ELEMENTS, RIVET (1) EA. TRIPLE BOOM INSULATOR P/N-12992-0101 TO CENTER CROSSARM USING RIVET P/N 99101-1061 AS SHOWN.

NOTE:
1. "X"-"X" TAKE OFF POINT.
2. BOTTOM CROSSARM HAS STRAIN RELIEFS ATTACHED AS SHOWN. STRAIN RELIEFS TO BE POSITIONED PRIOR TO RIVETING EL. ASSY
3 → INDICATES FOLDING ACTION OF ELEMENTS

ANT CARTON SIZE — — — — — 72" X 6 1/4" X 6 1/4"
ANT WEIGHT — — — — — — — APPROX — LBS
SHIPPING WEIGHT — — — — — — APPROX — LBS
OVERALL CROSSARM LENGTH — — — — — 71" LONG
TURNING RADIUS — — — — — — 59" RAD.
LONGEST ELEMENT TIP TO TIP — 88" LONG

00366

ITEM NO.	NO. REQ'D	PART NO.	DESCRIPTION	MATERIAL	SPECIFICATION	NOTE
18	1	13090-0101	CENTER CROSSARM			
17	1	30744-0001	TAKE OFF WIRE ASS'Y			
16	2	13081-0001	STRAIN RELIEF POLY COLOR ORANGE			
15	1	30751-0001	U-BOLT + INSULATOR ASS'Y			
14	2	13090-0001	3/4 SQ. TOP + BOTTOM CROSSARM			
13	4	12992-0101	TRIPLE BOOM INSULATOR			
12	1	10258-0401	SHORTING STRAP			
6 THRU 11	2 EA	30750-0001	SINGLE UHF WIRE EL. ASS'Y			
5	1	30752-0001	PARASITE EL. ASS'Y			
2+4	2 EA	30753-0101	EL. ASS'Y L.H.			
1+3	2 EA	30753-0201	EL. ASS'Y R.H.			

SCALE: NONE
NO. REQ'D PER ASSEMBLY:
MATERIAL:
HEAT TREAT:
FINISH:

TOLERANCES UNLESS OTHERWISE SPECIFIED
FRACTIONAL ± 1/64
DECIMAL ± .005
ANGULAR ± 1/2°

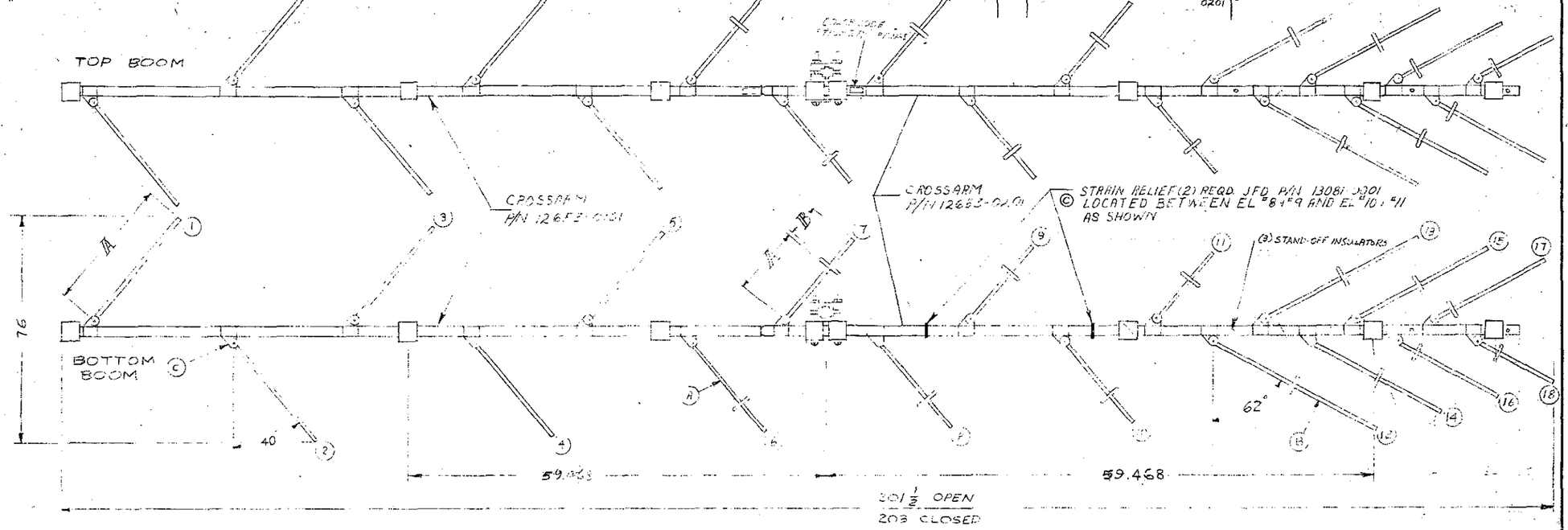
L PV-VU-40

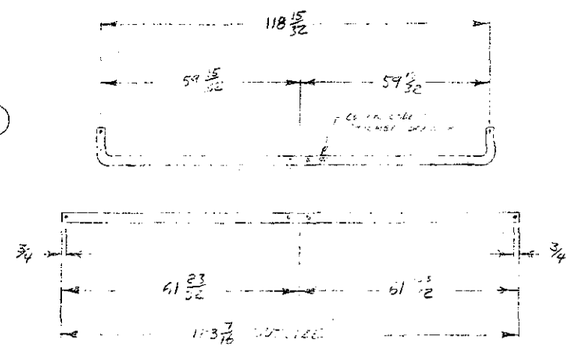
DRAWN	CHECKED	ENG. APP.	PROD. APP.
J. HOAGER			
7-22-66			

JFD ELECTRONICS CORP.
BROOKLYN 19, N.Y.

DATE OF PRINTING: DEC 14 1966
NEXT ASSEMBLY:
DRAWING NO. D
01012040

REV.	DESCRIPTION	DATE	APP.
C	ADDED (2) STRAIN RELIEF JFD P/N 13081-0001 & IBM ASS'Y NO. 01C1018000	6-7-66	
D	ADD CROSSARM P/N 12653-0101 0201	6-24-66	
A	MODIFIED TURRET, STAMP CARTON WITH LETTER "A"	10-20-64	
B	BOOM BRACE WAS 4 PIECES	10-21-65	





NOTE
FOR BOOM BRACE USE (1)
1¼" DIA. x 123 7/16 CUTSIZE
PART NO. 12723-0401

00304

ITEM NO.	NO. REQ'D	PART NO.	DESCRIPTION	MATERIAL	SPECIFICATION	NOTE
C	ALL	30665	BKT ASSY.			
B	7 LT ALL 7 RT HD	30664	UHF BUTTSEAM, CAP.			
A	6 LT 4½ RT HD	30663	VHF FLANGED CAP.			

SCALE: NONE
NO. REQ'D PER ASSEMBLY: (2-4-6)
MATERIAL: .020
HEAT TREAT: T-37
FINISH: SEMI ALODINE

TOLERANCES UNLESS OTHERWISE SPECIFIED
FRACTIONAL ± 1/64
DECIMAL ± .005
ANGULAR ± 1/2°

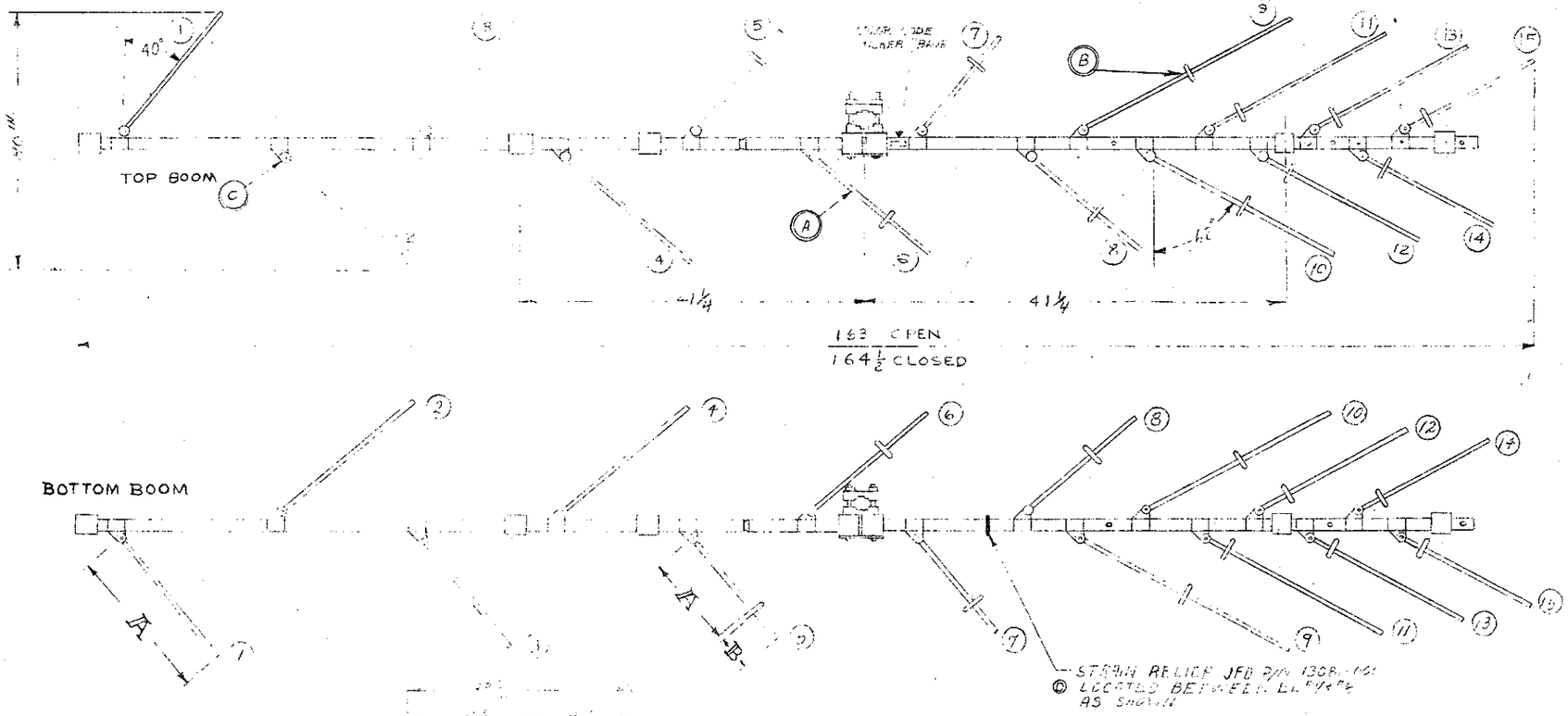
LPV-VU18C
ASSY. DWG.

DRAWN	CHECKED	ENG. APP.	PROD. APP.
[illegible] 6-7-66			

JFD ELECTRONICS CORP.
BROOKLYN 19, N. Y.

DATE OF PRINTING: DEC 15 1966
NEXT ASSEMBLY:
DRAWING NO.: IBM #52[illegible]

REV.	DESCRIPTION	DATE	APP.
A	PER EC. 80 [illegible] WAS 2 - 1	10-14-64	
B	MODIFIED TURRET, STAMP CARTON WITH LETTER "A"	11-20-64	
C	BOOM BRACE WAS (4) PIECES	12-21-65	
D	ADDED STRAIN RELIEF JFD P/N 1308[illegible] CCCI + IBM ASS'Y NO. 0101015000 + ELEMENT IDENT NO.	6-9-66	



00302

ITEM NO.	NO. REQ'D	PART NO.	DESCRIPTION	MATERIAL	SPECIFICATION	NOTE
C	ALL	3C625	BKT ASSY.			
B	7 LT HD 7 RT HD	30664	UHF BUTT SEAM CAP			
A	9 LT HD 9 RT HD	30663	VHF FLANGED CAPACITOR			

SCALE: NONE
NO. REQ'D PER ASSEMBLY:
MATERIAL:
HEAT TREAT:
FINISH: [illegible] ALODINE

TOLERANCES UNLESS OTHERWISE SPECIFIED
FRACTIONAL ± 1/64
DECIMAL ± .005
ANGULAR ± 1/2°

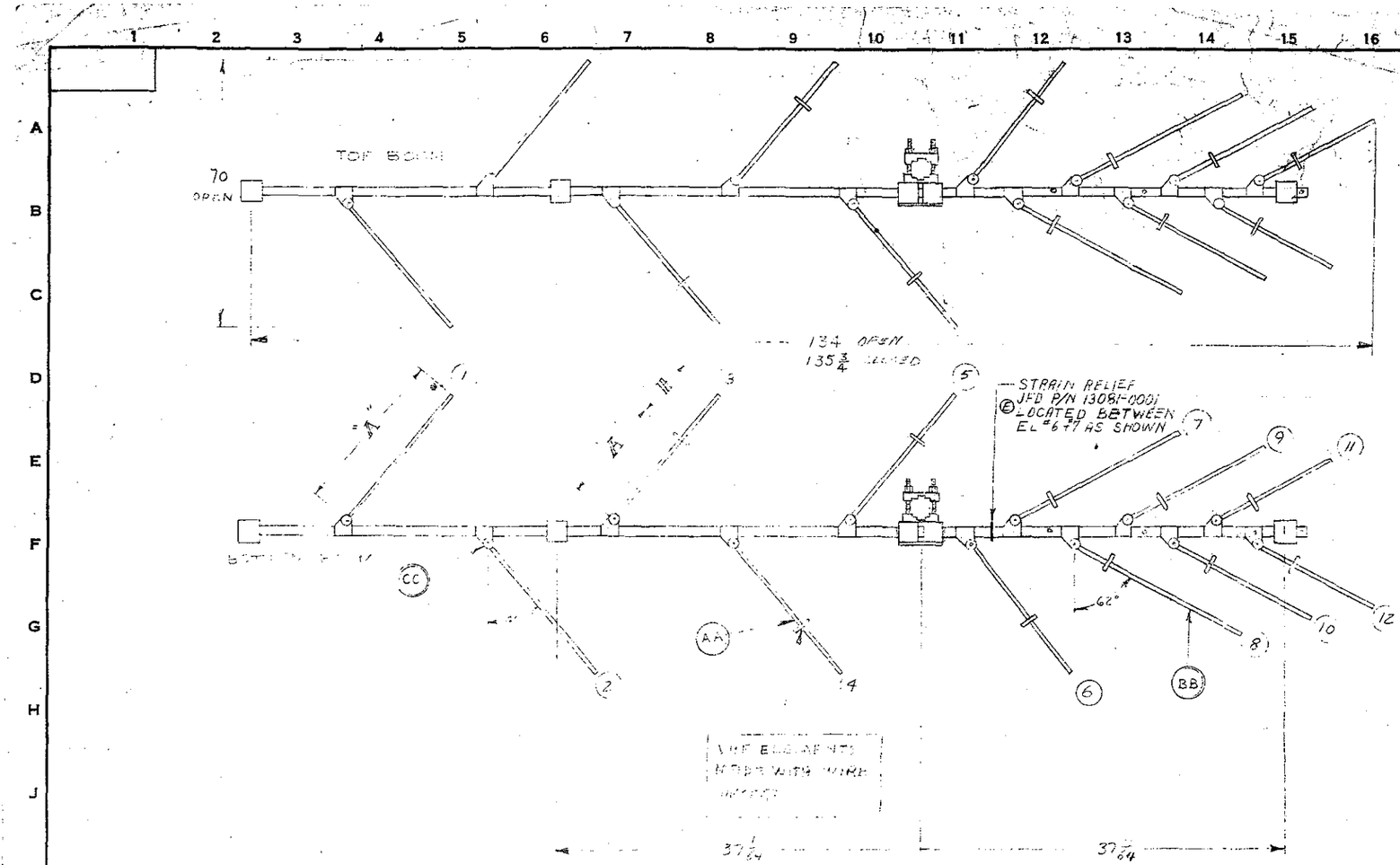
LPV-VL115A
ASSY DWG

DRAWN	CHECKED	ENG. APP.	PROD. APP.
[illegible]			

JFD ELECTRONICS CORP.
BROOKLYN 19, N.Y.

DATE OF PRINTING: DEC 15
NEXT ASSEMBLY:
DRAWING NO. 52670

© IBM 0101015000



REV.	DESCRIPTION	DATE	APP.
A	MODIFIED TURRET, STAMP CARTON WITH LETTER "A"	11-26-64	
B	51 WAS 50; 33 1/2 WAS 33; 16 1/2 WAS 16; ADDED 6" TO CROSSARM	1-6-65	
C	45 29/32 WAS 44 29/32 42 25/32 WAS 40 13/32 38 5/8 WAS 36 1/2 35 13/32 WAS 33 13/32 32 1/2 WAS 30 5/8	1-22-65	
D	ADDED BOOM BRACE TO ANT. (WIRE INSULATOR TO ATTACH BRACE) STAMP CARTON WITH LETTER "D"	4-14-66	
E	ADDED STRAIN RELIEF JFD P/N 13081-0001 + IBM NO. 01010120000	6-7-66	

BOX SIZE 7 1/2 X 6 1/2 X 135
END PAD 7 X 7 X 35

00300

ITEM NO.	NO. REQ'D	PART NO.	DESCRIPTION	MATERIAL	SPECIFICATION	NOTE
CC	FIL	30165	BAT ASS'Y			
B-B	6 LEFT NO 6 RIGHT 40	30664	UHF PITTSBURG CAPACITOR			
A-A	9 LEFT NO 9 RIGHT 41	30663	VHF FLANGED CAPACITOR			

SCALE: NONE
TOLERANCES UNLESS OTHERWISE SPECIFIED
FRACTIONAL ± 1/64
DECIMAL ± .005
ANGULAR ± 1/2°
NO. REQ'D PER ASSEMBLY:
MATERIAL:
HEAT TREAT:
FINISH: GOLD ALODINE

LPV-VU12B
ASSY DWG.

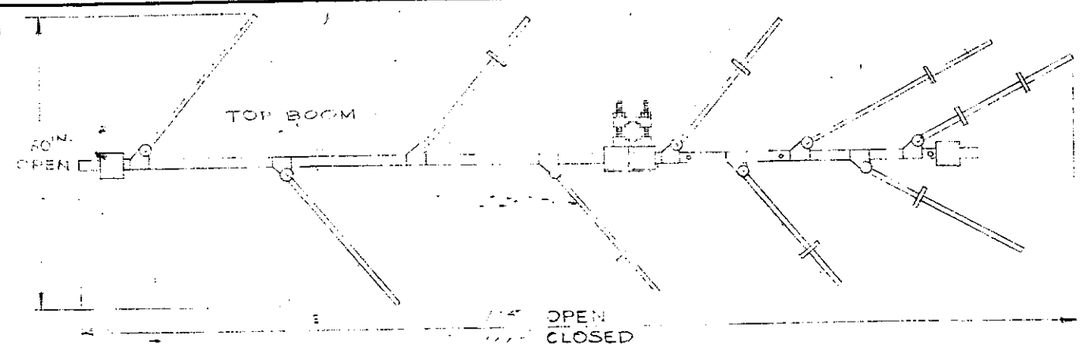
DRAWN	CHECKED	ENG. APP.	PROD. APP.

JFD ELECTRONICS CORP.
BROOKLYN 19, N.Y.

DATE OF PRINTING: DEC 15 1966
NEXT ASSEMBLY:
DRAWING NO. 32912

ELIM APPLICATION

REV.	DESCRIPTION	DATE	APP.
A	[illegible] 118" lg WHS 112 E Lg BOX 3 1/4 Lg WR. 35 Lg PVC	3-3-	
B	STAND OFF INSULATOR MOVED SEE CROSSARM PRINT	7-28-65	
C	ADDED STRAIN RELIEF JFD P/N 13081-0001 + IBM ASS'Y NO. 0101009000	6-7-66	



VHF ELEMENTS MADE WITH A BED EYELET PT # 2665-0001

STRAINED RELIEF JFD P/N 13081-0001 LOCATED BETWEEN EL "5" U" BOLT ASSY

00298

C-C [illegible] PRT ASSY
[illegible] VHF PITTSEAL CAPACITOR
[illegible] VHF FLANGED CAPACITOR

ITEM NO.	NO. REQ'D	PART NO.	DESCRIPTION	MATERIAL	SPECIFICATION	NOTE

SCALE: NONE
TOLERANCES UNLESS OTHERWISE SPECIFIED FRACTIONAL ± 1/64 DECIMAL ± .005 ANGULAR ± 1/2°
NO. REQ'D PER ASSEMBLY: AR
MATERIAL: [illegible]
HEAT TREAT: [illegible]
FINISH: GOLD ALODINE

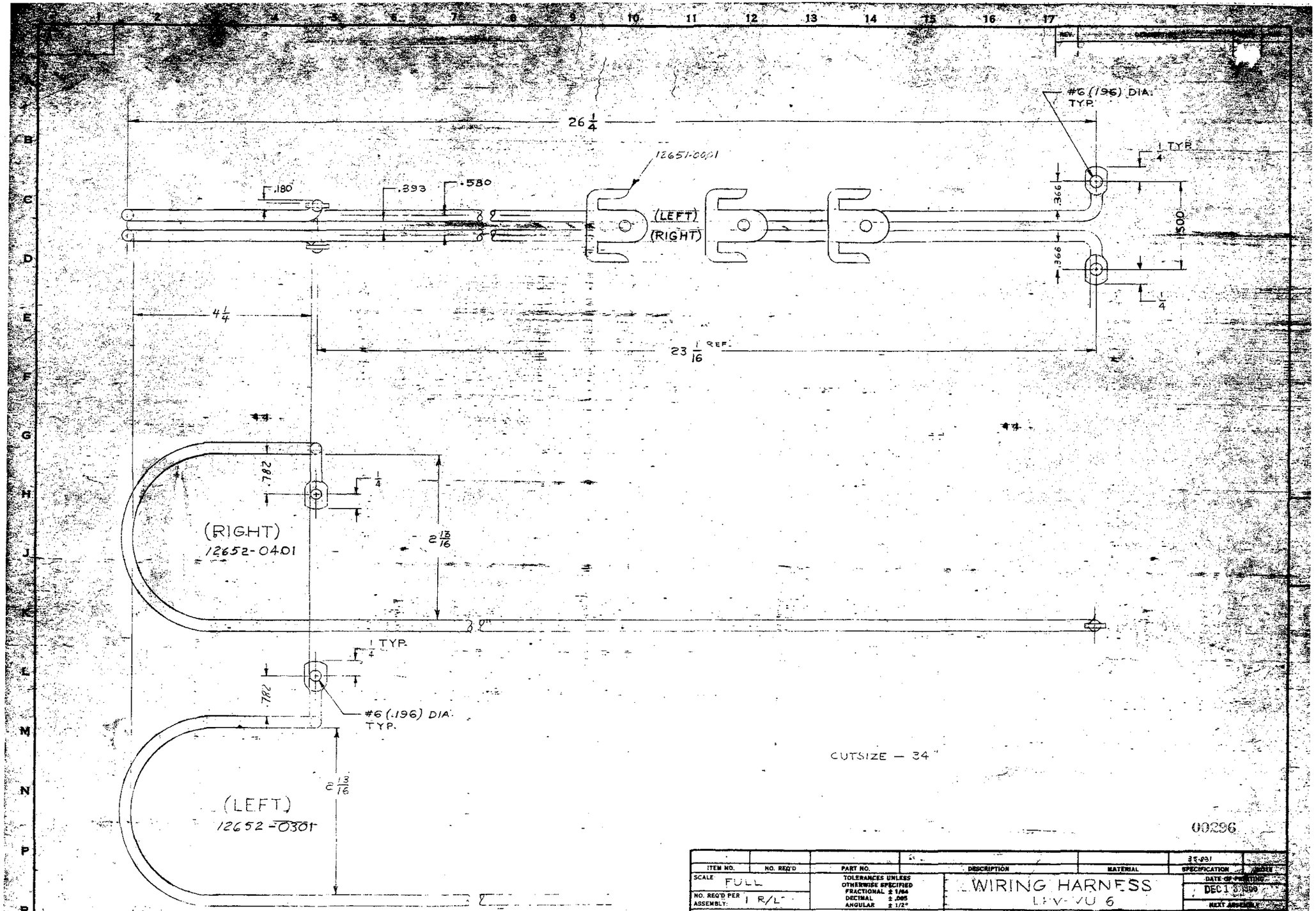
LPV-VU9 ASSY. DWG.

DRAWN	CHECKED	ENG. APP.	PROD. APP.
[illegible] 8-28-64			

JFD ELECTRONICS CORP. BROOKLYN 10, N.Y.

DATE OF PRINTING: DEC 15 1966
NEXT ASSEMBLY:
DRAWING NO. 52850

©IBM 0101009000



ITEM NO.	NO. REQ'D	PART NO.	DESCRIPTION	MATERIAL	SPECIFICATION
					33-931

SCALE: FULL	TOLERANCES UNLESS OTHERWISE SPECIFIED FRACTIONAL ± 1/64 DECIMAL ± .005 ANGULAR ± 1/2°	WIRING HARNESS LPV-VU 6	DATE OF PRINTING: DEC 13 1965
NO. REQ'D PER ASSEMBLY: 1 R/L			NEXT ASSEMBLY:
MATERIAL: .187 DIA. ALUM. (6201-T81)		DRAWN: Released 1-13-65 / CHECKED / ENG. APP. / PROD. APP.	DRAWING NO.
HEAT TREAT:		JFD ELECTRONICS CORP. BROOKLYN 19, N. Y.	30670-0101
FINISH:			

REV.	DESCRIPTION	DATE	APP.
A	TURNED INSULATORS		
B	4 1/2 WAS 3 RAD. - BEND WAS 90		
C	28 1/4 REF WAS 29 1/2 : 4 3/8 WAS 4 1/2	7-15-66	

(3) REQ.
12655-0001

12655-0002

#6 (196) DIA.
TYP.

1/4 TYP.

1.500

1/4

(B)

.782

1/4

(RIGHT)
-0201

2 13/16

1/4 TYP.

.782

#6 (.196) DIA.
TYP.

2 13/16

(LEFT)
-0101

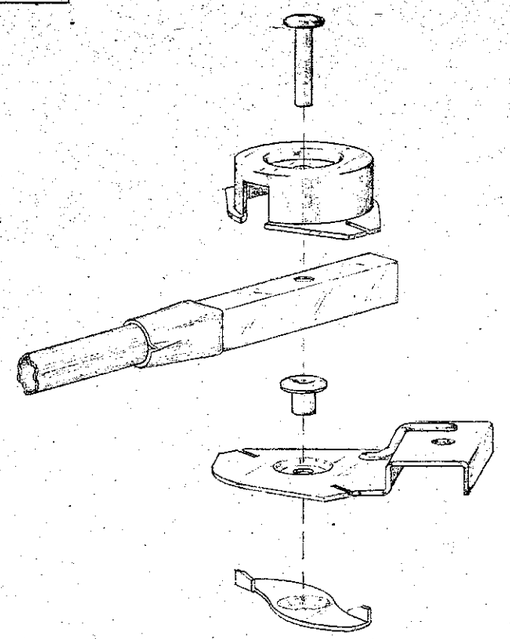
CUTSIZE — 40.50 REF

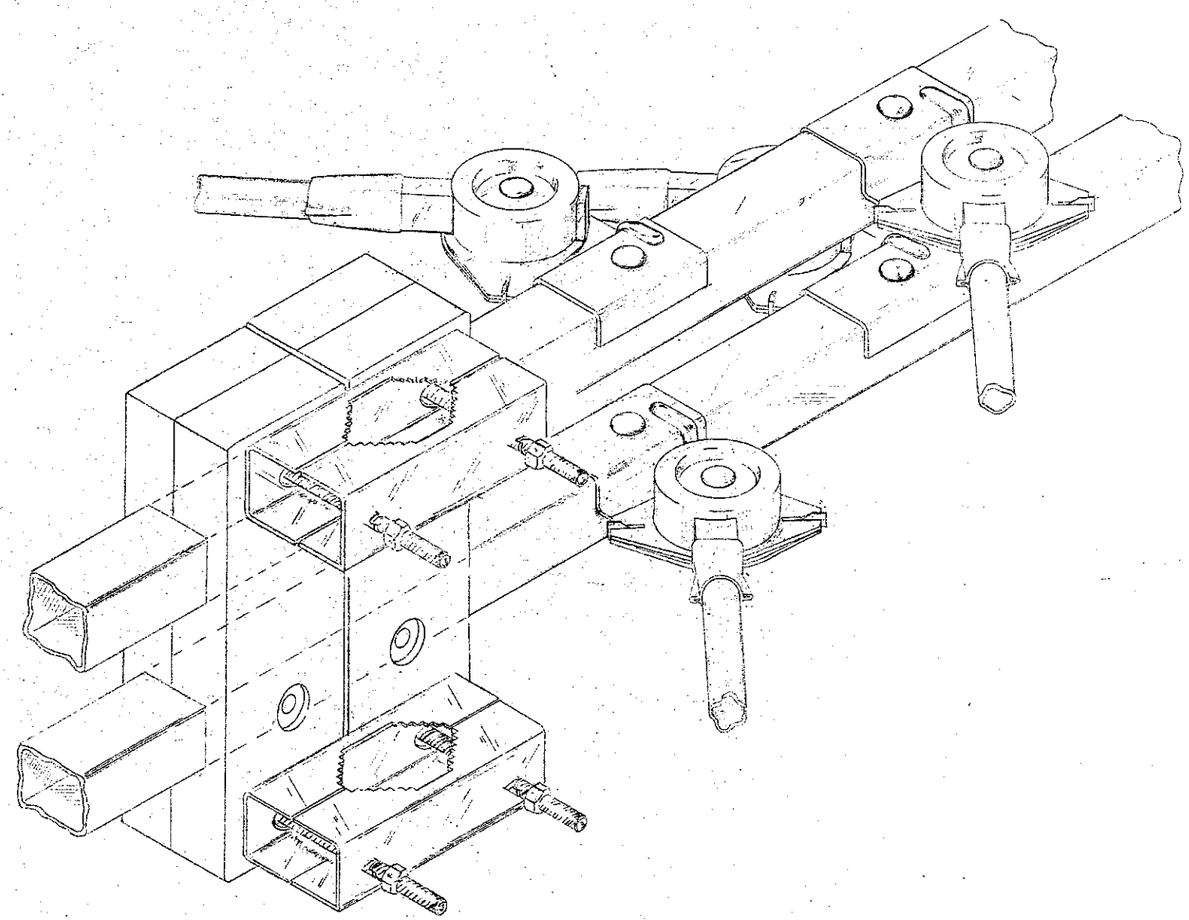
00295

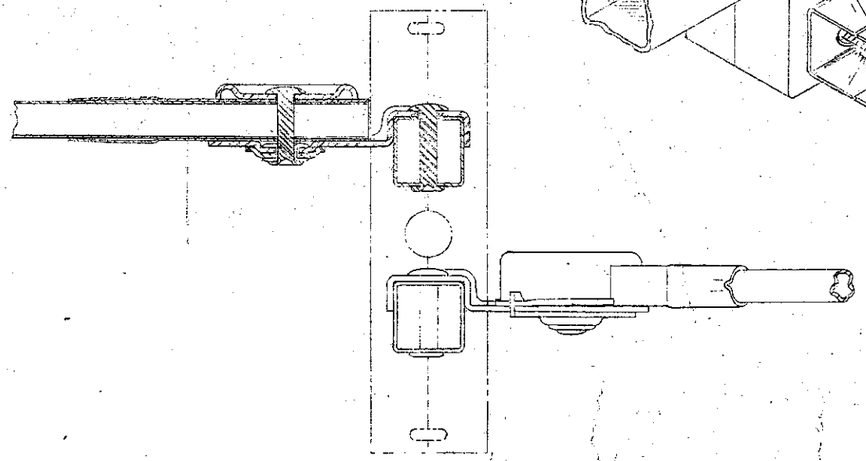
ITEM NO.	NO. REQ'D	PART NO.	DESCRIPTION	MATERIAL	SPECIFICATION	NOTE
					35-831	

SCALE: FULL	TOLERANCES UNLESS OTHERWISE SPECIFIED FRACTIONAL ± 1/64 DECIMAL ± .005 ANGULAR ± 1/2°	WIRING HARNESS	DATE OF PRINTING: DEC 14 1966
NO. REQ'D PER ASSEMBLY: 1 R/L			NEXT ASSEMBLY
MATERIAL: .187 DIA. ALUM (6201-T81)	DRAWN: [illegible]	CHECKED	ENG. APP. / PROD. APP.
HEAT TREAT:			DRAWING NO.
FINISH:	JFD ELECTRONICS CORP. BROOKLYN 19, N.Y.		670-1201

REV.	DESCRIPTION	DATE	APP.







00294

ITEM NO.	NO. REQ'D	PART NO.	DESCRIPTION	MATERIAL	SPECIFICATION	NOTE

SCALE: NONE

TOLERANCES UNLESS OTHERWISE SPECIFIED
FRACTIONAL ± 1/64
DECIMAL ± .005
ANGULAR ± 1/2°

ASSEMBLY DWG.
NEW LFV-VU

DATE OF PRINTING: DEC 1 4 1966

NO. REQ'D PER ASSEMBLY: as req

MATERIAL: as req

HEAT TREAT: as req

FINISH: as req

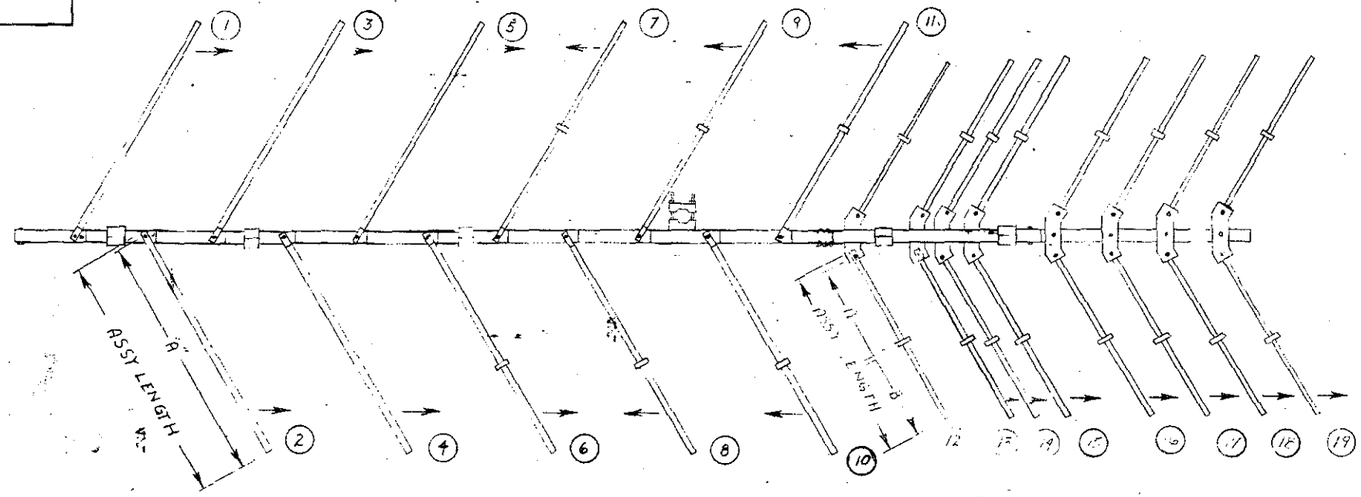
DRAWN	CHECKED	ENG. APP.	PROD. APP.
Rudolph 12-17-64	S. Hollay		

NEXT ASSEMBLY

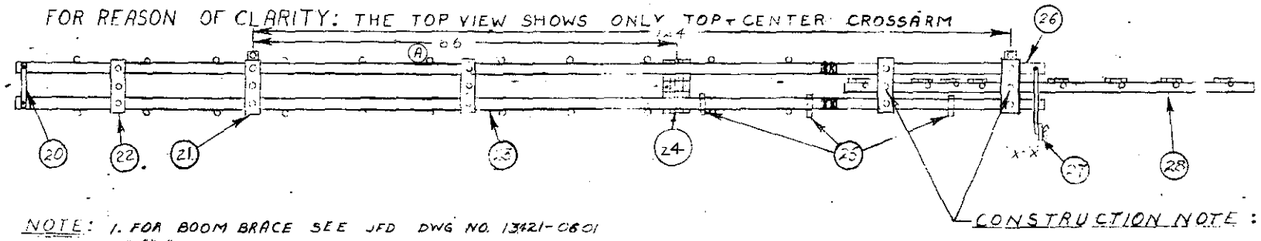
JFD ELECTRONICS CORP.
BROOKLYN 19, N. Y.

DRAWING NO. 30665

REV.	DESCRIPTION	DATE	APP.
A	6.6 WAS 5B:12 + WAS 126	8-23-66	
B	P/N 13417- WAS 13117- 13421- WAS 13121 -	9-27-66	
C	REVISED ANT. CARTON SIZE & ADDED SH. WT.	10-18-66	



FOR REASON OF CLARITY: THE TOP VIEW SHOWS ONLY TOP + CENTER CROSSARM



NOTE: 1. FOR BOOM BRACE SEE JFD DWG NO. 13421-0601
2. "X-X" TAKE OFF POINT
3. BOTTOM CROSSARM HAS STRAIN RELIEFS ATTACHED AS SHOWN - STRAIN RELIEFS TO BE POSITIONED PRIOR TO RIVETING EL. ASS'Y
4. → INDICATES FOLDING ACTION OF ELEMENTS

ANT. CARTON SIZE — — — 3 x 7" x 7"
ANT. SHIPPING WEIGHT — — — APPROX 22 LBS
ANT. WEIGHT — — — — — — APPROX LBS
OVERALL CROSSARM LENGTH — — 274" LONG
TURNING RADIUS — — — — 114" RAD.
LONGEST ELEMENT TIP TO TIP — 92" LONG

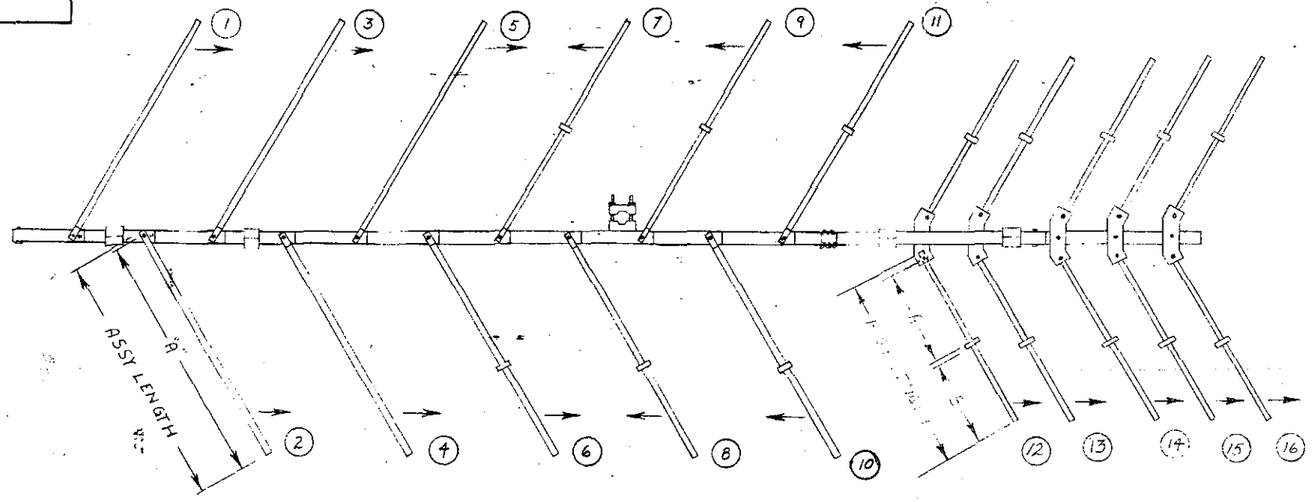
CONSTRUCTION NOTE: PRIOR TO ASS'Y OF CENTER CROSSARM TO DYNA-PAK, AND PRIOR TO ATTACHING CENTER CROSSARM ELEMENTS, RIVET (1) EA. TRIPLE BOOM INSULATOR P/N 12992-0101 TO CENTER CROSSARM USING RIVET P/N 99101-1061 AS SHOWN.

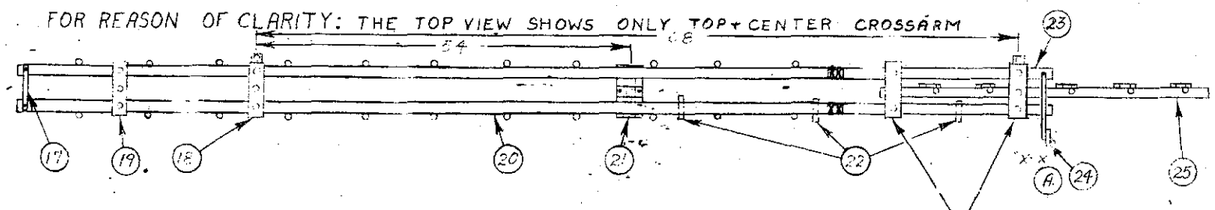
00293

ITEM NO.	NO. REQ'D	PART NO.	DESCRIPTION	MATERIAL	SPECIFICATION	NOTE
NOT SHOWN	1	30149-0001	BOOM BRACE ASS'Y			
NOT SHOWN	1	30755-0101	HARDWARE BAG			
28	1	13417-0301	3/4 SQ CENTER CROSSARM			
27	1	30794-0001	TAKE OFF WIRE ASS'Y			
26	2	13421-0201	3/4 SQ TOP + BOTTOM CROSSARM			
25	3	13001-0001	STRAIN RELIEF POLY. COLOR ORANGE			
24	1	30751-0001	U-BOLT + INSULATOR ASS'Y			
23	2	13417-0101	3/4 SQ TOP + BOTTOM CROSSARM			
22	6	12992-0101	TRIPLE BOOM INSULATOR			
21	1	12992-0001	TRIPLE BOOM INSULATOR FOR BOOM BRACE			
20	1	10258-0401	SHORTING STRAP			
12 THRU 9	1 EA.	30752-0001	PARASITE EL. ASS'Y			
6-8-10	2 EA	30754-0201	EL. + CAPACITOR ASS'Y L.H.			
7-9-11	2 EA	30754-0101	EL. + CAPACITOR ASS'Y R.H.			
2-4	2EA	30753-0101	EL ASS'Y L.H.			
1-3-5	2EA	30753-0201	EL. ASS'Y R.H.			

SCALE: NONE	TOLERANCES UNLESS OTHERWISE SPECIFIED FRACTIONAL ± 1/64 DECIMAL ± .005 ANGULAR ± 1/2°	LPV-TV 190		DATE OF PRINTING DEC 1 8 [illegible]
NO. REQ'D PER ASSEMBLY: ~				NEXT ASSEMBLY
MATERIAL: ~		DRAWN J WARNER 7-29-66	CHECKED	ENG. APP. / PROD. APP.
HEAT TREAT: ~				DRAWING NO.
FINISH: ~		JFD ELECTRONICS CORP. BROOKLYN 19, N.Y.		01002190

REV.	DESCRIPTION	DATE	APP.
A	INITIATED TAKE OFF ASS'Y 30749	9-18-66	
B	P/N 13415-WAS 13115- 13421-WAS 13121-	9-27-66	
C	REVISED ANT. CARTON SIZE & SH. WT.	10-16-66	





FOR REASON OF CLARITY: THE TOP VIEW SHOWS ONLY TOP + CENTER CROSSARM

NOTE: 1. FOR BOOM BRACE SEE JFD DWG NO. 13421-0501
2. "X"-"X" TAKE OFF POINT
3. BOTTOM CROSSARM HAS STRAIN RELIEFS ATTACHED AS SHOWN - STRAIN RELIEFS TO BE POSITIONED PRIOR TO RIVETING EL. ASS'Y
4. → INDICATES FOLDING ACTION OF ELEMENTS

ANT. CARTON SIZE — — — 7" x 6.75" x 7"
ANT. SHIPPING WEIGHT — — — APPROX 20 LBS
ANT. WEIGHT — — — — — — APPROX LBS.
OVERALL CROSSARM LENGTH — — — 174" LONG
TURNING RADIUS — — — — 106½" RAD.
LONGEST ELEMENT TIP TO TIP — 92" LONG

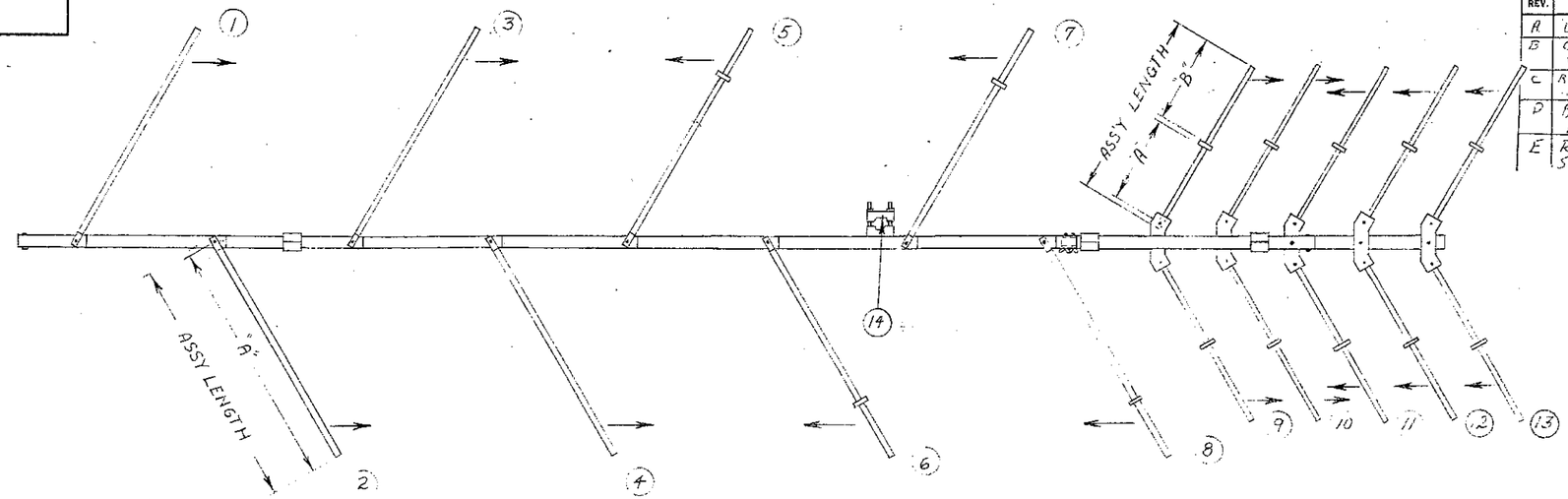
CONSTRUCTION NOTE: PRIOR TO ASS'Y OF CENTER CROSSARM TO DYNA-PAK, AND PRIOR TO ATTACHING CENTER CROSSARM ELEMENTS, RIVET (1)EA. TRIPLE BOOM INSULATOR P/N 12992-0101 TO CENTER CROSSARM USING RIVET P/N 99101-1061 AS SHOWN.

00292

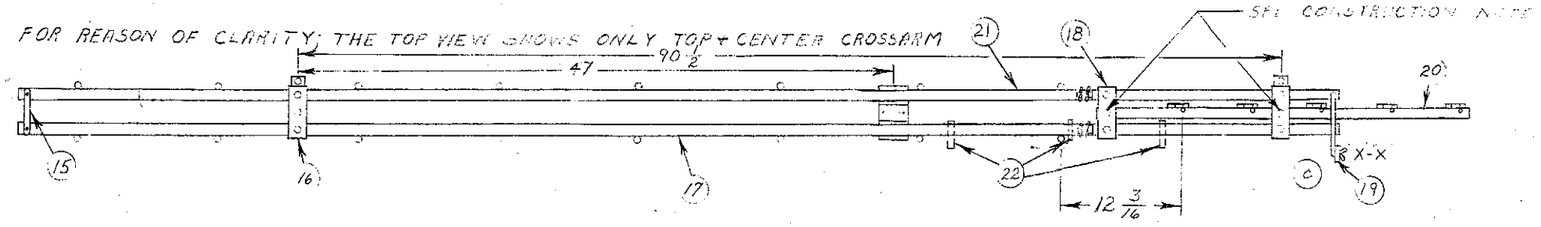
ITEM NO.	NO. REQ'D	PART NO.	DESCRIPTION	MATERIAL	SPECIFICATION	NOTE
NOT SHOWN	1	30749-0001	BOOM BRACE ASS'Y			
NOT SHOWN	1	30755-0101	HARDWARE BAG			
25	1	13415-0301	3/4 SQ CENTER CROSSARM			
24	1	30749-0001	TAKE OFF WIRE ASS'Y			
23	2	13415-0201	3/4 SQ TOP + BOTTOM CROSSARM			
22		13081-0001	STRAIN RELIEF POLY. COLOR ORANGE			
21	1	30751-0001	U-BOLT + INSULATOR ASS'Y			
20	2	13415-0101	3/4 SQ TOP + BOTTOM CROSSARM			
19		12992-0101	TRIPLE BOOM INSULATOR			
18	4	12992-0001	TRIPLE BOOM INSULATOR FOR BOOM BRACE			
17	1	10258-0401	SHORTING STRAP			
12-13-16	1 EA.	30752-0001	PARASITE EL. ASS'Y			
6-8-10	2 EA	30754-0201	EL. + CAPACITOR ASSY L.H.			
7-9-11	2 EA	30754-0101	EL. + CAPACITOR ASSY R.H.			
2-4	2EA	30753-0101	EL ASSY L.H.			
1-3-5	2EA	30753-0201	EL. ASSY. R.H.			

SCALE: NONE	TOLERANCES UNLESS OTHERWISE SPECIFIED FRACTIONAL ± 1/64 DECIMAL ± .005 ANGULAR ± 1/2°	LPV-TV 160	DATE OF PRINTING: DEC 13 1966
NO. REQ'D PER ASSEMBLY: ~			NEXT ASSEMBLY
MATERIAL: ~		DRAWN: J. PHANEUF 7-29-66 / CHECKED / ENG. APP. / PROD. APP.	
HEAT TREAT: ~			DRAWING NO.
FINISH: ~		JFD ELECTRONICS CORP. BROOKLYN 19, N.Y.	01002160

REV.	DESCRIPTION	DATE	APP.
A	U BOLT ROTATED 180°	2-66	
B	CARTON SIZE 97¾"x6"x6" WAS 128"x6"x6"	8-8-66	
C	ROTATES TAKE OFF HARNESS 180°	8-15-66	
D	P/N 13414-WAS 13114- 13421-WAS 13121-	9-27-66	
E	REVISED ANT. CARTON SIZE & SH. WT.	10-18-66	



FOR REASON OF CLARITY, THE TOP VIEW SHOWS ONLY TOP & CENTER CROSSARM



NOTE:
1. FOR BOOM BRACE SEE JFD DWG NO. 13421-0301
2. 'X'-'X' TAKE OFF POINT
3. BOTTOM CROSSARM HAS STRAIN RELIEFS ATTACHED AS SHOWN-STRAIN RELIEFS TO BE POSITIONED PRIOR TO RIVETING EL ASSY
(B) ANT CARTON SIZE — 98¾"x6"x7"
ANT WEIGHT — APPROX 13½ LBS.
SHIPPING WEIGHT — APPROX 16 LBS.
OVERALL CROSSARM LENGTH — 143" LONG
TURNING RADIUS — 90" RAD
LONGEST ELEMENT TIP TO TIP — 92" LONG
4. → INDICATES FOLDING ACTION OF ELEMENTS

CONSTRUCTION NOTE: PRIOR TO ASSY OF CENTER CROSSARM TO DYNAPAK AND ALSO PRIOR TO ATTACHING CENTER CROSSARM ELEMENTS RIVET (FR TRIPLE BOOM INSULATOR P/N 12992-0101 TO CENTER CROSSARM USING RIVIT P/N 99101-1061 AS SHOWN

00291

ITEM NO.	NO. REQ'D	PART NO.	DESCRIPTION	MATERIAL	SPECIFICATION	NOTE
22	3	13081-0001	STRAIN RELIEF POLY. COLOR-ORANGE			
21	2	13414-0201	3/4 SQ TOP+BOTTOM CROSSARM (DYNA PAK)			
NOT SHOWN	1	30749-0001	BOOM BRACE ASS'Y			
NOT SHOWN	1	30755-0101	HARDWARE BAG			
20	1	13414-0301	3/4 SQ. CENTER CROSSARM			
19	1	30744-0001	TAKE OFF WIRE ASS'Y			
18	2	12992-0101	TRIPLE BOOM INSULATOR			
17	2	13414-0101	3/4 SQ. TOP+BOTTOM CROSSARM (DIRECTOR)			
16	4	12992-0001	TRIPLE BOOM INSULATOR FOR BOOM BRACE			
15	1	10258-0401	SHORTING STRAP			
14	1	30751-0001	U-BOLT + INSULATOR ASS'Y			
9-10-11-12-13	1 EA	30752-0001	PARASITIC EL ASS'Y			
6+8	2 EA	30754-0201	EL. + CAPACITOR ASS'Y L.H.			
2+4	2 EA	30753-0101	EL. ASS'Y L.H.			
5+7	2 EA	30754-0101	EL. + CAPACITOR ASS'Y R.H.			
1+3	2 EA	30753-0201	EL. ASS'Y. R.H.			

SCALE: NONE
NO. REQ'D PER ASSEMBLY:
MATERIAL:
HEAT TREAT:
FINISH:
TOLERANCES UNLESS OTHERWISE SPECIFIED
FRACTIONAL ± 1/64
DECIMAL ± .005
ANGULAR ± 1/2°

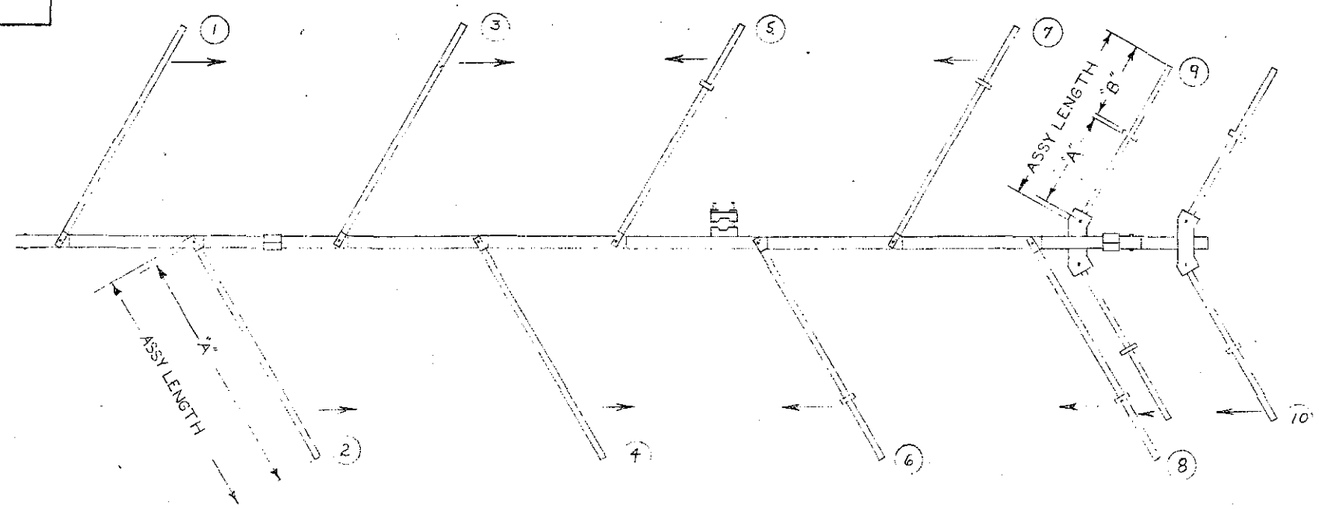
LPV-TV 130

DRAWN	CHECKED	ENG. APP.	PROD. APP.
J HORNER 9-18 66			

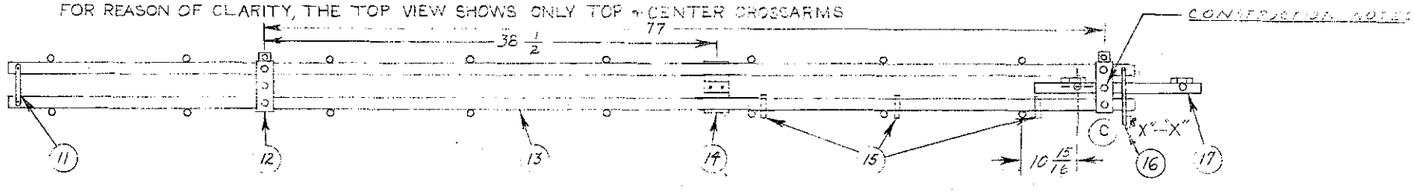
JFD ELECTRONICS CORP.
BROOKLYN 19, N.Y.

DATE OF PRINTING: DEC 13 1966
NEXT ASSEMBLY:
DRAWING NO. 01002130

REV.	DESCRIPTION	DATE	APP.
A	"U" BOLT ROTATED 180°	2-1-66	
B	CARTON SIZE 113X6X6 THIS 123 X 6X6	8-8-66	
C	ROTATED FRNT ASSY 180°	8-18-66	
D	P/N 13412- WAS 13112-	9-27-66	
E	REVISED ANT. SH. WT & ANT CARTON SIZE	10-18-66	



FOR REASON OF CLARITY, THE TOP VIEW SHOWS ONLY TOP & CENTER CROSSARMS



CONFIGURATION NOTE: PASS TOP PART OF TRIPLE BOOM INSULATOR THROUGH CENTER CROSSARM ELEMENTS. RIVET TRIPLE BOOM INSULATOR P/N 12992-0101 TO CENTER CROSSARM USING RIVET P/N 99101-1061 AS SHOWN.

NOTE:

1. "X"-"X" TAKE OFF POINT
2. BOTTOM CROSSARM HAS STRAIN RELIEFS ATTACHED AS SHOWN- STRAIN RELIEFS TO BE POSITIONED PRIOR TO RIVETING EL. ASS'Y
3. FOR BOOM BRACE SEE JFD DWG NO. 13121-0201
4. → INDICATES FOLDING ACTION OF ELEMENTS

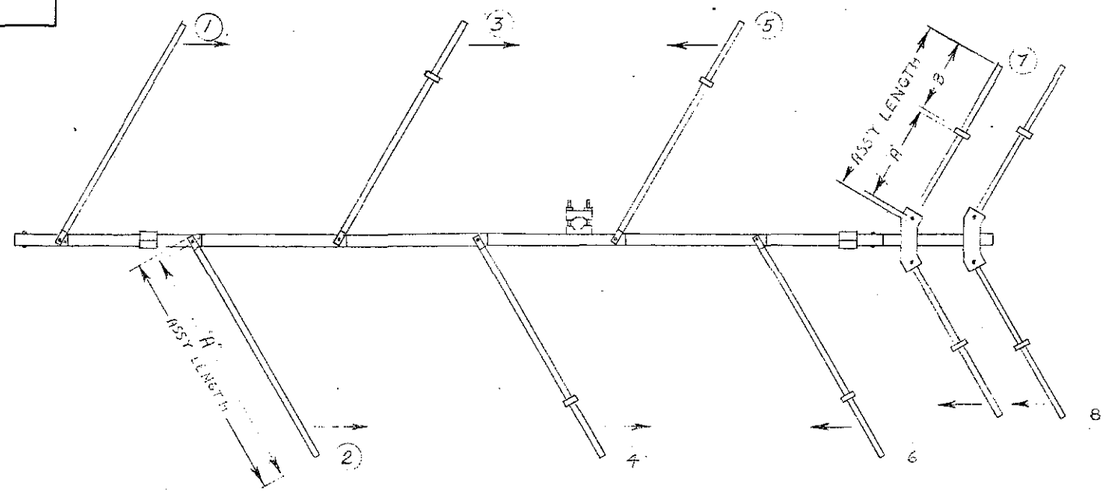
(B) ANT. CARTON SIZE — — — — — 114"X6.25"X6.25"
ANT. WEIGHT — — — — — — APPROX 9½ LBS
SHIPPING WEIGHT — — — — — APPROX. 14 LBS
OVERALL CROSSARM LENGTH — — — 112 3/4" LONG
TURNING RADIUS — — — — — — 78 1/2" RAD.
LONGEST ELEMENT TIP TO TIP — 92" LONG

00290

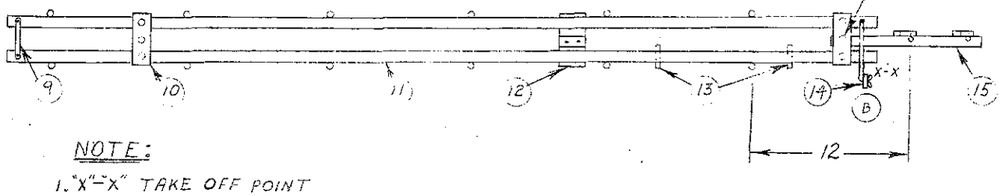
ITEM NO.	NO. REQ'D	PART NO.	DESCRIPTION	MATERIAL	SPECIFICATION	NOTE
NOT SHOWN	1	30749-0001	BOOM BRACE ASS'Y			
NOT SHOWN	1	30155-0101	HARDWARE BAG ASS'Y			
17	1	13412-0101	3/4 X .035 WALL CENTER CROSSARM			
16	1	30744-0001	TAKE OFF WIRE ASS'Y			
15	3	13081-0001	STRAIN RELIEF POLY. COLOR ORANGE			
14	1	30751-0001	U-BOLT & INSULATOR ASS'Y			
13	2	13412-0001	3/4 X .035 WALL TOP & BOTTOM CROSSARM			
12	4	12992-0001	TRIPLE BOOM INSULATOR FOR BOOM BRACE			
11	1	10258-0401	SHORTING STRAP			
9+10	1 EA.	30752-0001	PARASITE EL. ASS'Y			
6+8	2 EA.	30754-0201	EL. + CAPACITOR ASS'Y L.H.			
5+7	2 EA.	30754-0101	EL. + CAPACITOR ASS'Y R.H.			
2+4	2 EA.	30753-0101	EL. ASS'Y L.H.			
1+3	2 EA.	30753-0201	EL. ASS'Y R.H.			

SCALE: NONE	TOLERANCES UNLESS OTHERWISE SPECIFIED FRACTIONAL ± 1/64 DECIMAL ± .005 ANGULAR ± 1/2°	LPV-TV100		DATE OF PRINTING DEC 1 9 1966
NO. REQ'D PER ASSEMBLY: —				NEXT ASSEMBLY
MATERIAL: —		DRAWN: RL CATES 7-22-66	CHECKED / ENG. APP. / PROD. APP.	DRAWING NO.
HEAT TREAT: —		JFD ELECTRONICS CORP. BROOKLYN 19, N.Y.		01002100
FINISH: —				

REV.	DESCRIPTION	DATE	APP.
A	EL'S ASSY LENGTH 42 13/16 WAS 43 13/16	8-15-66	
B	ROTATED PART OF ASSY 180°	9-18-66	
C	P/N 13401- WAS 13101 -	9-27-66	
D	REVISED SH. WT. & ANT. CARTON SIZE	10-18-66	
E	OVERALL XARM LG. WAS 81 — NOW 83 29/32	12-13-66 JM	



FOR REASON OF CLARITY, THE TOP VIEW SHOWS ONLY TOP + CENTER CROSSARMS



CONSTRUCTION NOTE: PRIOR TO ASS'Y OF CENTER CROSSARM TO ANTENNA AND PRIOR TO ATTACHING CENTER CROSSARM ELEMENTS, RIVET (1) TRIPLE BOOM INSULATOR P/N 12992-0101 TO CENTER CROSSARM USING RIVET P/N 99101-1061 AS SHOWN.

NOTE:

1. "X"-"X" TAKE OFF POINT
2. BOTTOM CROSSARM HAS STRAIN RELIEFS ATTACHED AS SHOWN-STRAIN RELIEFS TO BE POSITIONED PRIOR TO RIVETING EL. ASS'Y
3. → INDICATES FOLDING ACTION OF ELEMENTS

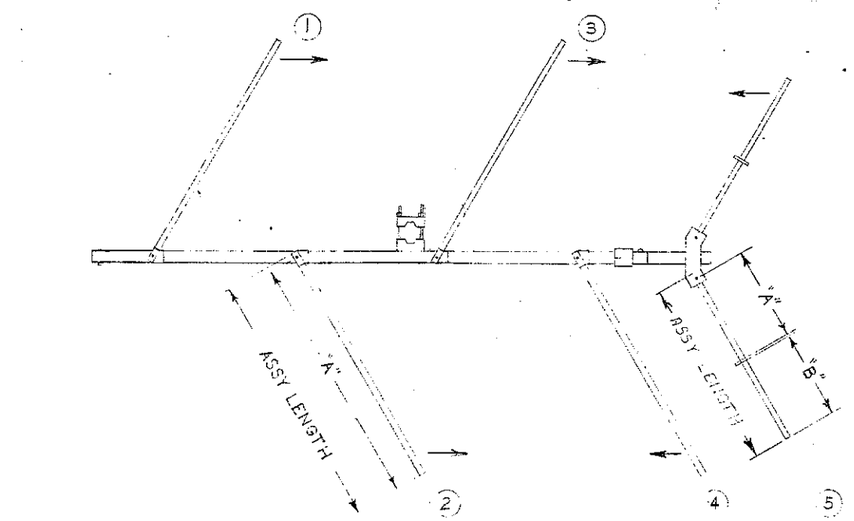
ANT CARTON SIZE — — — — — — 6.25" x 6.25" x 89"
ANT. WEIGHT — — — — — — — APPROX 5 LBS.
SHIPPING WEIGHT — — — — — — APPROX 9 LBS.
OVERALL CROSSARM LENGTH — — — 83 29/32"
TURNING RADIUS — — — — — — — 69" RAD.
LONGEST ELEMENT TIP TO TIP — 92"

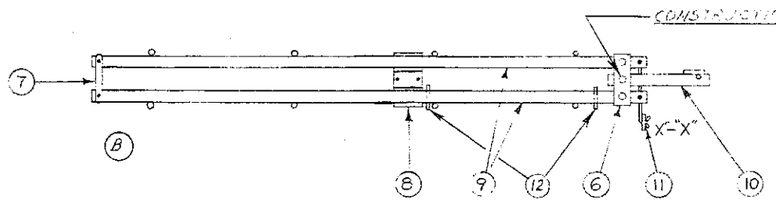
00289

ITEM NO.	NO. REQ'D	PART NO.	DESCRIPTION	MATERIAL	SPECIFICATION	NOTE
15	1	13401-0101	CENTER CROSSARM			
14	1	30744-0001	TAKE OFF WIRE ASS'Y			
13	2	13081-0001	STRAIN RELIEF POLY COLOR ORANGE			
12	1	30751-0001	U-BOLT + INSULATOR ASS'Y			
11	2	13401-0001	TOP + BOTTOM CROSSARM			
10	4	12992-0101	TRIPLE BOOM INSULATOR			
9	1	10258-0401	SHORTING STRAP			
7+8	1 EA.	30752-0001	PARASITE EL. ASS'Y			
4+6	2 EA.	30754-0201	EL + CAPACITOR ASS'Y L.H.			
3+5	2 EA.	30754-0101	EL + CAPACITOR ASS'Y R.H.			
2	2 EA.	30753-0101	EL. ASS'Y L.H.			
1	2 EA	30753-0201	EL. ASS'Y R.H.			

SCALE: NONE	TOLERANCES UNLESS OTHERWISE SPECIFIED FRACTIONAL ± 1/64 DECIMAL ± .005 ANGULAR ± 1/2°	LPV-TV80			DATE OF PRINTING DEC 13 1966
NO. REQ'D PER ASSEMBLY:		DRAWN	CHECKED	ENG. APP.	PROD. APP.	NEXT ASSEMBLY
MATERIAL:						DRAWING NO.
HEAT TREAT:		JFD ELECTRONICS CORP. BROOKLYN 19, N.Y.				C1002080
FINISH:						

REV.	DESCRIPTION	DATE	APP.
A.	EL. #4 32 1/4 WAS 30 1/4 33 1/8 WAS 31 1/8	8-23-66	
B	REMOVED INSULATOR	8-26-66	
C	CHANGED EL LENGTHS 1, 2, 3, 4	10-13-66	
D	REVISED ANT. SHIP WT. & ANT. CARTON SIZE.	10-18-66	
E	48 7/16 WAS 41 3/4 41 3/16 WAS 42 11/16	10-20-66	





CONSTRUCTION NOTE: PRIOR TO ASS'Y OF CENTER CROSSARM TO ANTENNA AND PRIOR TO ATTACHING CENTER CROSSARM ELEMENTS RIVET (1) EA. TRIPLE BOOM INSULATOR P/N-12992-0101 TO CENTER CROSSARM USING RIVET P/N 99101-1061 AS SHOWN.

NOTE:
1. "X-X" TAKE OFF POINT
2. BOTTOM CROSSARM HAS STRAIN RELIEFS ATTACHED AS SHOWN-STRAIN RELIEFS TO BE POSITIONED PRIOR TO RIVETING EL. ASS'Y
3. → INDICATES FOLDING ACTION OF EL.

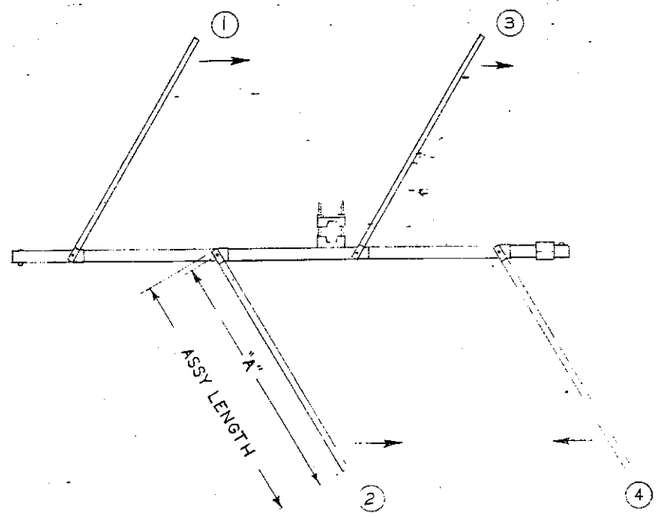
ANT CARTON SIZE — — — — — — 71"X6.25"X6.75"
ANT WEIGHT — — — — — — — APPROX LBS
SHIPPING WEIGHT — — — — — — APPROX 6 LBS
OVERALL CROSSARM LENGTH — — — — 53" LONG
TURNING RADIUS — — — — — — — 64" RAD.
-OVOLET ELEMENT TIP TO TIP — 86" LONG

00288

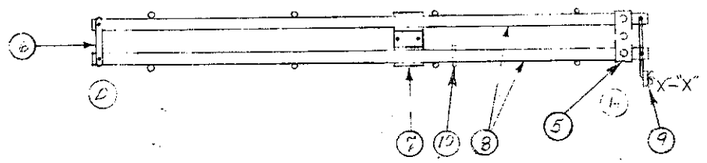
ITEM NO.	NO. REQ'D	PART NO.	DESCRIPTION	MATERIAL	SPECIFICATION	NOTE
12	2	13081-0001	STRAIN RELIEF			
11	1	30744-0001	TAKE OFF WIRE ASS'Y			
10	1	13098-0101	3/4 SQ CROSSARM CENTER			
9	2	13098-0001	3/4 SQ CROSSARM TOP + BOTTOM			
8	1	30751-0001	U-BOLT + INSULATOR ASS'Y			
7	1	10258-0401	SHORTING STRAP			
6	2	12992-0101	TRIPLE BOOM INSULATOR			
5	1	30752-0001	PARASITE EL. ASS'Y			
2+4	1	30753-0101	EL. ASS'Y L.H.			
1+3	1	30753-0201	EL. ASS'Y R.H.			

SCALE: NONE	TOLERANCES UNLESS OTHERWISE SPECIFIED FRACTIONAL ± 1/64 DECIMAL ± .005 ANGULAR ± 1/2°	LPV-TV50		DATE OF PRINTING DEC 13 1966
NO. REQ'D PER ASSEMBLY:				NEXT ASSEMBLY
MATERIAL: NOTED		DRAWN: R.LOATES 7-21-66	CHECKED / ENG. APP. / PROD. APP.	DRAWING NO.
HEAT TREAT:		JFD ELECTRONICS CORP. BROOKLYN 19, N.Y.		01002050
FINISH: NOTED				

REV.	DESCRIPTION	DATE	APP.
A	ROTATED TAKE OFF ASSY 180°	8-18-66	
B	EL. #4 32 1/4, 33 1/8 WAS 30 1/4, 31 1/8	8-22-66	
C	REVISED FOLDING ACTION	8-23-66	
D	REMOVED INSULATOR	8-26-66	
E	REVISED ANT CARTON SIZE	10-18-66	



FOR REASON OF CLARITY: THE TOP VIEW SHOWS ONLY TOP CROSSARM



NOTE: 1. 'X-X' TAKE OFF POINT
2. [illegible] CROSSARM HAS STRAIN RELIEF ATTACHED AS SHOWN. STRAIN RELIEF TO BE POSITIONED PRIOR TO [illegible] ASS'Y
3. ⟶ INDICATES FOLDING ACTION

00287

ANT. CARTON SIZE — — — 6 1/2" X 5 3/4 X 7"
ANT. SHIPPING WEIGHT — — — APPROX 5 LBS.
ANT. WEIGHT — — — — — APPROX 3 1/2 LBS.
OVERALL CROSSARM LENGTH — 44 3/4"
TURNING RADIUS — — — — 47"
LONGEST EL. TIP TO TIP. — — 90"

ITEM NO.	NO. REQ'D	PART NO.	DESCRIPTION	MATERIAL	SPECIFICATION	NOTE
10	1	13081-0001	STRAIN RELIEF ORANGE			
9	1	30744-0001	TAKE OFF WIRE ASS'Y			
6	2	13098-0001	3/4 SQ CROSSARM TOP + BOTTOM			
7	1	30751-0001	U-BOLT + INSULATOR ASS'Y			
4	1	10258-0401	SHORTING STRAP			
5	2	12992-0101	TRIPLE BOOM INSULATOR			
2+4	2 EA	30753-0101	EL. ASS'Y L.H			
1+3	2 EA	30753-0201	EL. ASS'Y R.H.			

SCALE: NONE
NO. REQ'D PER ASSEMBLY: —
TOLERANCES UNLESS OTHERWISE SPECIFIED
FRACTIONAL ± 1/64
DECIMAL ± .005
ANGULAR ± 1/2°
MATERIAL: NOTED
HEAT TREAT:
FINISH: NOTED

LPV-TV40

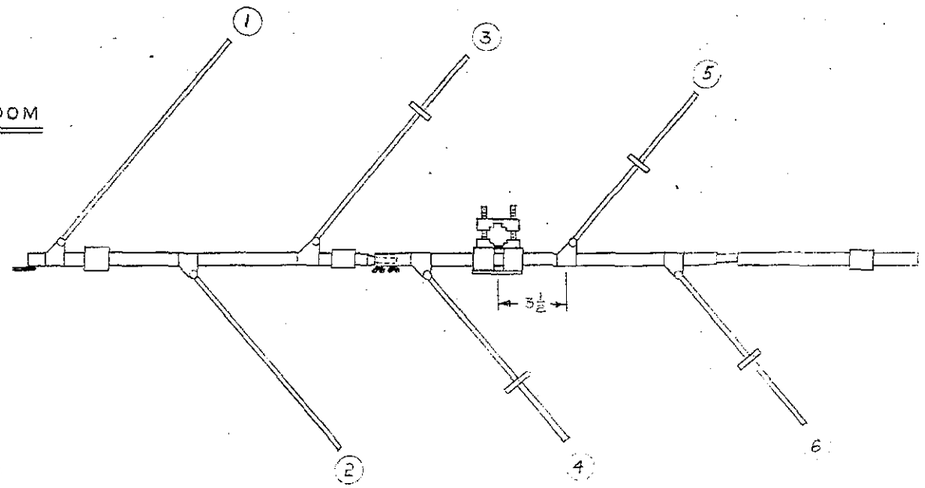
DRAWN	CHECKED	ENG. APP.	PROD. APP.
R.L.CATES			
7-21-66			

JFD ELECTRONICS CORP.
BROOKLYN 19, N.Y.

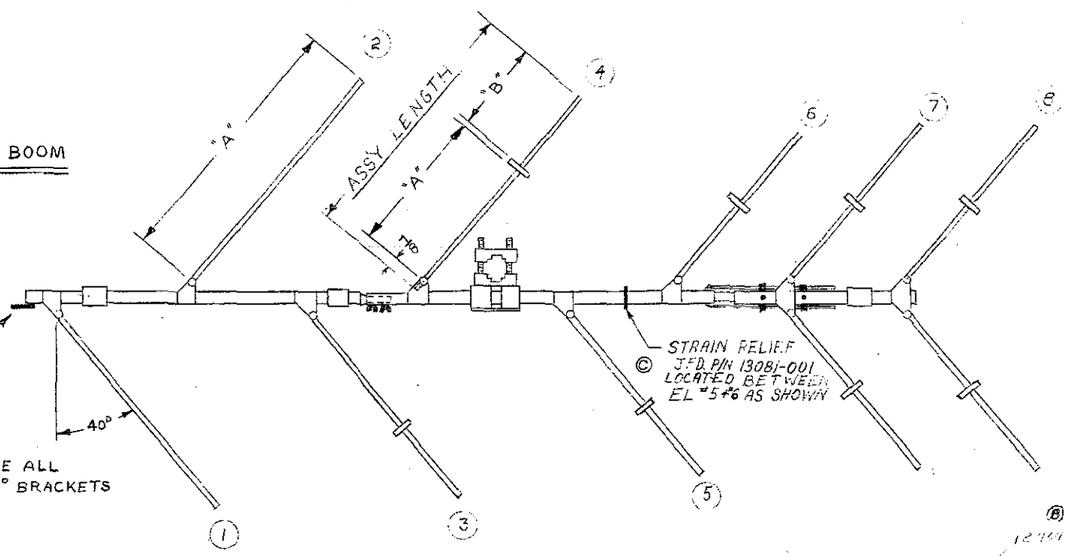
DATE OF PRINTING: DEC 13 1966
NEXT ASSEMBLY:
DRAWING NO. 01002040

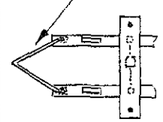
REV.	DESCRIPTION	DATE	APP.
A	ADDED PT.# 12954-0001 REMOVED PT.# 12463-0101	3-2-66	
B	REMOVED PT.# 12954-0001 ADD'D PT.# 12464-0101 ADDED PARTS LIST	4-4-66	
C	ADDED STRAIN RELIEF P/N 1381-0001 IBM P/N 0100107900	6-6-66	

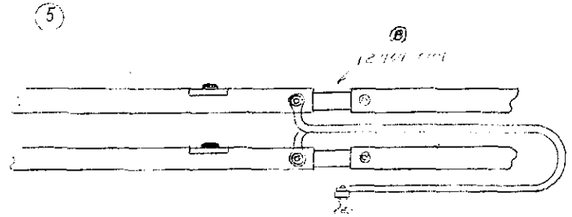
TOP BOOM



BOTTOM BOOM







00282

BOX SIZE : $7\frac{1}{2} \times 6\frac{1}{2} \times 9\frac{3}{4}$
PAD SIZE : 7x7x42
SHIPPING WEIGHT : 11 LBS. 8 OZS.

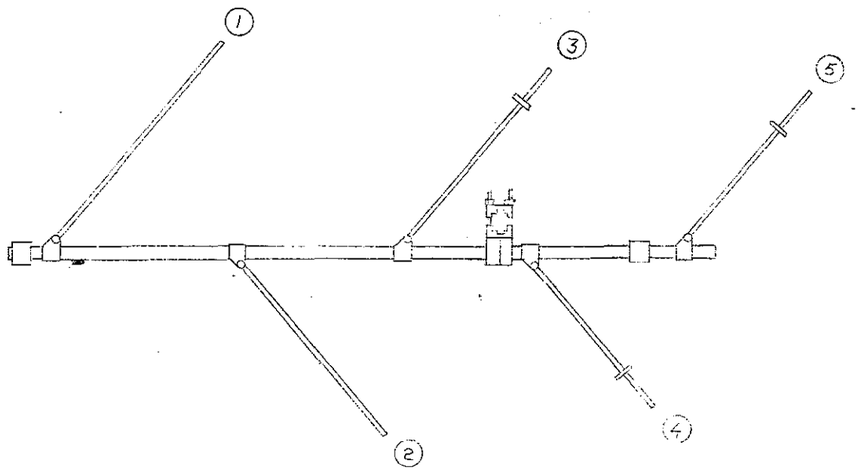
ITEM NO.	NO. REQ'D	PART NO.	DESCRIPTION	MATERIAL	SPECIFICATION	NOTE

SCALE: NONE	TOLERANCES UNLESS OTHERWISE SPECIFIED FRACTIONAL ± 1/64 DECIMAL ± .005 ANGULAR ± 1/2°	LPV TV 7		DATE OF PRINTING DEC 15 1966
NO. REQ'D PER ASSEMBLY:				NEXT ASSEMBLY
MATERIAL:		DRAWN: McGINNIS 8-5-65	CHECKED / ENG. APP. / PROD. APP.	
HEAT TREAT:				DRAWING NO.
FINISH:		JFD ELECTRONICS CORP. BROOKLYN 19, N.Y.		55040

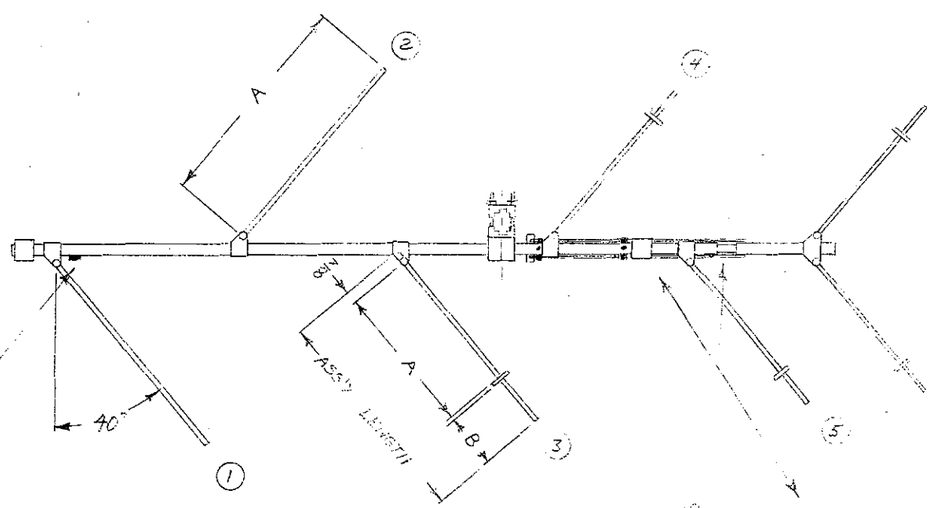
© IBM 0100107000

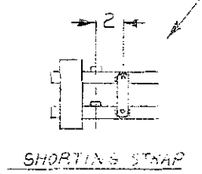
REV.	DESCRIPTION	DATE	APP.
A	ADDED PT# 12954-0001 REMOVED PT# 12464-0101	3-7-66	
B	REMOVED PT # 12954-0001 ADDED PT # 12464-0101 REMOVED BALUN ASSY ADDED HARNESS ASSY	4-1-66	
C	ADDED IBM ASSY NO 0100105000	6-6-66	

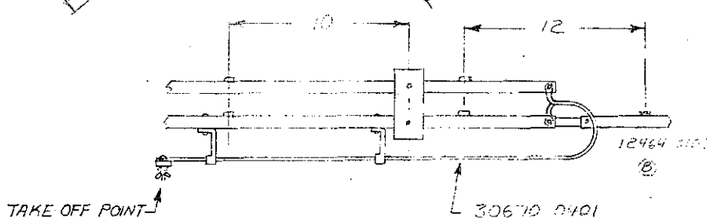
TOP BOOM



BOTTOM BOOM







00281

BOX SIZE 7½ x 6½ x 1½
ENVELOPE 7 x 7 x 42
ANT. WEIGHT 5 LBS. 12 OZ.
SHIPPING WEIGHT 10 LBS. 12 OZ.

ITEM NO.	NO. REQ'D	PART NO.	DESCRIPTION	MATERIAL	SPECIFICATION	NOTE

SCALE: NONE
NO. REQ'D PER ASSEMBLY:
MATERIAL:
HEAT TREAT:
FINISH:

TOLERANCES UNLESS OTHERWISE SPECIFIED
FRACTIONAL ± 1/64
DECIMAL ± .005
ANGULAR ± 1/2°

LPV-TV5
ASSY

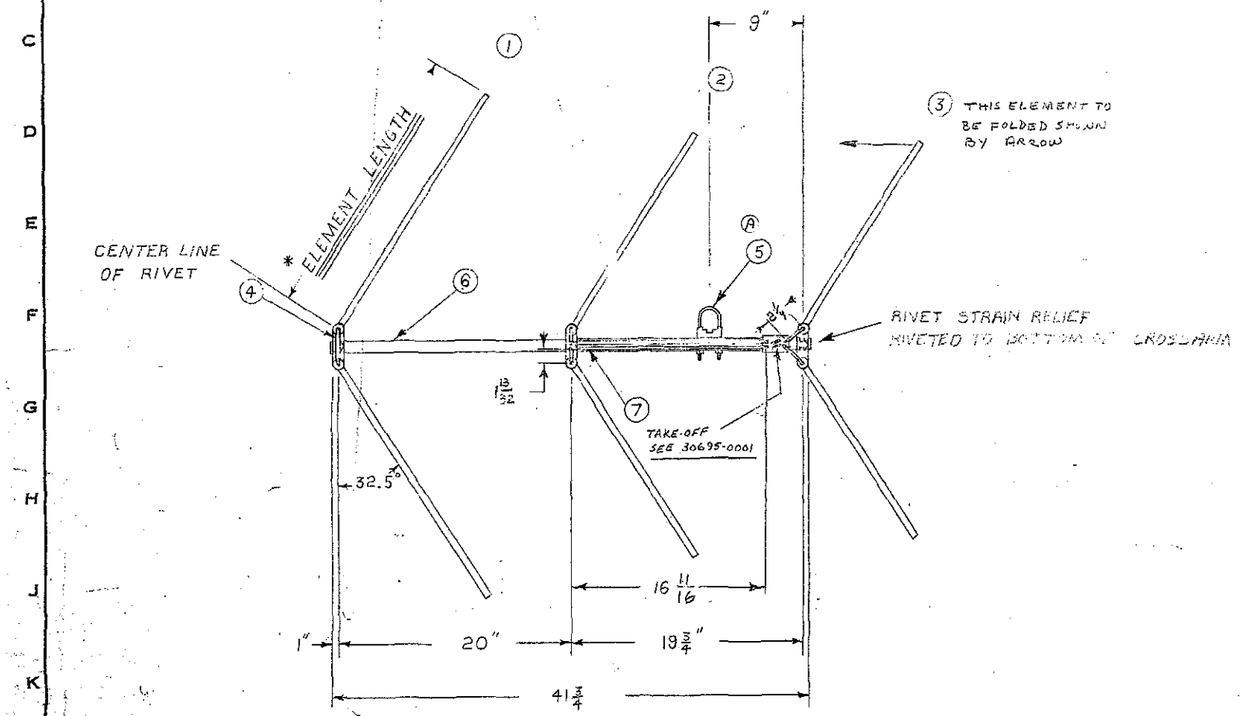
DRAWN	CHECKED	ENG. APP.	PROD. APP.
W.M.N. 10-17-65			

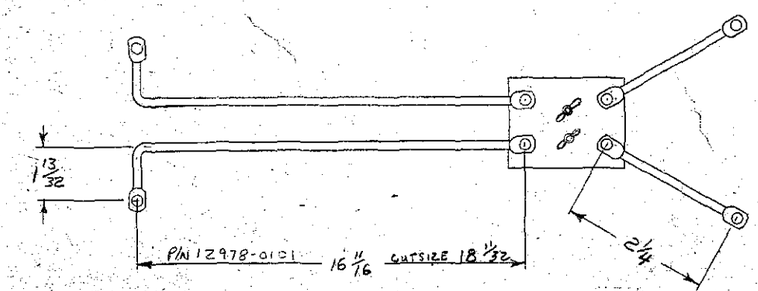
JFD ELECTRONICS CORP.
BROOKLYN 19, N. Y.

DATE OF PRINTING: DEC 15 1966
NEXT ASSEMBLY:
DRAWING NO. 55050

© JFD ELECTRONICS CORP.

REV.	DESCRIPTION	DATE	APP.
A	ITEM 5 WAS DOUBLE U-BOLT ASSY	12-10-65	





HARNESS ASS'Y

00280

Box no. 68
Ref 25 3/4

ANT. WEIGHT 2LB, 10OZ.

ITEM NO.	NO. REQ'D	PART NO.	DESCRIPTION	MATERIAL	SPECIFICATION	NOTE
8	2		LINK			
7	2		HARNESS			
6	1		CROSSARM SQ.			
5	1		SINGLE U-BOLT			
4	1		SHORTING STUB			
1 TO 3	6		ELEMENT			

SCALE: NONE
NO. REQ'D PER ASSEMBLY:
MATERIAL:
HEAT TREAT:
FINISH:

TOLERANCES UNLESS OTHERWISE SPECIFIED
FRACTIONAL ± 1/64
DECIMAL ± .005
ANGULAR ± 1/2°

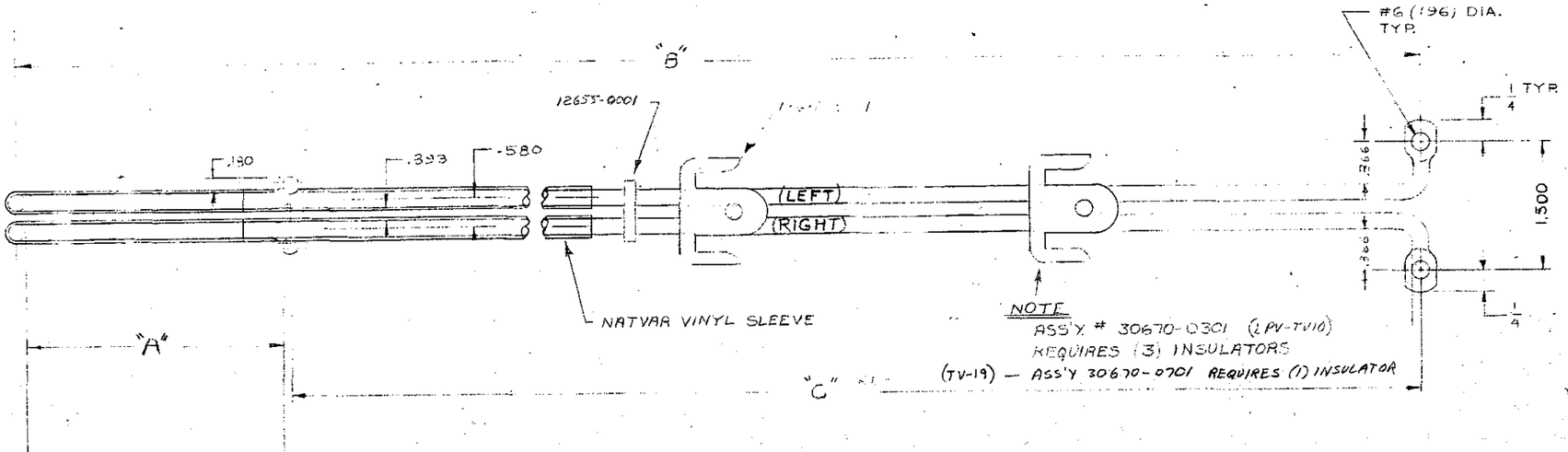
LPV-TV-3 ASS'Y DWG

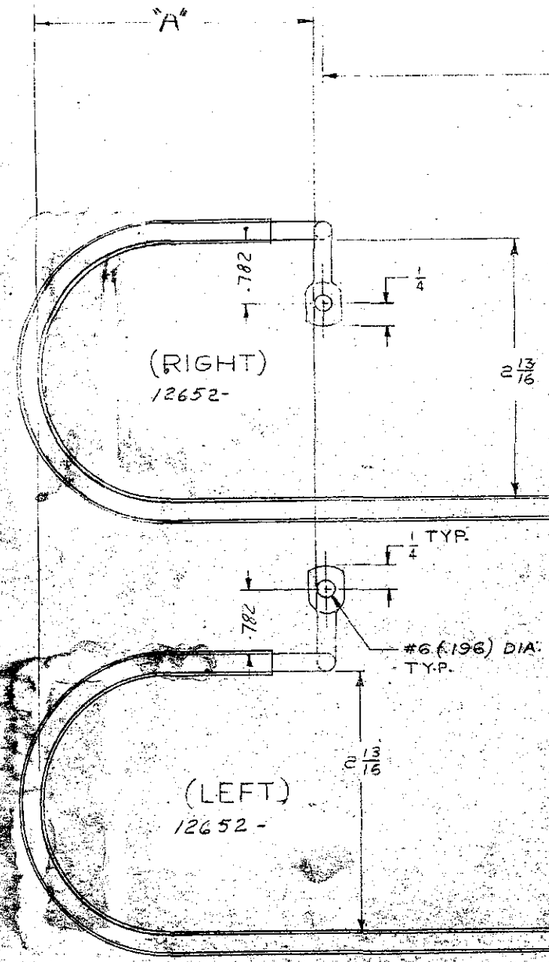
DRAWN	CHECKED	ENG. APP.	PROD. APP.

JFD ELECTRONICS CORP.
BROOKLYN 19, N.Y.

DATE OF PRINTING: DEC 13
NEXT ASSEMBLY:
DRAWING NO. 55060

REV.	DESCRIPTION	DATE	APP.





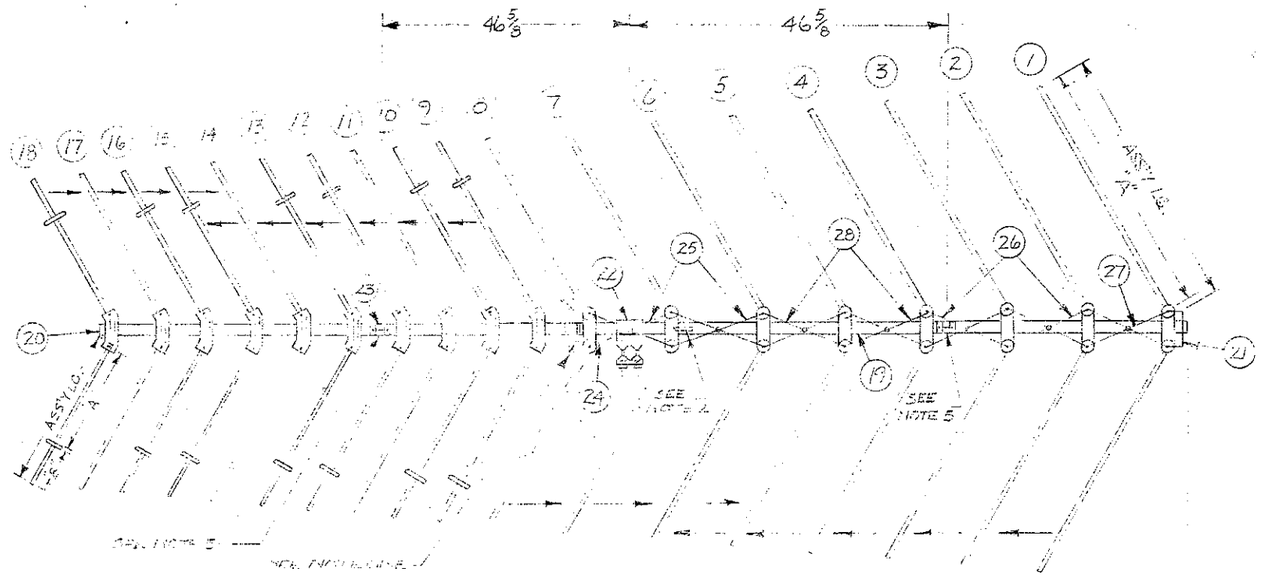
00279

ITEM NO.	NO. REQ'D	PART NO.	DESCRIPTION	MATERIAL	SPECIFICATION
SCALE: FULL		TOLERANCES UNLESS OTHERWISE SPECIFIED FRACTIONAL ± DECIMAL ± ANGULAR ±	WIRING HARNESS LPV-TV		
MATERIAL: .187 DIA. ALUM (6201-T81)			DRAWN: [illegible] 3-31-66	CHECKED	ENG. APP.	MFG. APP.
HEAT TREAT						
FINISH						
NEXT ASSY						
APPLICATION						

[illegible] ELECTRONICS CORP.

30670-

REV.	DESCRIPTION	DATE	APP.
A	ITEMS 1 THRU 17 WERE ZEACH	11-1-66	



NOTES:

1- X-X TAKE OFF POINT
2- STRAIN RELIEF P/N 11881-0101 RIVETED TO UNDERSIDE OF CROSSARM AS SHOWN.
3- ——→ INDICATES FOLDING ACTION OF ELEMENTS
4- FOR BOOM BRACE SEE DWG. No. 11084-1501
5- E.C.N. BRACE KIT ITEM # 23 P/N 12368-0001 TO BE ATTACHED TO CROSSARMS IN PAIRS, ONE ON TOP & ONE ON BOTTOM OF CROSSARM AS SHOWN.

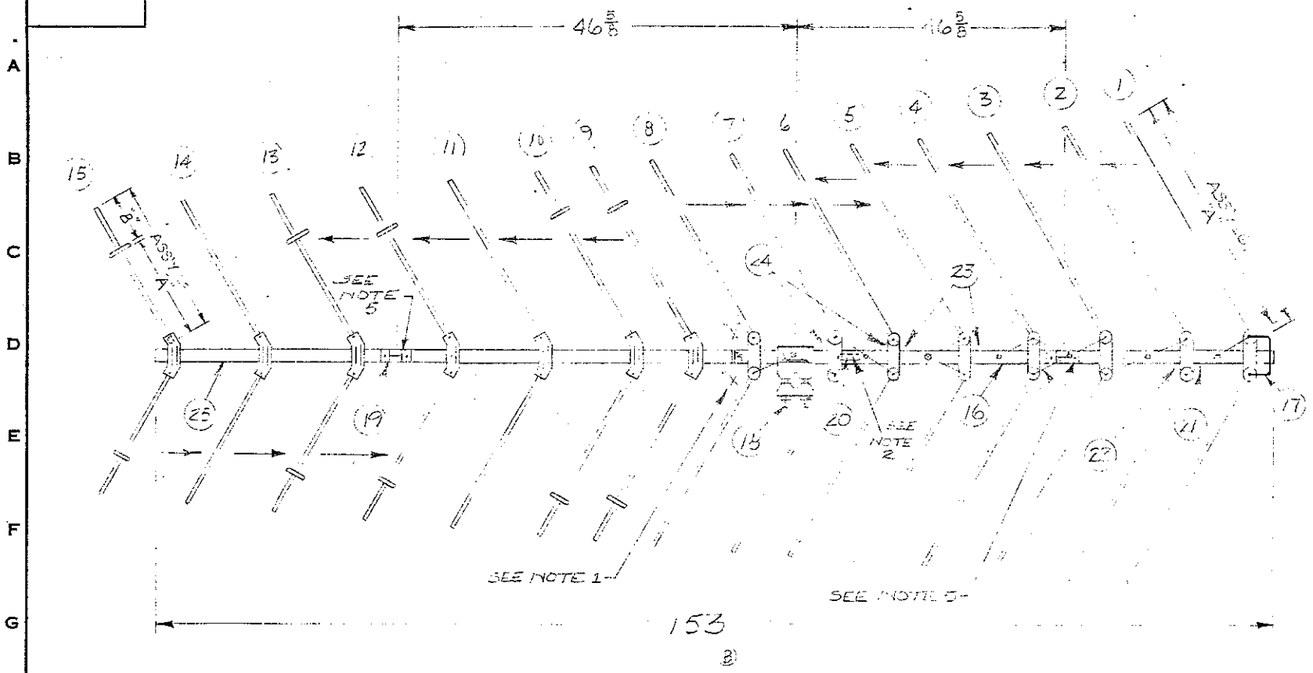
ANT. BAR TON SIZE ..... 6¾ x 6¾ x 90°
ANT. WEIGHT ..... APROX.
SHIPPING WEIGHT ..... APROX.
OVERALL CROSSARM LG. - 120
TURNING RADIUS .....
LONGEST EL. TIP TO TIP - 91"

00278

ITEM NO.	NO. REQ'D	PART NO.	DESCRIPTION	MATERIAL	SPECIFICATION	NOTE
28	2	30403-0301	HARNESS ASS'Y COLOR CODE LT BLUE			
27	1	30403-1001	HARNESS ASS'Y COLOR CODE GREEN			
26	2	30403-0201	HARNESS ASS'Y COLOR CODE LT TURQ.			
25	2	30403-0401	HARNESS ASS'Y COLOR CODE SILVER			
24	1	ITEM-0101	STRAIN RELIEF POLY			
23	4	12368-0001	BOOM BRACE BRACKET ALUM.			
22	1	30379-0101	DOUBLE U-BOLT ASS'Y			
21	1	11896-0501	SHORTING STUB ALUM.			
20	1	12304-0201	CROSSARM FRONT 1"SQ X.035 ALUM.			
19	1	12304-0101	CROSSARM REAR 1"SQ X.035 ALUM.			
11,14,& 17	1 EA.	30765-0001	LPV PARASITE EL. ASS'Y.			
9 THRU 13, 15 & 16 & 18	1 EA.	30764-0001	PARASITE EL. ASS'Y W/UHF DISC CAP.			
1 THRU 8	1 EA.	30759-0001	LPV EL. ASS'Y			

SCALE: NONE	TOLERANCES UNLESS OTHERWISE SPECIFIED FRACTIONAL ± 1/64 DECIMAL ± .005 ANGULAR ± 1/2°	LPV-17L W/UHF CAPACITOR CONST.	DATE OF PRINTING DEC 1 4 1966
NO. REQ'D PER ASSEMBLY: ~			NEXT ASSEMBLY
MATERIAL: ~		DRAWN S. Hatley 10-21-66 / CHECKED / ENG. APP. / PROD. APP.	DRAWING NO.
HEAT TREAT: ~		JFD ELECTRONICS CORP. BROOKLYN 19, N.Y.	01000170
FINISH: ~			

REV.	DESCRIPTION	DATE	APP.
A	REVISED & REDRAWN	10-25-66	
B	153 WAS 151 5/8	11-10-66	



NOTES:

1- X - X TAKE-OFF POINT
2- STRAIN RELIEF P/N 11881-0101 RIVETED TO UNDERSIDE OF CROSSARM AS SHOWN.
3- ——→ INDICATES FOLDING ACTION OF ELEMENTS.
4- TOP BOOM BRACE SEE DWG. NO. 11084-0101
5- BOOM BRACE BKT. ITEM # 19 P/N 12368-0001 TO BE ATTACHED TO CROSSARMS IN PAIRS, ONE ON TOP & ONE ON BOTTOM OF CROSSARM AS SHOWN.

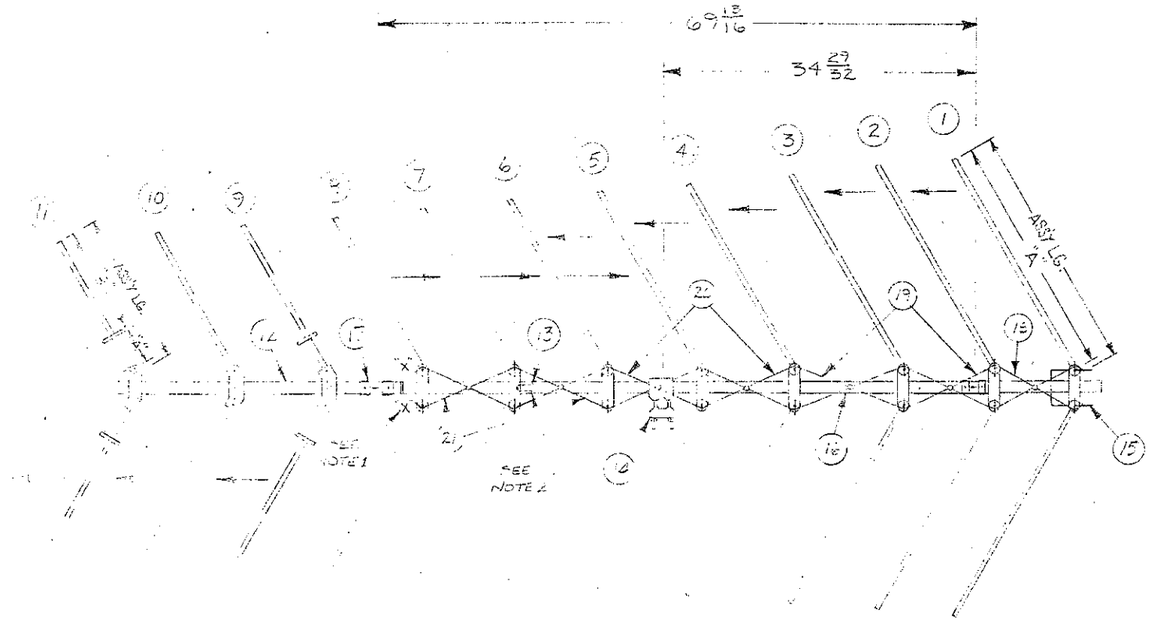
00277

ANT. CARTON SIZE —— 6 3/4 X 6 1/2 X 96
ANT. WEIGHT —— APPROX. 11 LBS.
SHIPPING WT. —— APPROX. 14 LBS.
OVERALL CROSSARM LG. —— 151 5/8
TURNING RADIUS —— 88"
LONGEST EL. TIP TO TIP —— 91"

ITEM NO.	NO. REQ'D	PART NO.	DESCRIPTION	MATERIAL	SPECIFICATION	NOTE
25	1	12301-0201	CROSSARM FRONT 1"SQ. X.035 ALUM.			
24	2	30403-0401	HARNESS ASS'Y COLOR CODE SILVER			
23	2	30403-0301	HARNESS ASS'Y COLOR CODE LT. BIEGE			
22	2	30403-0201	HARNESS ASS'Y COLOR CODE LT. TURQ.			
21	1	30403-1001	HARNESS ASS'Y COLOR CODE GREEN			
20	1	11881-0101	STRAIN RELIEF POLY.			
19	4	12368-0001	BOOM BRACE BRACKET ALUM.			
18	1	30398-0101	DOUBLE U-BOLT ASS'Y			
17	1	11896-0501	SHORTING STUB ALUM.			
16	1	12301-0101	CROSSARM REAR 1"SQ X.035 ALUM.			
11 THRU 14	1 EA.	30765-0001	PARASITE EL. ASS'Y			
9,10,12,13 & 15	1 EA.	30764-0001	PARASITE EL. ASS'Y W/UHF DISC CAP.			
1 THRU 8	1 EA.	30759-0001	LPV EL. ASS'Y			

SCALE: NONE	TOLERANCES UNLESS OTHERWISE SPECIFIED FRACTIONAL ± 1/64 DECIMAL ± .005 ANGULAR ± 1/2°	LPV - 14L W/UHF CAP. CONSTRUCTION.	DATE OF PRINTING DEC 14 1966
NO. REQ'D PER ASSEMBLY:			NEXT ASSEMBLY
MATERIAL:		DRAWN: G. Hatfield 10-24-66 / CHECKED / ENG. APP. / PROD. APP.	
HEAT TREAT:			DRAWING NO.
FINISH:		JFD ELECTRONICS CORP. BROOKLYN 19, N.Y.	01000140

REV.	DESCRIPTION	DATE	APP.



NOTES:
1. X-X TAKE OFF POINT.
2. STRAIN RELIEF P/N 11881-0101 RIVETED TO UNDERSIDE OF CROSSARM AS SHOWN.
3. ← → INDICATES FOLDING ACTION OF ELEMENTS.
4. FOR BOOM BRACE SEE DRAWING NO. 064-1501

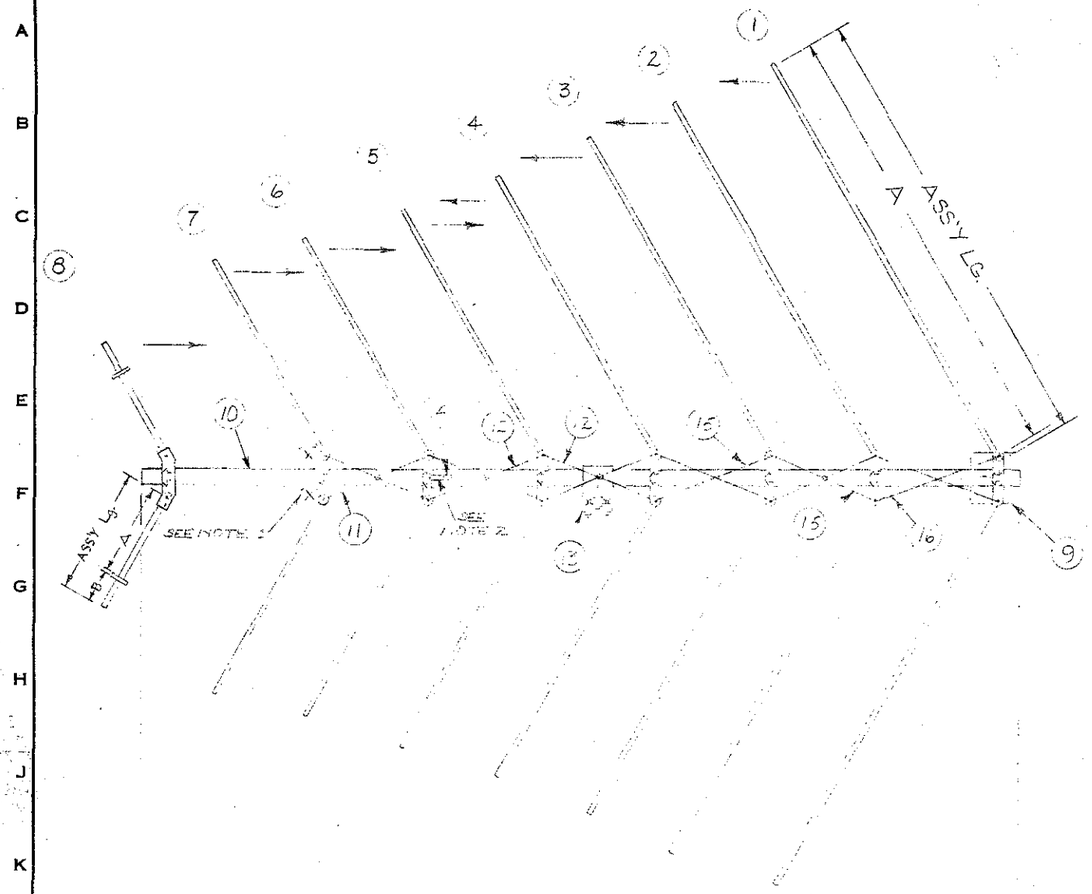
ANT. CONN. SIZE — .625 x .625 x .96
ANT. STUB — APPROX. 9½
SHORTING JUMPER — APPROX. 12.5"
TOP END OF LG. — 0"
OVERALL EL. TIP TO TIP — 69"

02276

ITEM NO.	NO. REQ'D	PART NO.	DESCRIPTION	MATERIAL	SPECIFICATION	NOTE
21	2	30403-0401	HARNESS ASS'Y COLOR CODE SILVER			
20	2	30403-0301	HARNESS ASS'Y COLOR CODE LT. BIEGE			
19	2	30403-0201	HARNESS ASS'Y COLOR CODE LT. TURQ.			
18	1	30403-1001	HARNESS ASS'Y COLOR CODE GREEN			
17	4	12368-0001	BOOM BRACE "T" BKT.			
16	1	12024-0101	CROSSARM REAR 1" SQ. X .035 WALL ALUM.			
15	1	11998-0201	SHORTING STUB ALUM.			
14	1	30398-0101	DOUBLE U-BOLT ASS'Y.			
13	1	11881-0101	STRAIN RELIEF POLY.			
12	1	12024-0201	CROSSARM FRONT 1" SQ. X .035 WALL ALUM.			
10	1 EA.	30765-0001	PARASITE EL. ASS'Y			
9 & 11	1 EA.	30764-0001	PARASITE EL. ASS'Y. W/UHF DISC CAP.			
1 thru 8	1 EA.	30759-0001	LPV EL. ASS'Y			

SCALE: NONE	TOLERANCES UNLESS OTHERWISE SPECIFIED FRACTIONAL ± 1/64 DECIMAL ± .005 ANGULAR ± 1/2°	LPV 11 L W/UHF CAPACITOR CONST.	DATE OF PRINTING DEC 14 1966
NO. REQ'D PER ASSEMBLY: ~			NEXT ASSEMBLY
MATERIAL: ~		DRAWN: G. Hatley 10-20-66 / CHECKED / ENG. APP. / PROD. APP.	
HEAT TREAT: ~			DRAWING NO.
FINISH: ~		JFD ELECTRONICS CORP. BROOKLYN 19, N.Y.	01000110

REV.	DESCRIPTION	DATE	APP.
A	REVISED & REDRAWN	10-4-66	



NOTES:

1. X-X" TAPE OFF POINT
2. STRAIN RELIEF P/N 11881-0101 RIVETED TO UNDERSIDE OF CROSSARM AS SHOWN
3. ⊕ INDICATES FOLD VS. POSITION OF ELEMENTS

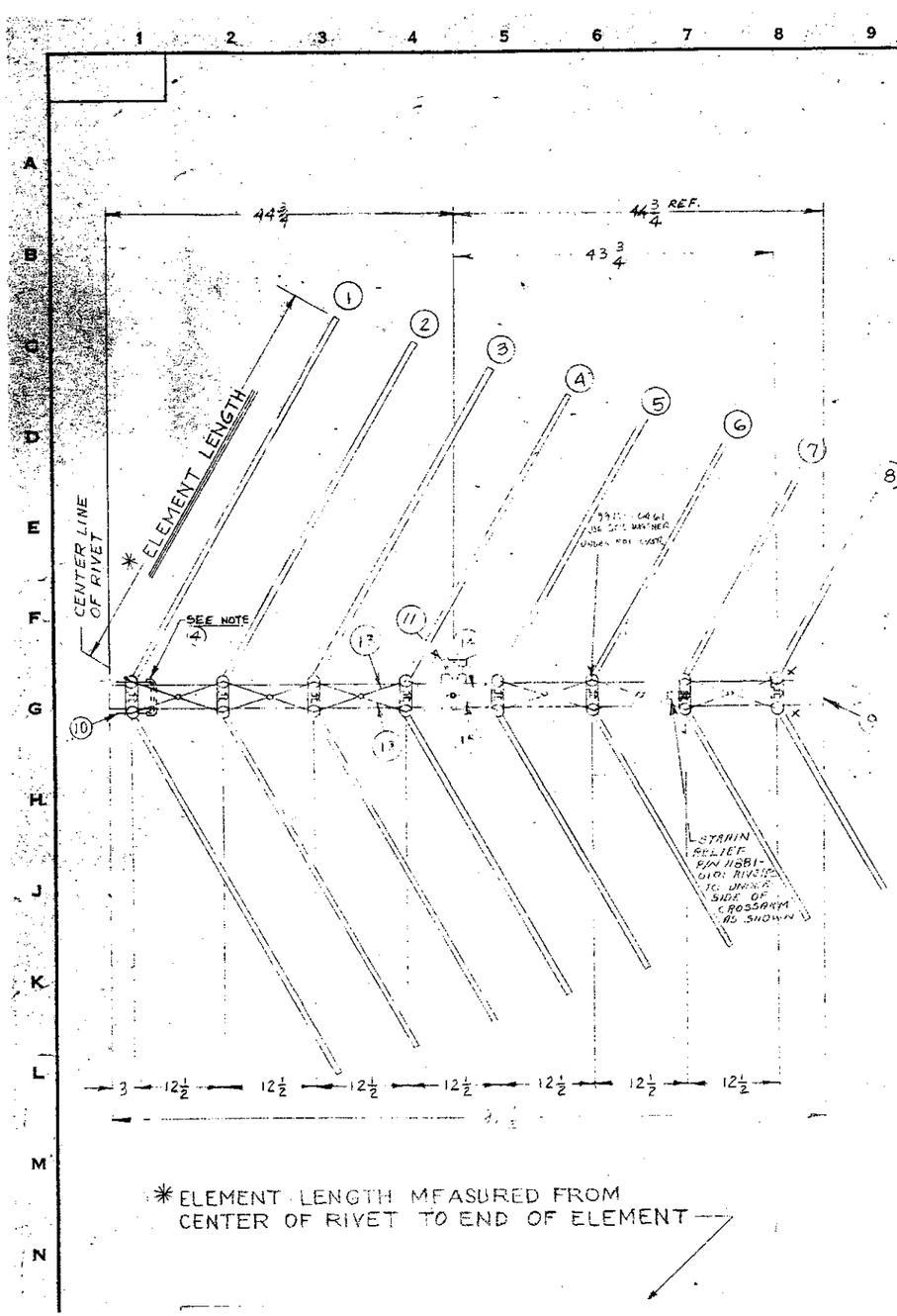
ANT CARTON SIZE	[illegible]
ANT. WEIGHT	[illegible]
SHIPPING WEIGHT	[illegible]
OVERALL CROSSARM LG.	[illegible]
TURN TO RADIUS	[illegible]
LONGEST ELEMENT TIP TO [illegible]	[illegible]

00275

ITEM NO.	NO. REQ'D	PART NO.	DESCRIPTION	MATERIAL	SPECIFICATION	NOTE
14	1	30403-1001	HARNESS ASS'Y COLOR CODE GREEN			
13	1	[illegible]	HARNESS ASS'Y COLOR CODE [illegible]			
12	1	11881-0101	STRAIN RELIEF			
11	1	30398-1101	DOUBLE U-BOLT ASS'Y			
10	2	[illegible]	HARNESS ASS'Y COLOR CODE [illegible]			
9	1	[illegible]	HARNESS ASS'Y COLOR CODE [illegible]			
8	1	[illegible]	CROSSARM			
7	2 ea.	11995-0101	SHORTING STUB			
6	2 ea.	307A-0001	PARASITE EL ASS'Y W/UHF DISC CAPACITOR			
1 - 5	2 ea.	[illegible]-0001	LPV EL ASS'Y			

SCALE: NONE	TOLERANCES UNLESS OTHERWISE SPECIFIED FRACTIONAL ± 1/64 DECIMAL ± .005 ANGULAR ± 1/2°	LPV-9L W/UHF CAP. CONSTRUCTION			DATE OF PRINTING DEC 1 4 1966
NO. REQ'D PER ASSEMBLY: ~					NEXT ASSEMBLY
MATERIAL: ~		DRAWN	CHECKED	ENG. APP.	PROD. APP.
HEAT TREAT: ~		B. HATAM 12-4-66			DRAWING NO.
FINISH: ~		JFD ELECTRONICS CORP. BROOKLYN 19, N. Y.			01000090

REV.	DESCRIPTION	DATE	BY
A	WAS NAS 6	7-14-60	
B	EL LENGTH #3 WAS 46 5/8 EL #4 WAS 40"	8-24-60	
C	46 3/4 WAS 49 3/4; 3" WAS 1" 91 1/2 WAS 89 1/2	9-14-60	
D	"U" BOLT ASS'Y WAS 30398 CHANGED TO 30398-1; MARK THE LETTER "D" ON LABELS	9-23-60	
E	CHANGED HARNESS TO SOLID WIRE .155 DIA. THE LETTER "E" WILL BE STAMPED ON ALL LABELS	9-28-60	
F	ADDED WASHER 1ST L UNDER ROLLOVER OF RIVET	10-6-60	
G	STRAIN RELIEF NOTE ADDED	10-24-60	



SHORTING STUB ITEM 12 (BEFORE BENDING)

NOTES:
1- TAKEOFF AT BOTTOM OF INSULATOR "XX"
2 COLOR CODE FOR THIS ANT. TO BE BLUE.
3- CARTON SIZE IS 118 LG x 6 5/8 x 6 7/8.
4 ANTI-WATER VAPOR PACK

THIS ANT. IS MADE WITH LPV-11 PARTS

00274

ITEM NO.	NO. REQ'D	PART NO.	DESCRIPTION	MATERIAL
15	1	11990-5	HARNESS ASSY 13 1/8 LG	
14	1	11989-5		
13	6	11956-4		
12	6	11955-4		
11	1	30398-1	"U" BOLT ASSY	
10	1	11998-2	SHORTING STUB	
9	1		CROSSARM 89 1/2	(.035 REYNOLDS)
		11833-	ELEMENT	

SCALE: NONE
NO. REQ'D PER ASSEMBLY:
MATERIAL:
HEAT TREAT:
FINISH:

TOLERANCES UNLESS OTHERWISE SPECIFIED
FRACTIONAL ± 1/64
DECIMAL ± .005
ANGULAR ± 1/2°

"LPV" (A-SAS SPECIAL" (TOPEKA HF-LP459) "H"

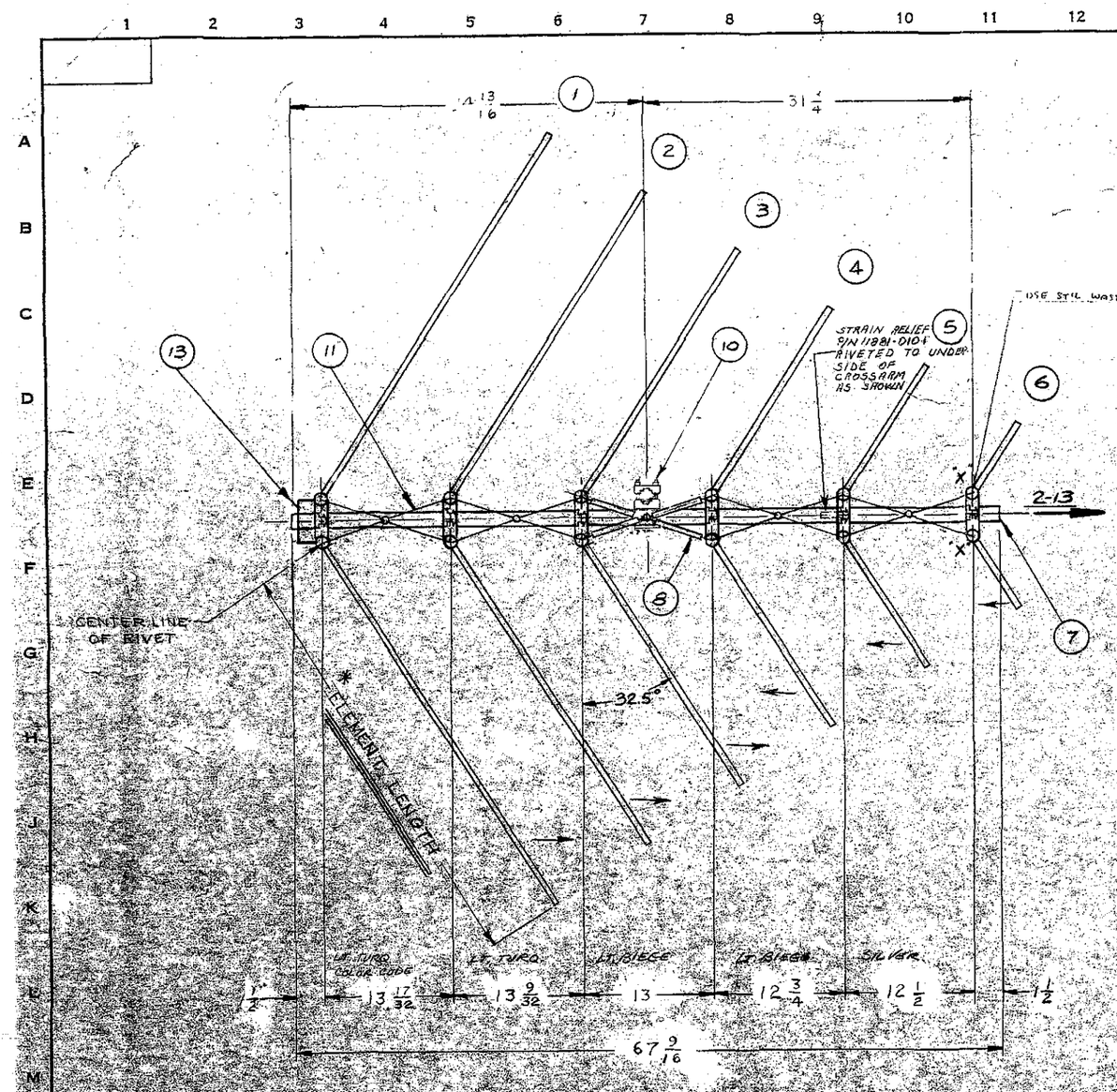
DRAWN	CHECKED	ENG. APP.	PROD. APP.
G SMAGALA 11-23-62	11-23-62		

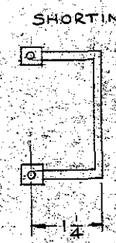
JFD ELECTRONICS CORP.
BROOKLYN, N.Y.

SPECIFICATION | NOTE
DATE OF PRINTING: DEC 14 1962
NEXT ASSEMBLY:
DRAWING NO. 50455

IBM-52663

REV.	DESCRIPTION	DATE	APP.
H	1 1/2 DIM WAS 1" 54 DIM WAS 33 1/2; 67 9/16 WAS 67.	4-10-63	
B	EL #2 LENGTH 46 1/8 WAS 46 7/16 EL #3 LENGTH 41 3/4 WAS 43	4-16-63	
C	"U" BOLT ASS'Y WAS 30398 CHANGED TO 30398-1; THE LETTER 'D' SHALL BE MARKED ON LABELS	5-2-63	
D	CROSSARM 68 WAS 67 1/2	5-7-63	
E	CHANGED HARNESS TO SOLID WIRE .155 DIA. THE LETTER 'H' SHALL BE STAMPED ON ALL LABELS	3-26-64	
F	MODIFIED SPACINGS. SEE CROSS ARM PRINT.	1-20-65	
G	ADD STL WASHER UNDER ROLLOVER OF RIVET	8-10-65	
H	ARROW SHOWS FOLDING ACTION OF EL. BOX WAS 92 1/4 LG.	8-16-66	
I	STRAIN RELIEF NOTE ADDED	8-26-66	





* ELEMENT LENGTH MEASURED FROM CENTER OF RIVET TO END OF ELEMENT

NOTE:
1. TAKE OFF AT BOTTOM OF INSULATOR XX
2. CARTON SIZE 5 3/16 X 4 3/4 X 71"
3. → INDICATES FOLDING ACTION OF EL

00373

ITEM NO.	NO. REQ'D	PART NO.	DESCRIPTION	MATERIAL	SPECIFICATION	NOTE
13	1	11896-4	SHORTING STUB 1 1/4 LG.			
11	4	[illegible]	HARNESS ASS'Y			
10	1	35398-1	DOUBLE U BOLT ASS'Y			
8	1	[illegible]	HARNESS ASS'Y			
7	1	12036	CROSSARM SQ.			
1 TO 6	12	11833	ELEMENT			

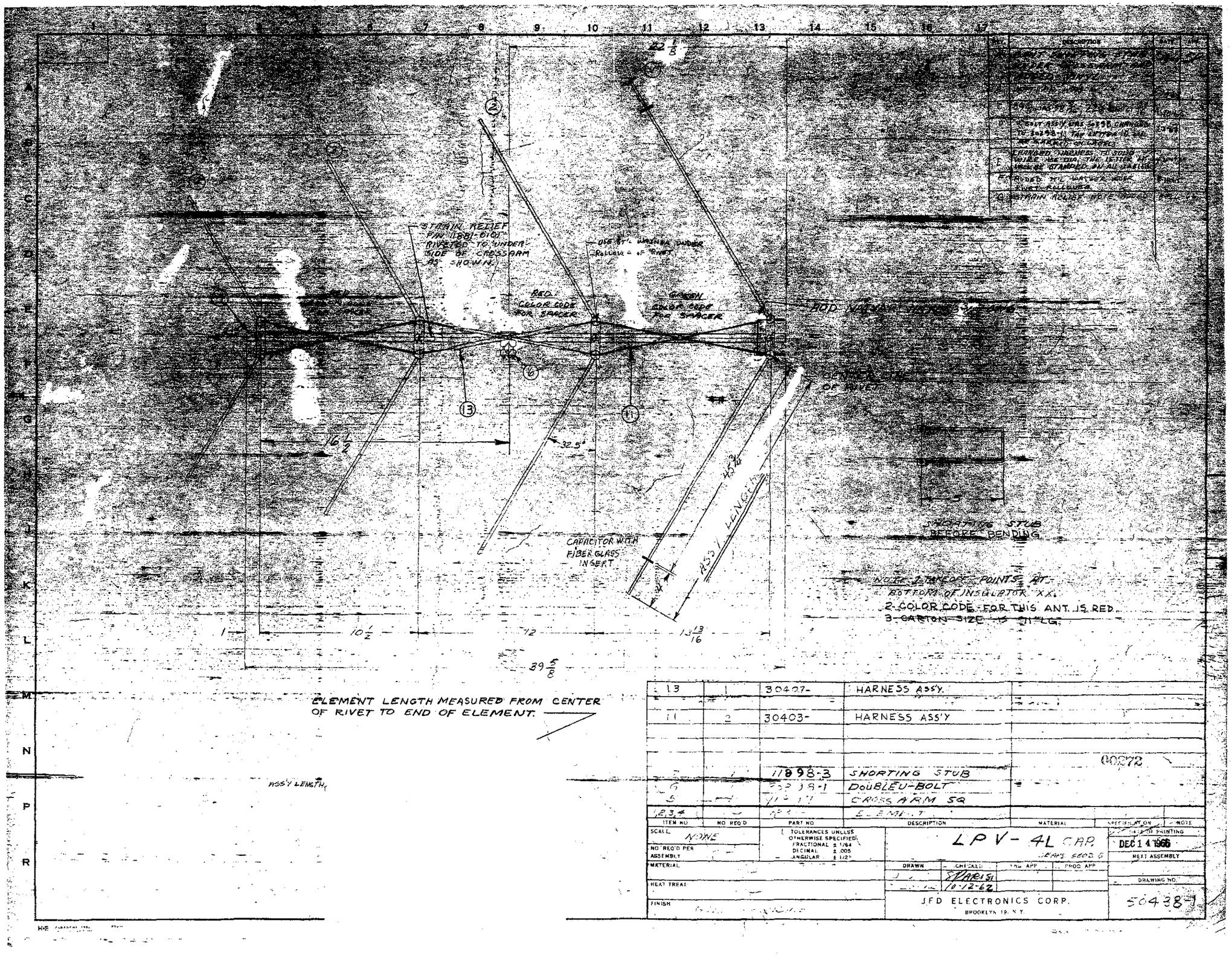
SCALE: NONE
TOLERANCES UNLESS OTHERWISE SPECIFIED: FRACTIONAL ± 1/64; DECIMAL ± .005; ANGULAR ± 1°
ENG. RECD PER ASSEMBLY
MATERIAL
HEAT TREAT
FINISH GOLD FLODINE

4 PV 6L

DRAWN	CHECKED	ENG. APPR.	PROD. APPR.
M.W.	[illegible]		
Nov. 2, 62	11-7-62		

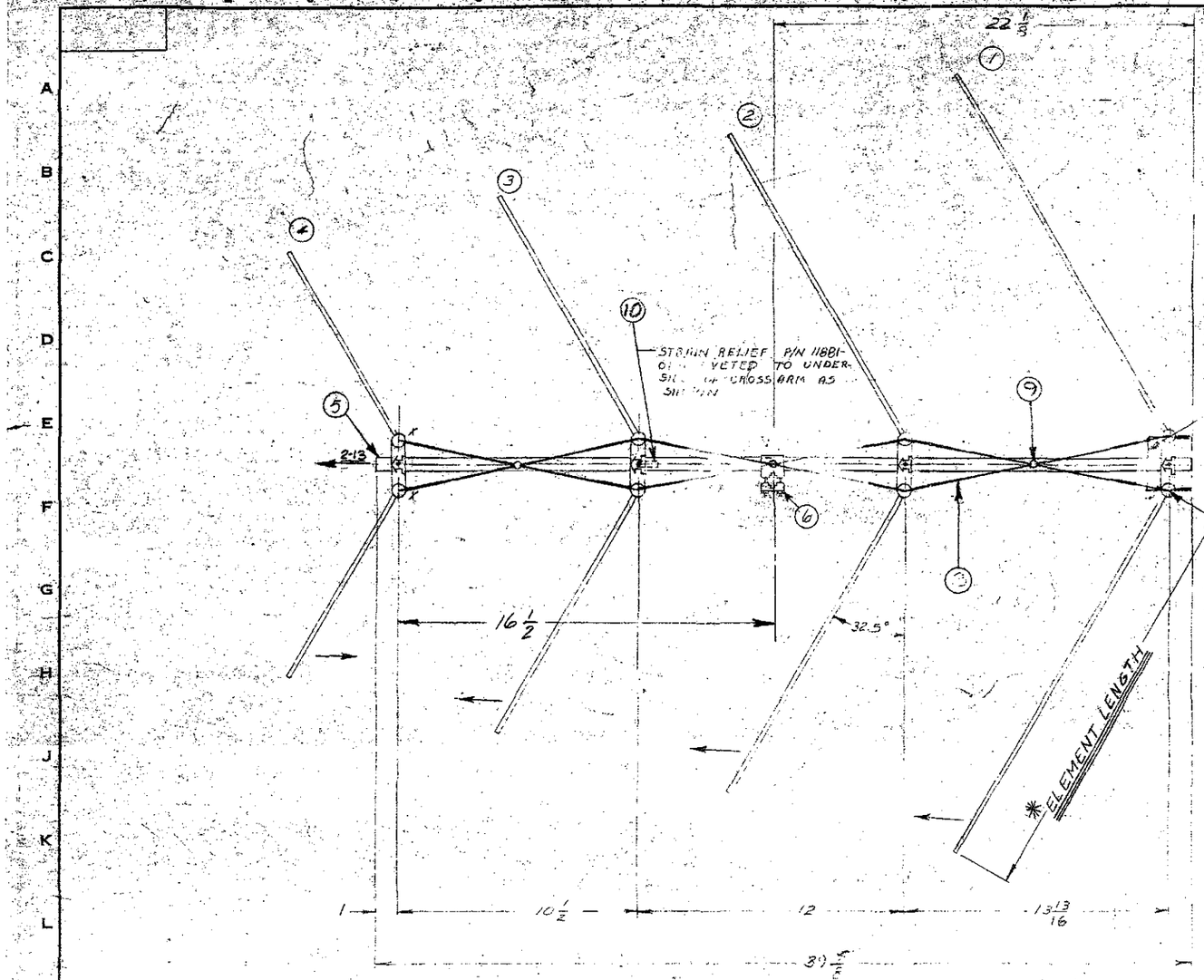
DATE OF PRINTING: DEC 14 1966
REVISED
DRAWING NO. 12N4513

RFL ELECTRONICS CORP. BOONTON, N.J.



DESCRIPTION	QTY	ITEM
[illegible]		
[illegible]		
[illegible]		

REV.	DESCRIPTION	DATE	APP.
A	BENT SHORTING STUB UNDER CROSSARM AND ADDED VINYL.	4-24-63	SD
B	NATVAR WAS 6" 26	5-7-63	
C	39 3/8 WAS 38 5/16; 27 5/8 WAS 27 13/16	9-10-63	
D	"W" BOLT ASS'Y WAS 30398 CHANGED TO 30398-1, THE LETTER 'D' WILL BE MARKED ON LABELS.	5-26-63	
E	CHANGED FINENESS TO SOLID WIRE. BE DIA. THE LETTER "H" WILL BE STAMPED ON ALL LABELS	7-25-64	
F	ADDED STL WASHER UNDER RIVET ROLLOVER	8-10-65	
G	ARROW INDICATES DIRECTION OF EL. BOX SIZE WAS 7"	8-30-66	
H	STRAIN RELIEF NOTE ADDED	8-26-66	
I	REMOVED VINYL FROM SHIELDING STUB; REMOVED COLOR CODE HARNESS ASS'Y - ADDED ONE PIECE HARNESS & BALL SPACER REMOVED REMARK "STL. WASHER UNDER RIVET ROLLOVER."	12-9-66	SD



*ELEMENT LENGTH MEASURED FROM CENTER OF RIVET TO END OF ELEMENT.

00271

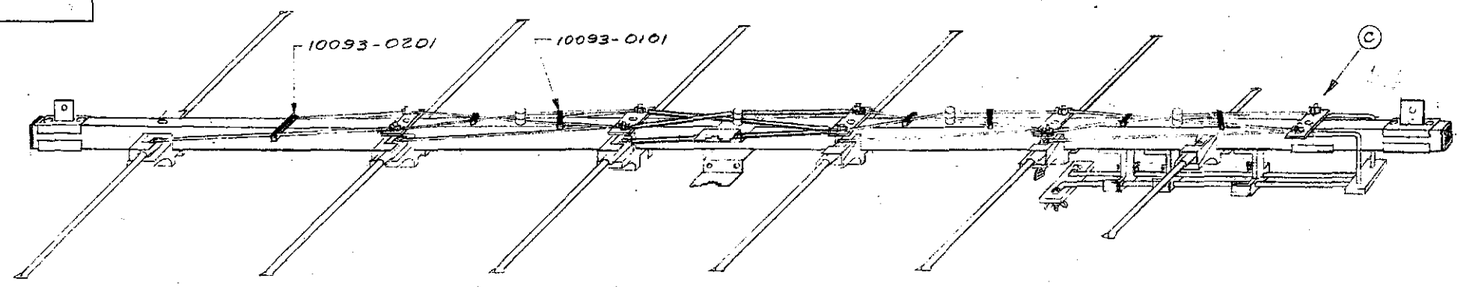
NOTE: 1. TAKE OFF POINTS AT BOTTOM OF INSULATOR XX

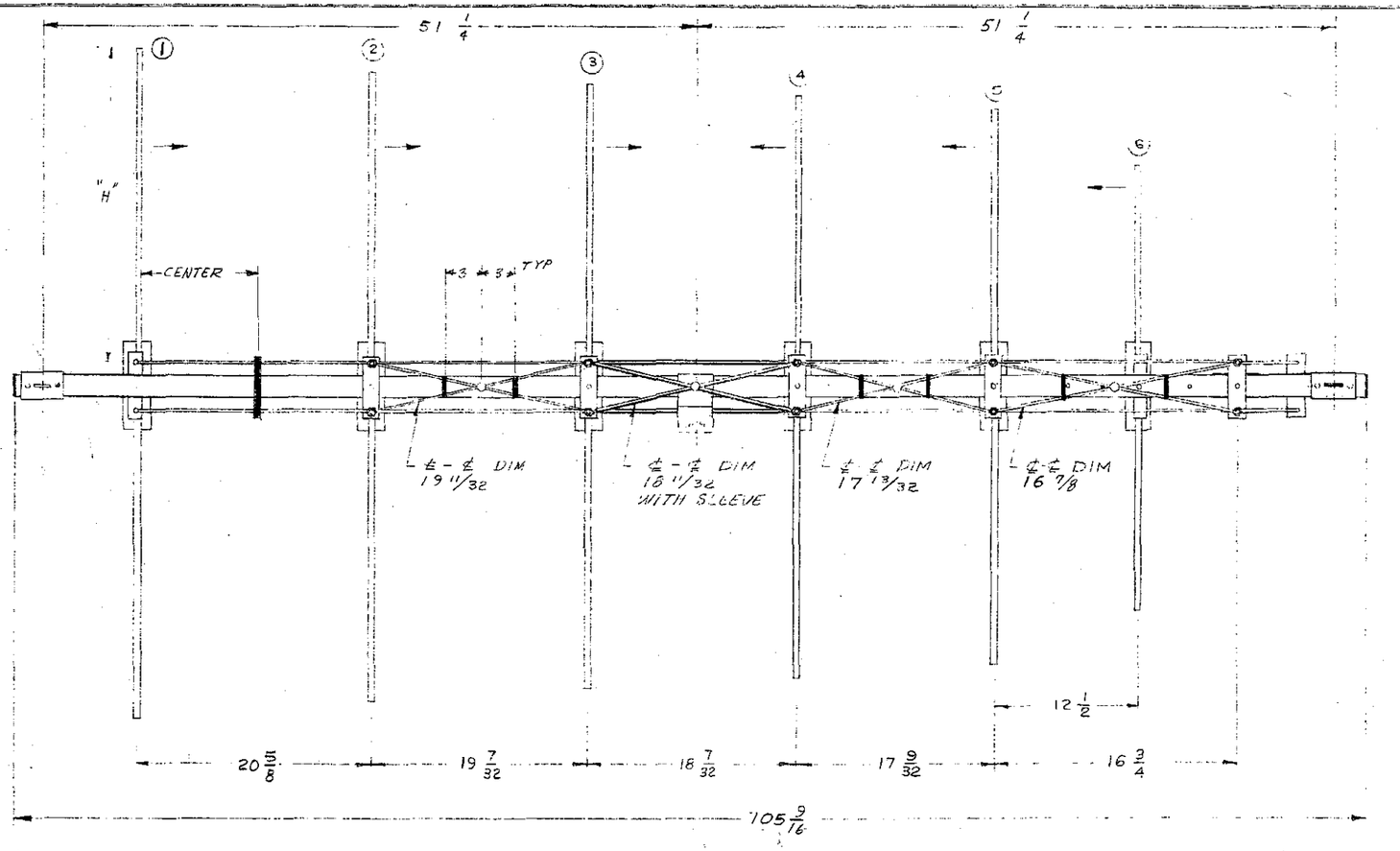
2. CARTON SIZE IS [illegible] 3/4 X 65 1/2

3. → INDICATES FOLDING ACTION OF ELEMENTS

ITEM NO.	NO. REQ'D	PART NO.	DESCRIPTION	MATERIAL	SPECIFICATION #	NOTE
[illegible]	[illegible]	11833-	[illegible]	[illegible]	[illegible]	
[illegible]	[illegible]	[illegible]

REV.	DESCRIPTION	DATE
A	40 WAS 41 1/2	6-11-64
B	CHANGED NOTE: BOOM BRACES WAS ASSEMBLED TO ANT.	10-21-64
C	HEX NUTS WERE WING NUTS	10-30-64





NOTES
1. ALL ELEMENTS TO BE 1/2 IN. DIA. WITH 3/8 DIA BUTTSEAM INSERTS 12" Lg.
2. BOOMBRACE CUTSIZE - 61 3/4
3. CARTON SIZE 6 5/8 x 6 5/8 x 106 1/2 Lg.
4. BOOM BRACES TO BE PACKED IN CARTON.

00270

ITEM NO.	NO. REQ'D	PART NO.	DESCRIPTION	MATERIAL	SPECIFICATION	NOTE

SCALE: NONE

TOLERANCES UNLESS OTHERWISE SPECIFIED
FRACTIONAL ± 1/64
DECIMAL ± .005
ANGULAR ± 1/2°

NO. REQ'D PER ASSEMBLY: AS REQ'D

MATERIAL: AS REQ'D

HEAT TREAT: AS REQ'D

FINISH: GOLD IRIDITE

ASSEMBLY DWG. -PL-FM 6

DRAWN	CHECKED	ENG. APP	PROD. APP.
Walter Boyd 11-12-66			

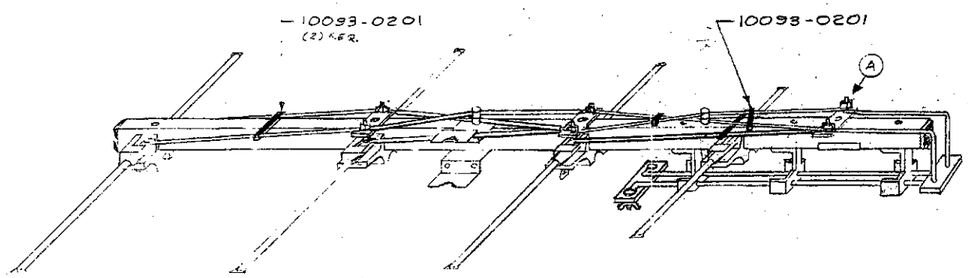
JFD ELECTRONICS CORP.
BROOKLYN 19, N.Y.

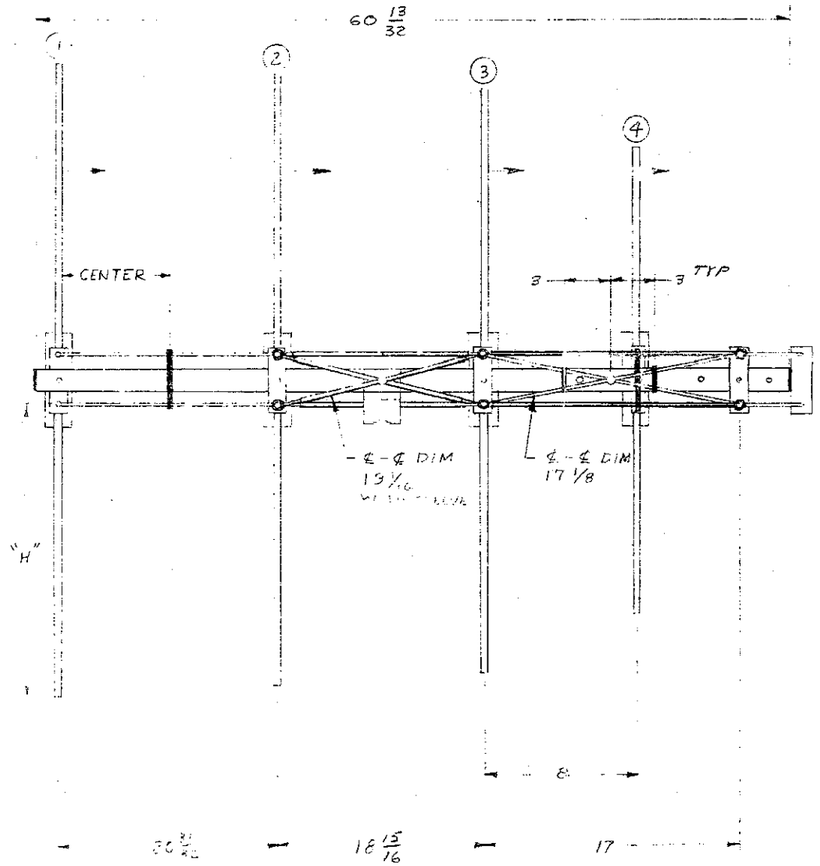
DATE OF PRINTING: DEC 15 1966

NEXT ASSEMBLY:

DRAWING NO. 52800-0001

REV.	DESCRIPTION	DATE	APP.
A	HEX NUTS WERE WING NUTS	10-30-64	





NOTE:

ALL ELEMENTS TO BE 1/2" DIA.
WITH 3/8 DIA. BUTTSEAM INSERT 12" LG.

00269

ITEM NO.	NO. REQ'D	PART NO.	DESCRIPTION	MATERIAL	SPECIFICATION	NOTE

SCALE: NONE	TOLERANCES UNLESS OTHERWISE SPECIFIED FRACTIONAL ± 1/64 DECIMAL ± .005 ANGULAR ± 1/2°	ASSEMBLY DWG LPL-FM4		DATE OF PRINTING DEC 1 5 1966
NO. REQ'D PER ASSEMBLY:				NEXT ASSEMBLY
MATERIAL:		DRAWN Andrew Rose 7-13-64	CHECKED / ENG. APP. / PROD. APP.	DRAWING NO. 52830
HEAT TREAT:		JFD ELECTRONICS CORP. BROOKLYN 19, N.Y.		
FINISH: GOLD ALODINE				

tion: PERFECTION CONQUERED

We did not improve on an old antenna. We started from scratch to design a new one. *Really new.*

It wasn't easy. And it wasn't cheap. But it worked like mad.

We called it the LPV Log Periodic. Its performance caught our competitors with their charts down. But it wasn't long before they came up with LPV copies in every way—except in performance.

Meanwhile back at the JFD labs in Champaign, Illinois, our scientists and engineers continued their "assault on perfection." In 1963, they again shattered antenna precedent by coming up with the *first* combination VHF/UHF/FM log periodic antenna, the LPV-VU. Instead of three different antennas, installers now needed only *one* LPV-VU and *one* downlead.

Our competitors scoffed at the idea. They said it couldn't be done. Until the "eye-popping" results started to roll in. Then there was a mad scramble for the LPV-VU bandwagon.

These "me-too" antennas looked like the LPV-VU Log Periodic. Sounded like it, too. But their charms were skin-deep.

Only the JFD LPV-VU delivered deluxe 82-channel log periodic performance. Because only the JFD LPV-VU followed the genuine patented log periodic concept of the University of Illinois Antenna Research Laboratories. Thanks to the protection of eleven different LPV-VU U.S. patents issued and pending—more than those of any other antenna.

You would think by now our Research and Development people in Champaign would leave well enough alone. But no. These "Young Turks" have gone and done it again. This time it's a new all-band log periodic design—the LPV-CL Color Laser. (Must be that "assault on perfection" bug they've still got up their polinear recorder.)

Why did we call it the Color Laser?

Well, engineers tell us that laser light beams with their tremendous bandwidth capacity are the communications carrier of the future. And we believe that our new VHF/UHF/FM Color Laser with its extreme bandwidth, among other unique characteristics, is the antenna of the future—only it's available to you *now*. How does the Color Laser deliver unsurpassed natural color, black and white across 82 channels, and FM, too?

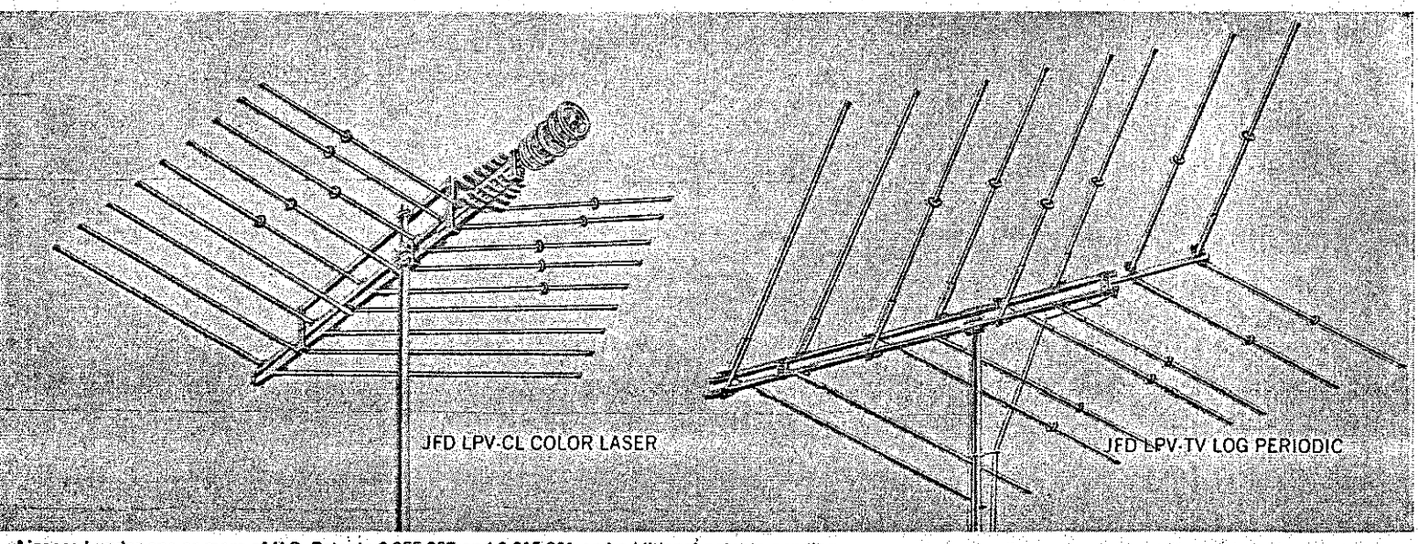
Three reasons: (1) *Patented *VHF "cap-electronic" Log Periodic V Design,* (2) *a new broad band UHF "zoned" trapezoid driver,* (3) *a new disc-on-rod UHF director system.* And there are patents issued and pending on all three.

We've also spun off the LPV "cap-electronic" Log Periodic section of the Color Laser. It forms the heart of a great new VHF antenna series we've named the LPV-TV.

This "assault on perfection" of ours involved a complete new mechanical design, as well. Results: "fast-lok" element brackets, "hot" twin booms (no lossy harnesses or transformers), new super-strength double U-bolt profiles, high reliability cylindrical capacitors, plus our electrically conductive gold alodized aluminum.

If you're the breed of professional contract installer or self-servicing appliance dealer who *never* settles for less than the best, we have a suggestion. Use a JFD LPV-CL Color Laser or LPV-TV Color Log Periodic on your next installation. See what it feels like to install the *best* of all in performance and customer satisfaction.

You will also see why our research and development people have now changed their watchword from "assault on perfection" to "perfection *conquered*".



Licensed under one or more of U.S. Patents 2,955,287 and 3,015,821 and additional patents pending.

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1348 El Camino Real
San Carlos, California

WHOLESALE RADIO & ELECTRIC SUPPLY COMPANY
1116 Folsom Street
San Francisco, California 94103
Also in Petaluma

Antenna Laboratory Report No. 66-11

Wave Propagation on Smooth and Periodic Structures and Applications to Antenna Design

NASA Grant No. NGR 14-005-043

Prepared by

Antenna Laboratory
Electrical Engineering Department
University of Illinois
Urbana, Illinois

P. E. Mayes, Editor

for

Goddard Space Flight Center
Greenbelt, Maryland

successful unidirectional frequency independent antennas follows directly from the shape of the dispersion curve for the uniform periodic structures.

The first development of wire outline versions of log-periodic antennas was done primarily by DuHamel and his co-workers at Collins Radio.[53,54] Figure 33 shows some of the modifications which were made to convert the first unidirectional log-periodic antennas into structures which would be practical for applications in the high frequency communications band--6 to 30 megahertz. Most of the conductor has been eliminated from the elements, leaving only a central boom and the edges of the elements. The element shape has been changed from circular arc to straight line. The essential properties are retained, however, due to the common scale factor associated with the dimensions of any two adjacent elements.

Another very practical form of the antenna was developed by Isbell.[55] Although he proceeded along a different line of reasoning, the same result is achieved if we apply several perturbations to the antenna in Figure 33. If we let the element widths become small and then allow the angle between the planes of elements to go to zero, the result is the familiar log-periodic array of dipole elements shown in Figure 34. The perturbation just described leads naturally to the transposed feeder line shown in Figure 34.

Rumsey has pointed out the common symmetry properties in a self-complementary structure and the dipole array with transposed feeder.[50] It is interesting to note that the shape of the first log-periodic antennas was governed by a desire to obtain a self-complementary structure, and this dictated the staggered location of the "teeth" on the antenna shown in Figure 31. Although the perturbations in the structure of Figure 31 which lead to the dipole array of Figure 34 are rather severe, the symmetry is maintained through the use of the transposed feeder.

4.2 Dipole Array Analysis

Using the known properties of dipole antennas in a computer program which solved an equivalent circuit for the antenna, Carrel was able to compute many of the operating characteristics of the log-periodic dipole which agree well with experimental observations.[56] For example, Figure 35 shows some radiation patterns presented by the computer in both the E- and H-planes of the antenna for frequencies which correspond to the resonant

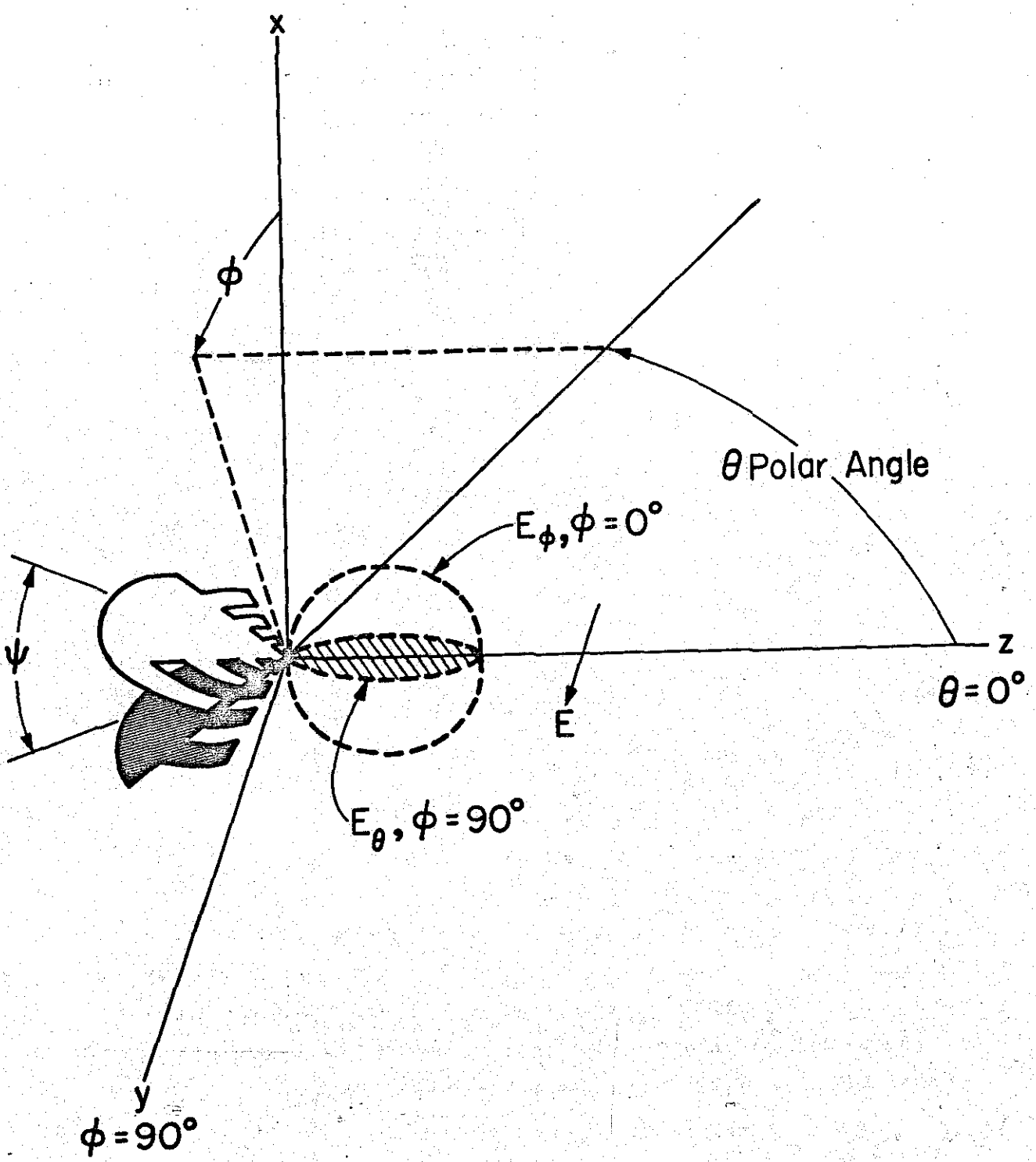

Figure 32. The first unidirectional log-periodic antenna showing the backfire beam.

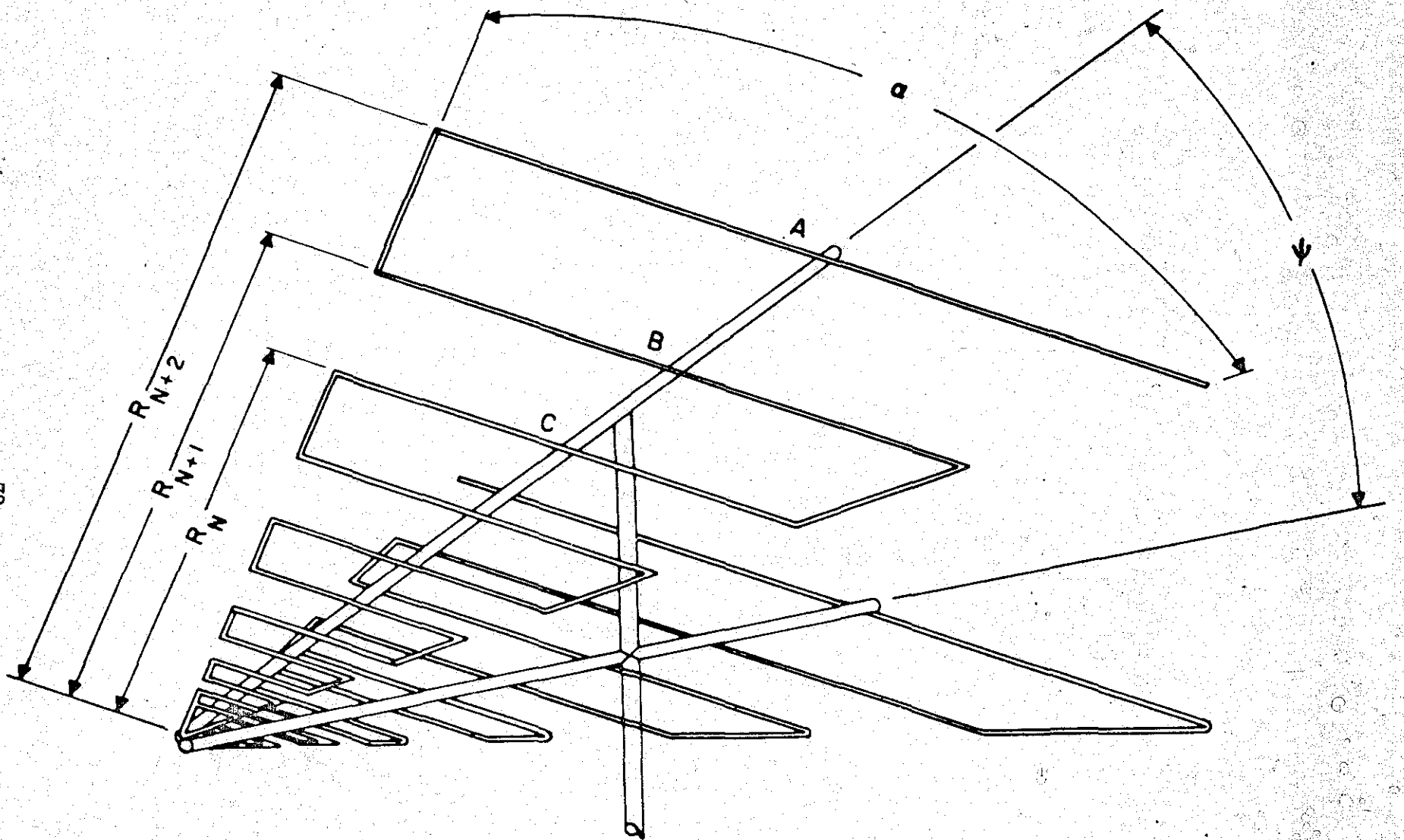

Figure 33. A wire-outline log-periodic antenna (Collins Radio Company).

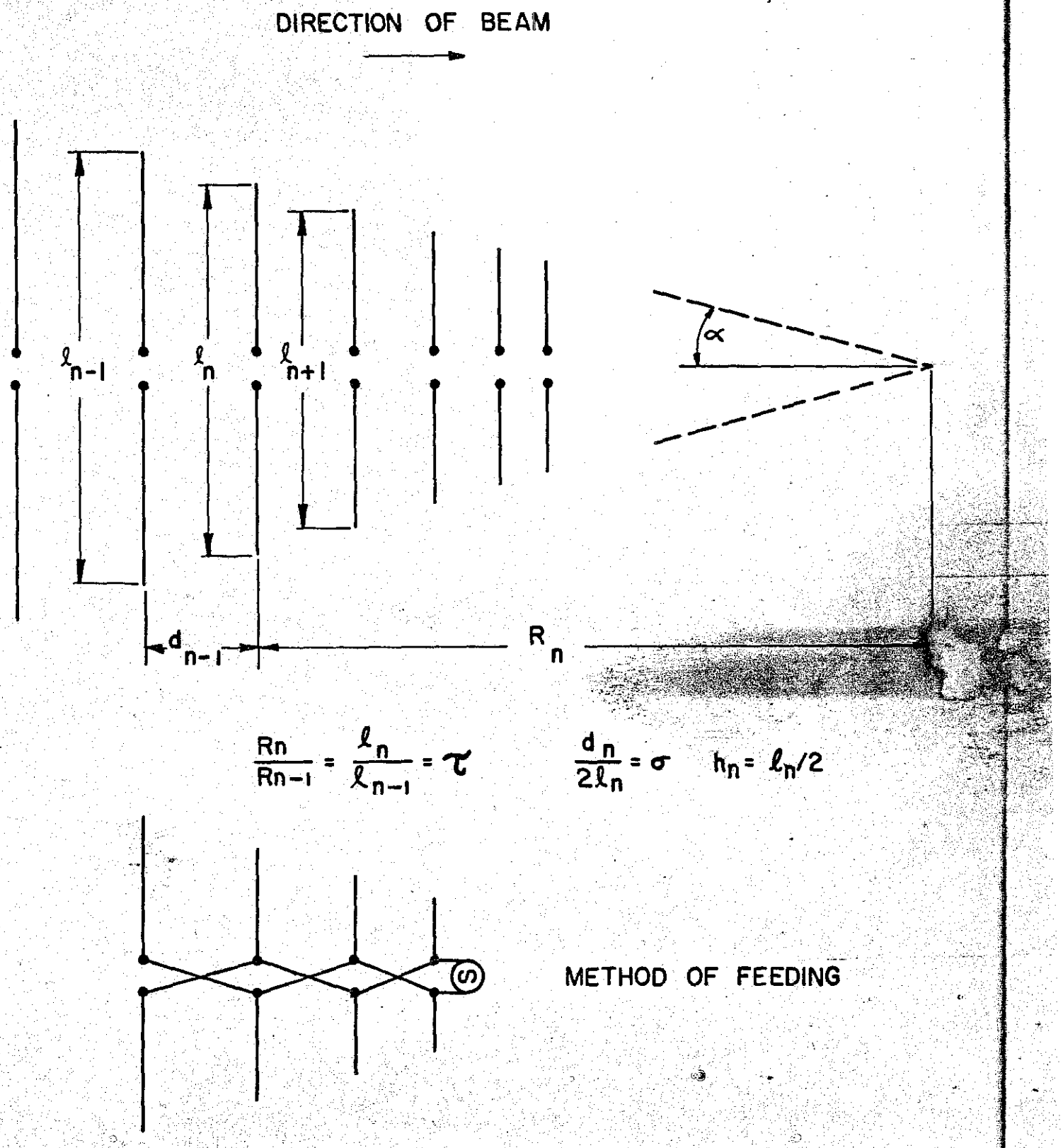

Figure 34. Schematic diagram of the log-periodic dipole array.

FORM NO. R65-0
EFFECTIVE **MAY. 1, 1965**

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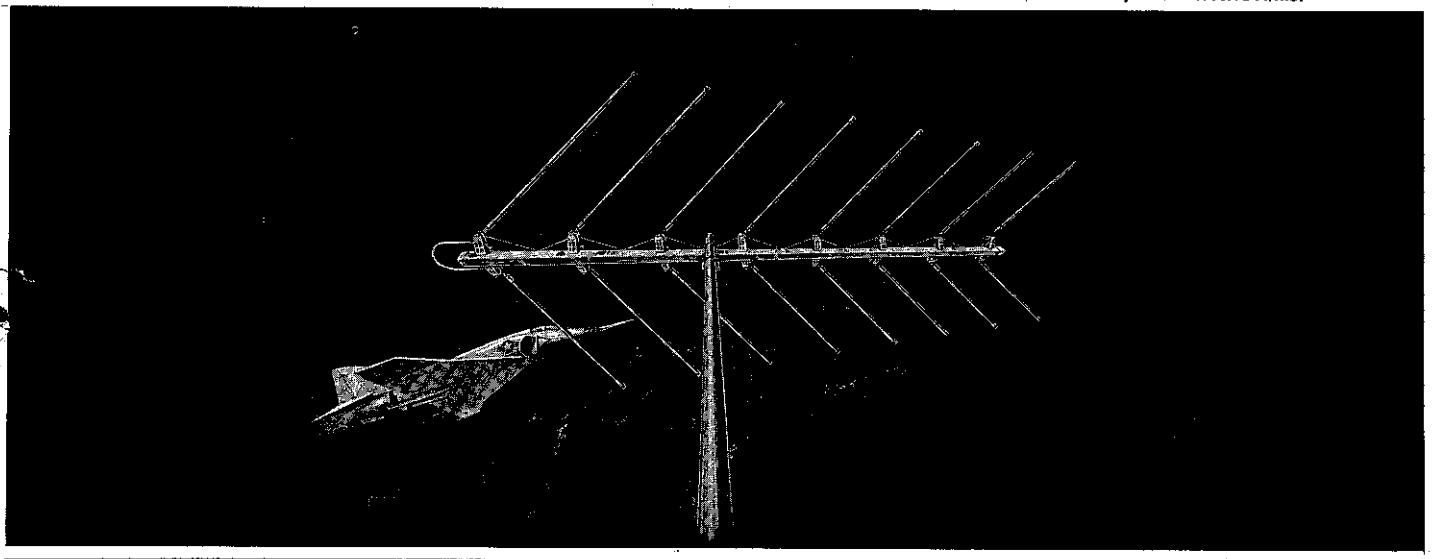
*Attractive, Anti-Corrosive Armor



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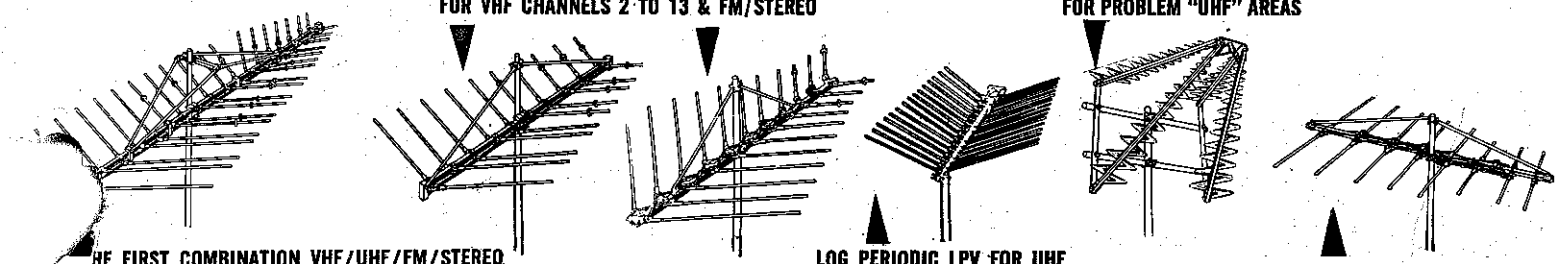
LPV LOG-PERIODICS FOR VHF CHANNELS 2 TO 13 & FM/STEREO

LOG PERIODIC ZIG-A-LOG FOR PROBLEM "UHF" AREAS



HE FIRST COMBINATION VHF/UHF/FM/STEREO LOG PERIODIC "LPV-VU"—WITH SINGLE LEAD-IN

LOG PERIODIC LPV FOR UHF CHANNELS 14 TO 83 & VHF 7 TO 13

LOG PERIODIC LPL-FM STEREO

JFD ELECTRONICS CORPORATION, 15th Avenue at 62 Street, Brooklyn, N. Y., 11219 TWX:NY25040

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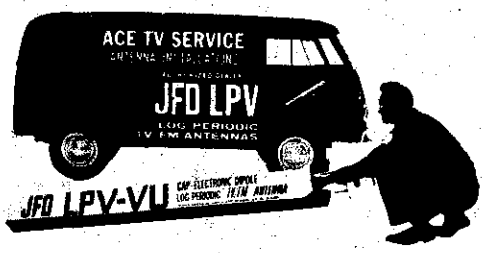
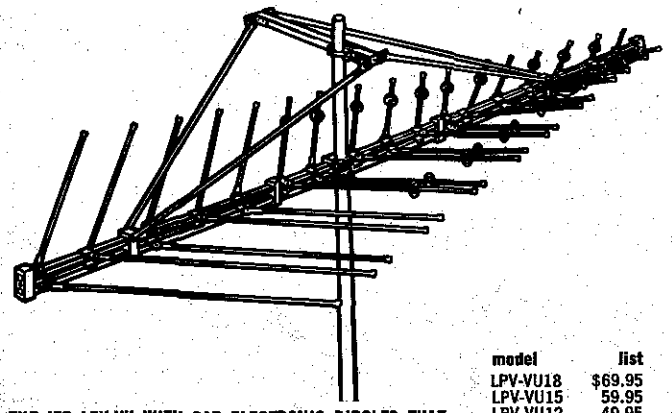
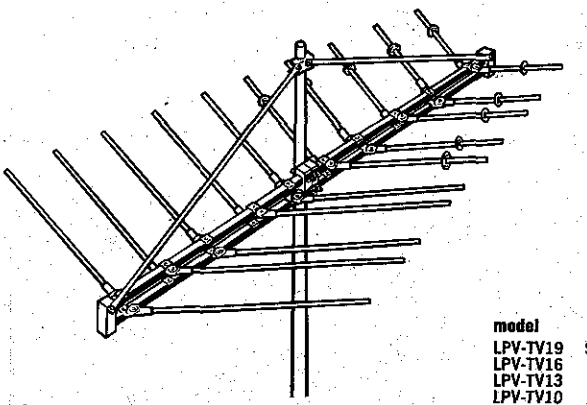


Don't Be 1/2 Set... With JFD LPV Log



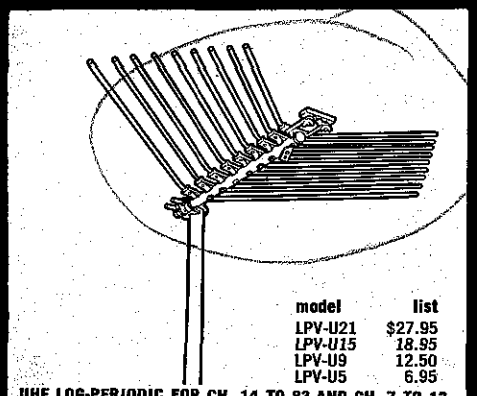
THE JFD LPV-VU WITH CAP ELECTRONIC DIPOLES THAT RECEIVES ALL CHANNELS 2-83 AND FM STEREO USING ONE DOWN-LEAD!

model	list
LPV-VU18	$69.95
LPV-VU15	59.95
LPV-VU12	49.95
LPV-VU9	39.95
LPV-VU6	27.50



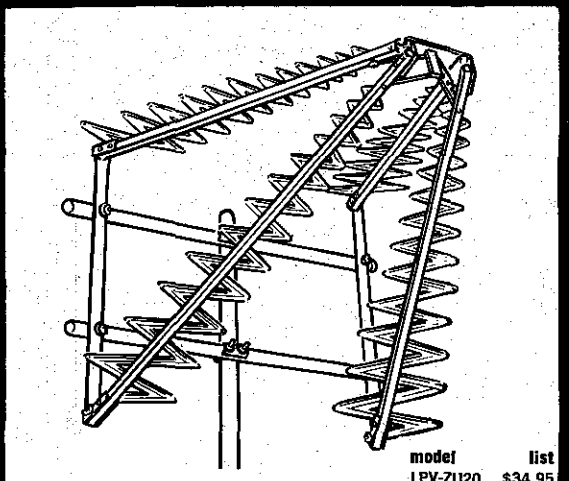
NEW! LPV LOG PERIODIC WITH CAP-ELECTRONIC DIPOLE FOR VHF CHANNELS 2 TO 13

model	list
LPV-TV19	$69.95
LPV-TV16	59.95
LPV-TV13	49.95
LPV-TV10	39.95
LPV-TV7	29.95
LPV-TV5	21.95
LPV-TV3	14.95



model	list
LPV-U21	$27.95
LPV-U15	18.95
LPV-U9	12.50
LPV-U5	6.95

UHF LOG-PERIODIC FOR CH. 14 TO 83 AND CH. 7 TO 13



model	list
LPV-ZU20	$34.95
LPV-ZU10	15.95

UHF ZIG-A-LOG ANTENNA FOR CHANNELS 14 TO 83

Only JFD offers You LPV Log Periodics for VHF (Ch.2-13)...UHF

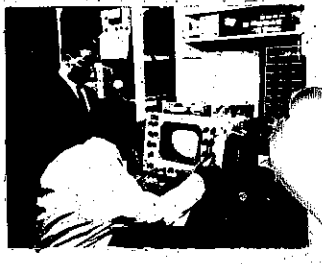
GET THE LION'S SHARE OF ANTENNA BUSINESS (FLATTEN CATV COMPETITION, TOO) BY FEATURING THE JFD LPV-VU LOG PERIODIC! THIS NEW GENERATION OF *LOG PERIODIC ANTENNAS* DELIVERS WHAT VIEWERS WANT—MANY MORE STATIONS...VHF CHANNELS 2 TO 13...UHF CHANNELS 14 TO 83...FM/STEREO. GIVES THE CLEAN, UNIFORM SIGNAL SETS NEED ESPECIALLY FOR VIVID COLOR RECEPTION.

Only the LPV follows the patented **frequency independent Log Periodic** antenna formula developed by the Antenna Research Laboratories of the University of Illinois. This new log periodic cellular concept provides you with a combination of gain, bandwidth, directivity and impedance match never before possible with conventional antenna designs.

You can actually see the difference in truer color purity, in greater contrast, in finer detail—not on just some of the channels but all of the channels! **Small wonder more *JFD Log Periodics* were installed in the last 12 months than any other brand.**

PREFERRED BY MORE N. Y. WORLD'S FAIR PAVILIONS . . . New York World's Fair exhibitors demand flawless color reception. That's why the House of Good Taste, Masonic Pavilion, Formica House, Eastman Kodak Exhibit, New York City Exhibit, House of Japan and other Fair showplaces chose the JFD LPV. This exclusive preference is pre-selling millions of Fairgoers—opening the door for more LPV sales by you.

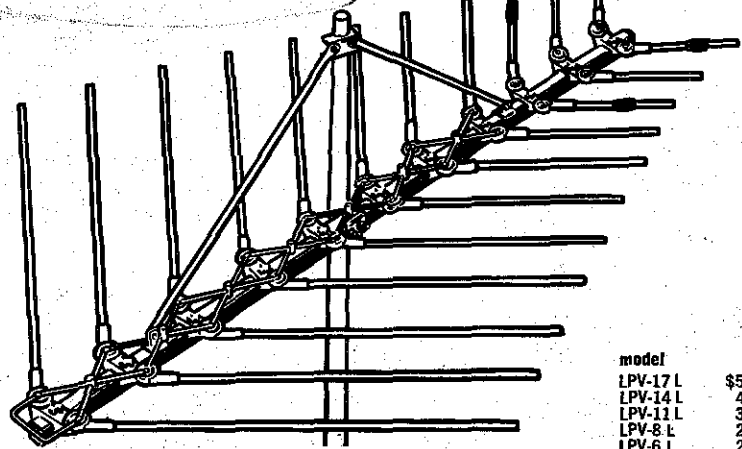
WHY THE LOG PERIODIC IS THE MOST DRAMATIC BREAK WITH ANTENNA TRADITION SINCE DR. YAGI INVENTED THE YAGI . . . Up until the JFD Log Periodic, it was not possible to devise a truly broadband antenna except by "compromise" design that had to give up vital gain to get wider bandwidth . . . or had to degrade directivity for better impedance. Burdensome parasitics were piled on to try to compensate for gain "suck-outs", ghost-prone polar patterns, and inadequate bandwidth. This pyramided performance complications resulting in signal-sapping standing waves and impedance matches—and yet were only effective at the band edges.



Through the use of the revolutionary new logarithmic periodic formula, the entire frequency range is covered with dipole

Be All Set—
Periodic TV & FM Antennas

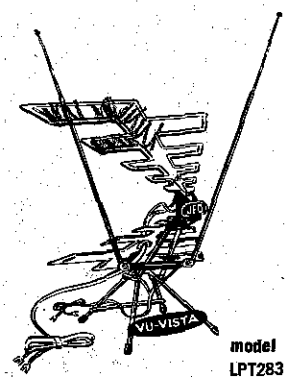
THE FAMOUS LPV FEATURING ADVANCED NEW GEOMETRIC LOG-PERIODIC PARAMETERS!



model	list
LPV-17 L	$59.95
LPV-14 L	49.95
LPV-11 L	39.95
LPV-8 L	29.95
LPV-6 L	21.95
LPV-4 L	14.95

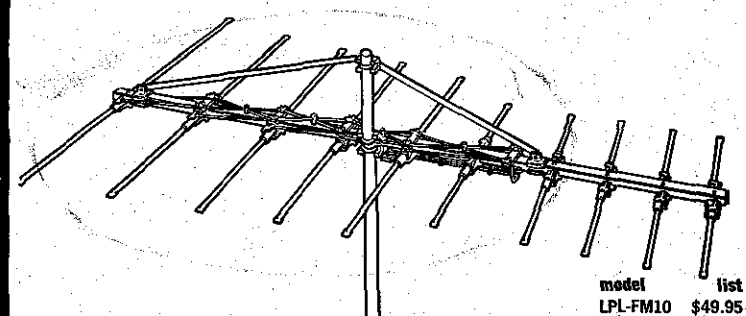
FOR VHF CHANNELS 2 TO 13 AND FM STEREO

THE FIRST LOG PERIODIC TRAPEZOID INDOOR ANTENNA-FOR CHANNELS 2 TO 83



model	list
LPT283	$12.50

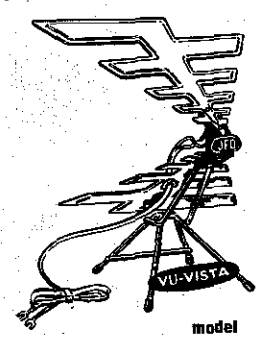
ULTRA VU-VISTA VHF-UHF INDOOR ANTENNA



model	list
LPL-FM10	$49.95
LPL-FM8	39.95
LPL-FM6	29.95
LPL-FM4	19.95

LOG PERIODIC FM STEREO ANTENNA

VU-VISTA UHF LOG-PERIODIC INDOOR ANTENNA—CHANNELS 14 TO 83



model	list
LPT-100	$7.50

(Ch. 14-83)...FM/Stereo...VHF/UHF/FM-COLOR & Black/White

groups (cells) of overlapping resonances. These harmonically resonant V-dipoles result in a **frequency-independent** performance. **The LPV's inherently high gain, sharp directivity, 300 ohm impedance match and flat response are virtually constant across the entire band.**

AND ONLY THE JFD LPV HAS IT! . . . The JFD LPV is the product of the world's largest and newest antenna laboratories. Here, in the JFD Champaign, Illinois R & D Research Center, a team of scientists and engineers, under the direction of Dr. Paul E. Mayes, are revolutionizing the state of the antenna art.

MECHANICALLY SUPERIOR! . . . COMPARE CONSTRUCTION! . . . Life-time stainless-steel take-off terminals that can never corrode, "tank-turret" element brackets, tough heavy-wall Implex A acrylic insulators, twin U-bolts with 6 inch mast grip span; supple, permanently riveted aluminum drive line rod; electrically conductive gold alodizing; plus a host of other exclusive mechanical improvements.

FIGHT CATV WITH THE JFD LPV! Keep CATV out of your area with JFD Log Periodics (such as the 82-channel LPV-VU) which provide viewers with more channels—sharper reception—richer color—plus FM stereo. Don't install inferior antennas that open the door to CATV. Install the best to get the best performance—the LPV!

ADVERTISED IN LOOK, SUNSET . . . COMPARE ADVERTISING AND PROMOTION! . . . A versatile selection of indoor and outdoor sales helps . . . advertisements in LOOK, SUNSET and other national and local consumer publications . . . in newspapers . . . on television . . . sell your best prospects.

Now is the time and your JFD distributor is the place to stock up and step up into big-league LPV Log Periodic profits.

SEE WHY AT THE MOMENT OF TRUTH THE PICTURE IS THE PROOF THE JFD LPV LOG PERIODIC WORKS BEST!

LICENSED UNDER ONE OR MORE OF U.S. PATENTS 2,958,081; 2,985,879; 3,011,168; 3,108,280; 3,150,376, RE. 25,740 AND ADDITIONAL PATENTS PENDING IN U.S.A. AND CANADA. PRODUCED BY JFD ELECTRONICS CORPORATION UNDER EXCLUSIVE LICENSE FROM THE UNIVERSITY OF ILLINOIS FOUNDATION.

JFD **JFD ELECTRONICS CORPORATION**
15th Avenue at 62nd Street, Brooklyn, N. Y. 11219
JFD Electronics-Southern Inc., Oxford, North Carolina
JFD International, 64-14 Woodside Ave., Woodside 77, N. Y.
JFD Canada, Ltd., 51 McCormack Street, Toronto, Ontario, Canada

VHF/UHF/FM/Stereo antenna concept—
CAP-ELECTRONIC DIPOLE LOG-PERIODIC LPV-VU

again JFD advances the state-of-the-antenna art by teaming the new capacitor-coupled dipole concept to the matchless log periodic configuration.

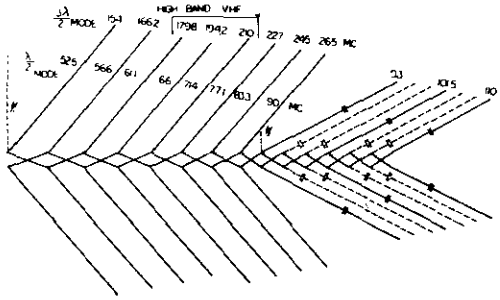


FIG. 8 **Capacitor-Coupled Dipole Elements**

Recently, JFD antenna engineers led by Dr. Paul E. Mayes, Technical Consultant to the JFD Laboratories in Champaign, Illinois, conceived a remarkable innovation in dipole design, the capacitively-coupled element.

In the original LPV's, the element lengths varied from those resonant on channel 6 (88 mc/s) to those resonant on channel 2 (54 mc/s). These same elements are resonant in the 3/2 wavelength mode at approximately three times the frequency. Fig. 8 shows how a typical VHF-UHF antenna might look using conventional V-dipoles. The resonant frequencies of the dipole elements in the low VHF band are indicated near midpoint of each dipole. The 3/2 wavelength resonant frequencies are indicated near the ends of each dipole. (Note that only three dipoles resonate at frequencies in the high VHF band.) By **properly positioning** a capacitor in the dipole the resonant frequency of the 3/2 wavelength mode can be shifted with respect to the 1/2 wavelength mode.

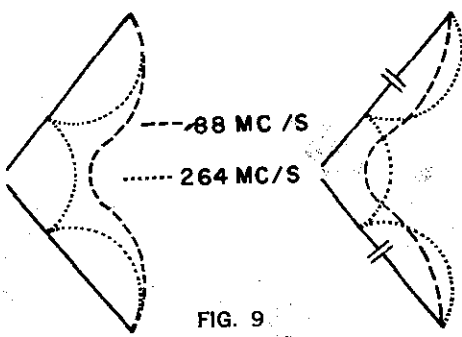
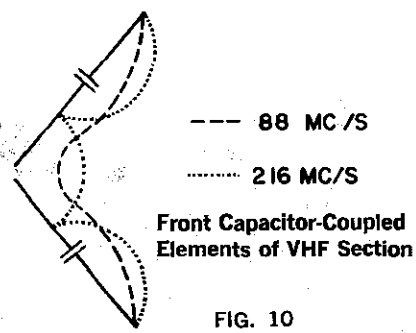


FIG. 9



Front Capacitor-Coupled Elements of VHF Section

FIG. 10

Figure 9 illustrates how a conventional dipole which resonates at 88 mc/s in the half-wavelength mode will also resonate at about 264 mc/s. However, by the insertion of capacitors of the proper size in the proper place, **along the dipole,** the ratio between the first and second resonances can be shifted as shown in Fig. 10. Thus, by introducing a parallel plate capacitor into the dipole elements, and by carefully adjusting the value of this capacitance and its position on the dipole, the resonant frequencies of the dipole can be shifted in the 3/2 wavelength mode. In this way, the dipole can be made to resonate at 88 mc/s as well as at 216 mc/s.

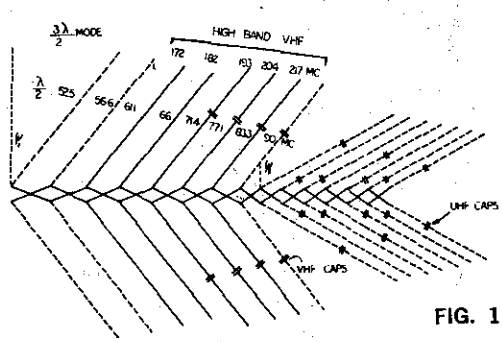


FIG. 11

Result: the active region in the high VHF band now extends over a **greater** number of dipoles with a resulting **increase in gain.**

TYPICAL "E" (HORIZONTAL) PLANE POLAR PATTERN (CH. 7-13)

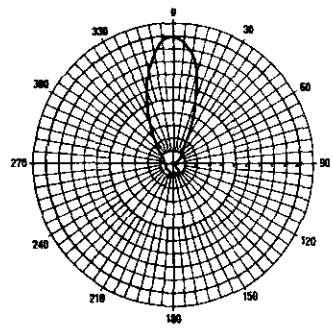


FIG. 12

This new VHF-UHF antenna has much higher, more uniform gain in the high band, lower side-lobe levels, narrower beamwidths, and therefore greatly improved ghost rejection.

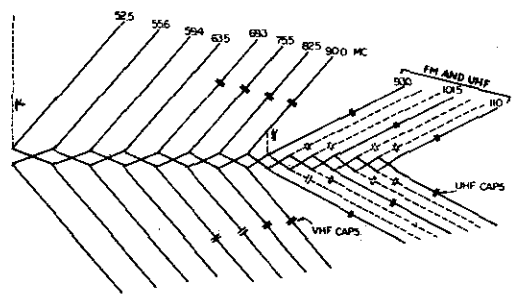


FIG. 13

The FM active region is found in the forward UHF section. Here, FM, as well as UHF low band performance, is improved by adjusting the parallel plate capacitors on this front UHF section.

TYPICAL "E" (HORIZONTAL) PLANE POLAR PATTERN (CH. 2-6)

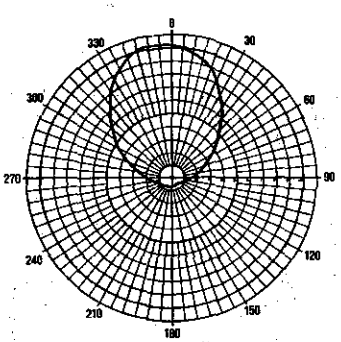


FIG. 14

The VHF low band operation of the new LPV-VU **capacitor-coupled dipole** is characterized by uniformly high gain, an excellent 300 ohm match, a uniform high front-to-back ratio and superior ghost rejection.

TYPICAL "E" (HORIZONTAL) PLANE POLAR PATTERN (CH. 14-83)

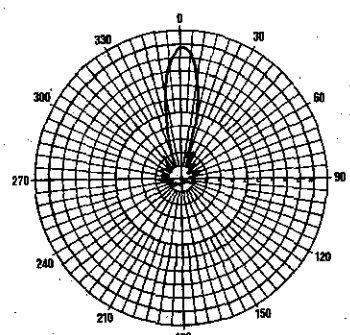


FIG. 15

The UHF band is designed to operate in the $\frac{7}{2}$ and $\frac{9}{2}$ wavelength (seventh and ninth harmonic) modes. In the original LPV-VU series, operation in UHF was in the $\frac{5}{2}$ and $\frac{7}{2}$ (fifth and seventh harmonic) modes. The higher mode operation in UHF of the new LPV-VU capacitor-coupled dipole antennas provides even highest effective gain in UHF—equal or better than that of the best parabolics.

JFD NEW! VHF/UHF/FM CAP ELECTRONIC LOG PERIODIC FOR CHANNELS 2 TO 83 PLUS FM-FM STEREO

In the new LPV-VU Cap-electronic, the JFD Champaign, Illinois R & D Laboratories shatter antenna design precedent with a remarkable new **electronic** principle—the **capacitor-coupled** dipole.

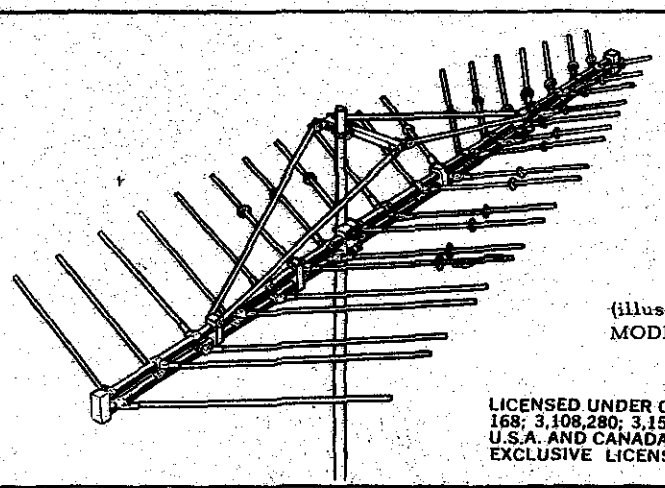
By introducing unique parallel plate **capacitors** into the dipoles and adjusting precisely their capacitance and location, JFD creates **more** driven elements than ever before possible. Result: the highest gain ever on VHF, UHF, FM/Stereo—from **one** antenna.

PLUS

1. **Frequency independent log periodic** design provides an unprecedented combination of remarkable gain . . . flat, full bandwidth response . . . sharp directivity . . . high front-to-back ratios . . . matched impedance and low VSWR on all TV and FM bands.
2. **Only one downlead** is required (a JFD VU/FM splitter is included so lead-ins can be run to VHF, UHF and FM set terminals).
3. **Unique low-impedance twin crossarms** function as crossed feeder harness to increase gain and provide maximum signal transfer on both high and low band channels.

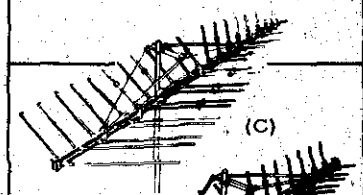
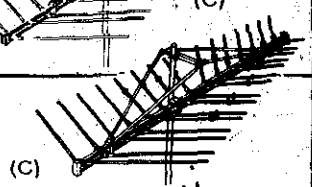
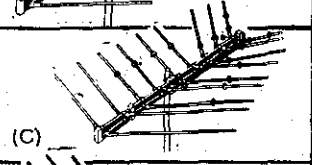
GET THE LION'S SHARE OF ANTENNA BUSINESS (FLATTEN CATV COMPETITION, TOO) BY FEATURING THE JFD LPV-VU LOG PERIODIC! THIS NEW GENERATION OF LOG PERIODIC ANTENNAS DELIVERS WHAT VIEWERS WANT—MANY MORE STATIONS...VHF CHANNELS 2 TO 13...UHF CHANNELS 14 TO 83...FM/STEREO. GIVES THE CLEAN, UNIFORM SIGNAL SETS NEED ESPECIALLY FOR VIVID COLOR RECEPTION.

FIGHT CATV WITH THE JFD LPV! Keep CATV out of your area with JFD Log Periodics (such as the 82-channel LPV-VU) which provide viewers with more channels—sharper reception—richer color—plus FM stereo. Don't install inferior antennas that open the door to CATV. Install the best to get the best performance—the LPV!



(illustrated)
MODEL LPV-VU18

LICENSED UNDER ONE OR MORE OF U.S. PATENTS 2,958,083; 2,985,879; 3,011,168; 3,108,280; 3,150,376, RE. 25,740 AND ADDITIONAL PATENTS PENDING IN U.S.A. AND CANADA. PRODUCED BY JFD ELECTRONICS CORPORATION UNDER EXCLUSIVE LICENSE FROM THE UNIVERSITY OF ILLINOIS FOUNDATION.

	MODEL	DESCRIPTION	LIST PRICE	STD. CTN.	Suggested Dealer Prices 1	2-9	10 & UP	DIST. COST
 (C)	LPV-VU18	18 Active Cells VHF-up to 175 miles UHF-up to 90 miles FM-up to 75 miles	69.95	1	41.97	38.82	35.94	25.88
 (C)	LPV-VU15	15 Active Cells VHF-up to 150 miles UHF-up to 90 miles FM-up to 60 miles	59.95	1	35.97	33.27	30.80	22.18
(C)	LPV-VU12	12 Active Cells VHF-up to 125 miles UHF-up to 65 miles FM-up to 50 miles	49.95	1	29.97	27.72	25.66	18.48
 (C)	LPV-VU9	9 Active Cells VHF-up to 100 miles UHF-up to 40 miles FM-up to 40 miles	39.95	1	23.97	22.17	20.53	14.78
NEW	LPV-VU6	6 Active Cells VHF-up to 75 miles UHF-up to 25 miles FM-up to 30 miles	27.50	1	16.50	15.25	14.12	10.17

JFD NEW! JFD AAA GOLD ALODIZED LPV-TV LOG PERIODIC TV/FM ANTENNAS

Here is the latest and finest VHF (Ch. 2-13) interpretation of the acclaimed JFD Log Periodic --- the LPV-TV!

This new adaptation of the LPV by the JFD Antenna Research and Development Laboratories of Champaign, Illinois achieves the narrowest beamwidth yet produced across the entire VHF land by an antenna of equal size. The major innovations incorporated into the LPV-TV are capacitor-coupled dipoles and directors which enhance third harmonic mode performance and improve gain.

Most effective use of harmonic mode operation of a dual-band dipole or director requires that the ratio of second-to-first resonant frequencies be less than the three-to-one value obtained with a conventional linear dipole. This prevents the utilization of all dipoles in the third harmonic mode where the resonant dipole is about 3-half-wavelengths long. The result is illustrated in Fig. 1 where the first and second resonant frequencies of a set of dipoles of a conventional LPV antenna are shown.

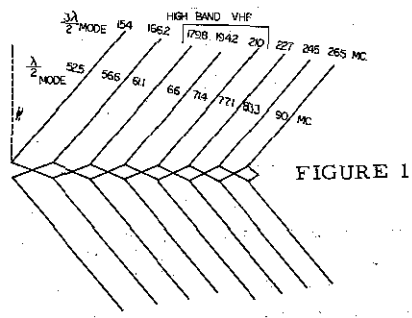


FIGURE 1

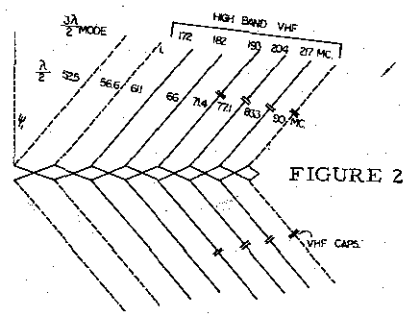


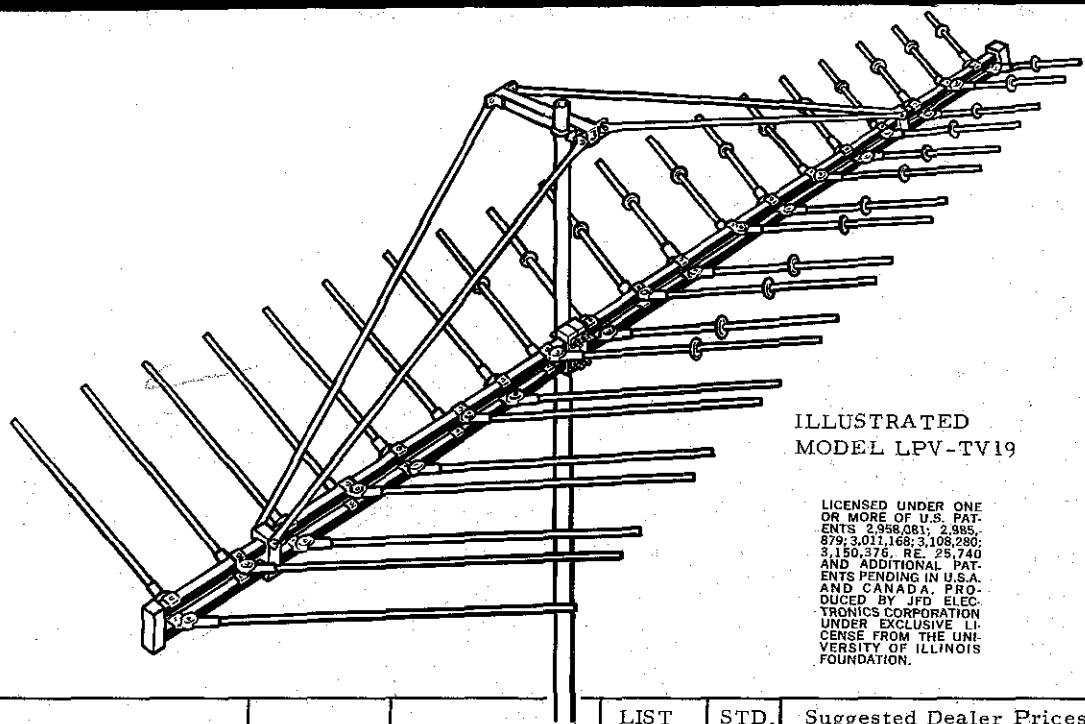
FIGURE 2

Whereas each dipole has a first resonant frequency in the low VHF band, only three of the eight dipoles have resonant frequencies in the high VHF band. Increased high band directivity and gain is obtained by adding capacitors at proper locations along the dipoles to shift the second resonance by the proper amount. Resonant frequencies of the capacitor-dipoles are shown in Fig. 2 where five of the eight dipoles have resonances in the VHF high band.

For best results director elements should be resonant at approximately 5% above the highest frequency of operation. A director with first resonance at 113 Mc would work well in the FM band and upper end of VHF low band. A conventional linear director of this length, however, would have a second resonance (third harmonic mode) at about 339 Mc and would be useless in the high VHF band. By adding a capacitor at the proper position, the second resonance can be shifted to 225 Mc with corresponding increase in the director effectiveness.

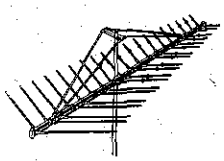
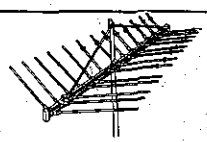
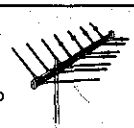
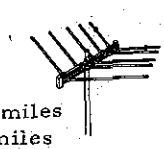
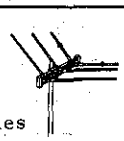
A further feature of the LPV-TV series is the use of twin-boom feeder with improved impedance match between low impedance line and linear dipoles. A unique open-wire transformer brings impedance up to 300 ohms.

FOR VHF CHANNELS 2 to 13 & FM STEREO



ILLUSTRATED
MODEL LPV-TV19

LICENSED UNDER ONE OR MORE OF U.S. PATENTS 2,958,081; 2,985,879; 3,011,168; 3,108,280; 3,150,375. RE. 25,740 AND ADDITIONAL PATENTS PENDING IN U.S.A. AND CANADA. PRODUCED BY JFD ELECTRONICS CORPORATION UNDER EXCLUSIVE LICENSE FROM THE UNIVERSITY OF ILLINOIS FOUNDATION.

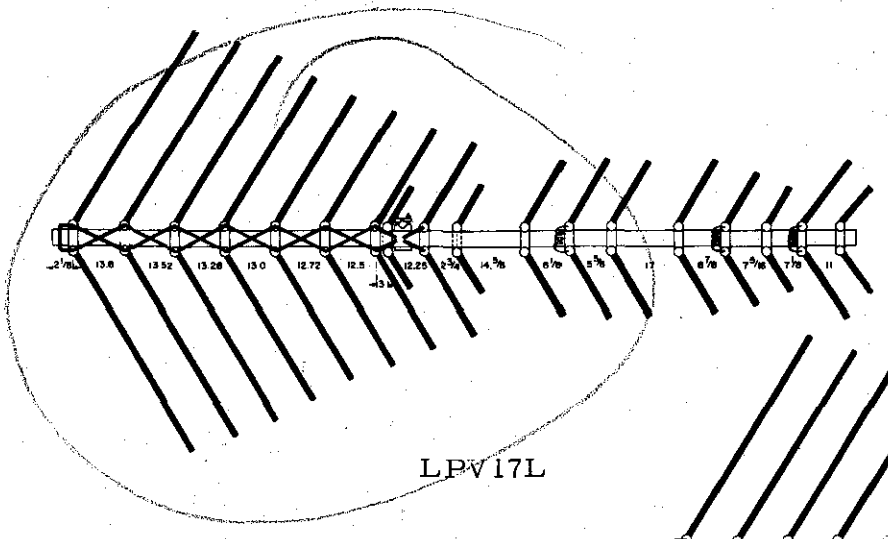
	MODEL	DESCRIPTION	LIST PRICE	STD. CTN.	Suggested Dealer Prices 1	2-9	10 & UP	DIST. COST
 NEW VHF-up to 200 miles	LPV-TV19	19 Active Cell & Director Cap-Electronic Element System	69.95	1	41.97	38.82	35.94	25.88
NEW VHF-up to 175 miles	LPV-TV16	16 Active Cell & Director Cap-Electronic Element System	59.95	1	35.97	33.27	30.80	22.18
 NEW VHF-up to 150 miles	LPV-TV13	11 Active Cell & Director Cap-Electronic Element System	49.95	1	29.97	27.72	25.66	18.48
NEW VHF-up to 125 miles FM-up to 50 miles	LPV-TV10	10 Active Cell & Director Cap-Electronic Element System	39.95	1	23.97	22.17	20.53	14.78
 NEW VHF-up to 100 miles FM-up to 50 miles	LPV-TV7	7 Active Cell & Director Cap-Electronic Element System	29.95	1	17.97	16.62	15.39	11.08
 NEW VHF-up to 75 miles FM-up to 40 miles	LPV-TV5	4 Active Cell & Director Cap-Electronic Element System	21.95	1	13.17	12.18	11.27	8.12
 NEW VHF-up to 50 miles FM-up to 30 miles	LPV-TV3	3 Active Cell & Director Cap-Electronic Element System	14.95	1	8.97	8.30	7.68	5.53

IMPORTANT

In their increasing search to improve our antennas, our Research & Development Laboratories has continued to study and investigate new Log Periodic designs.

From the hundreds of thousands of Log Periodic antennas sold, they have analyzed many thousands of field reports.
These exhaustive studies have resulted in a new advanced application of the famous Log Periodic formula, now incorporated in the new LPV-L Log Periodic series.

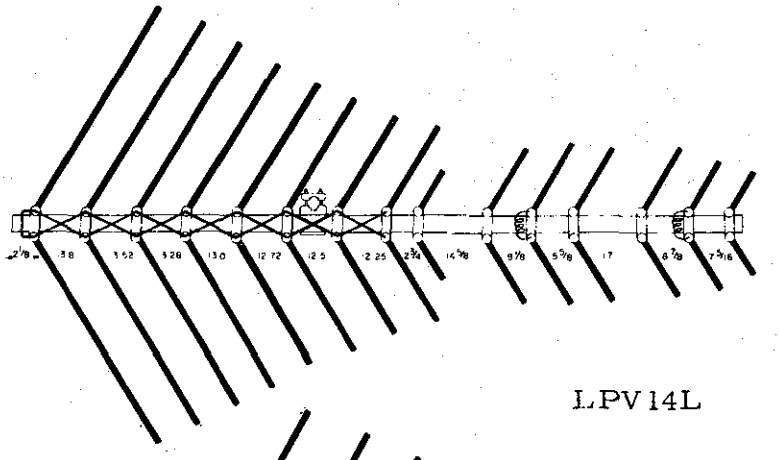
The charts below indicate the new Tau * (.98) spacing factor employed in the LPV-L series.



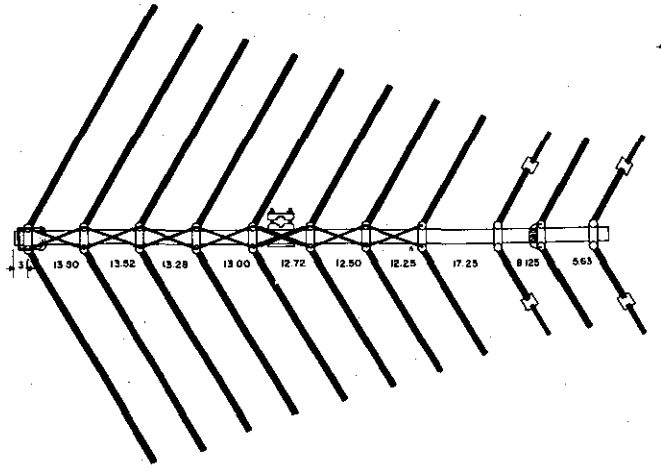
LPV17L

* Tau $(\tau)=\frac{h_{n+1}}{h_n}=\frac{d_{n+1}}{d_n}$

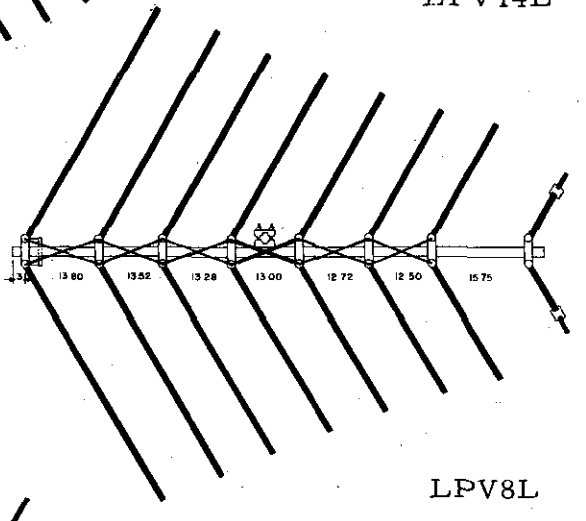
$\sigma=\frac{d_n}{4h_n}$



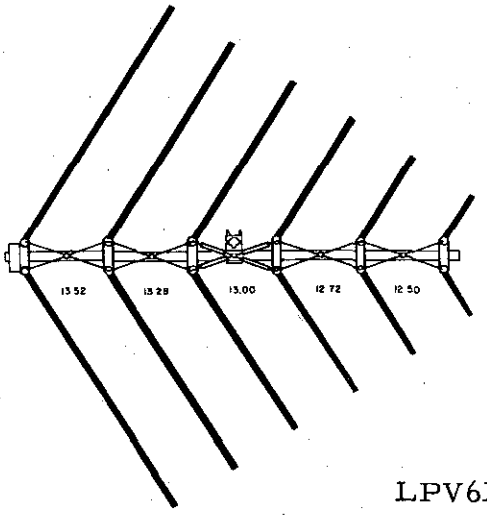
LPV14L



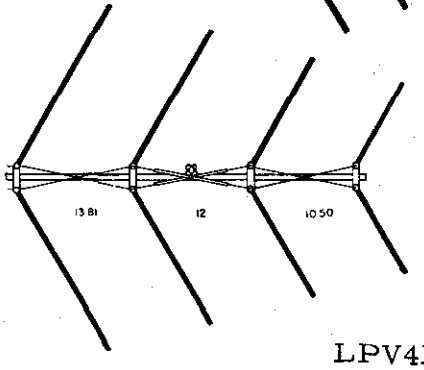
LPV 11L



LPV8L



LPV6L



LPV4L

** Note: Tau factor for the LPV4L is (.87)

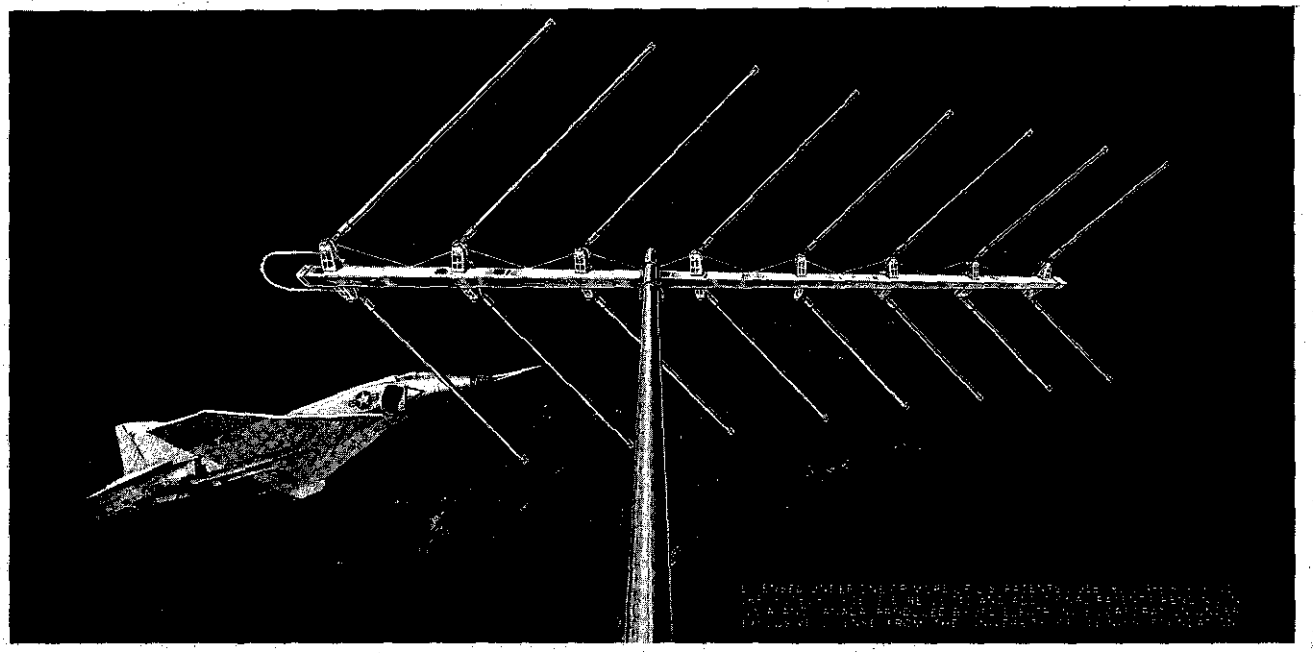
We are confident these antennas will give you even higher better performance and superior efficiency on channels 2 through 13 and FM Stereo.

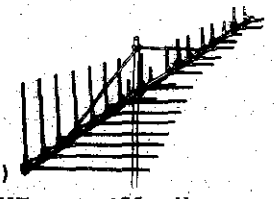
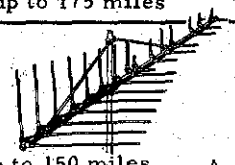
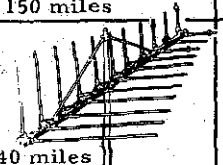
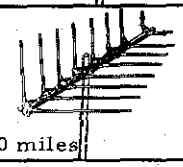
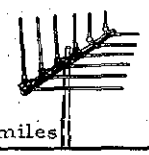
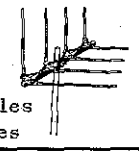
JFD

NEW! NEW! NEW!

JFD LPV-L LOG-PERIODIC TV ANTENNAS FOR VHF CHANNELS 2 TO 13 & FM STEREO

NOW THE BEST OF ALL ANTENNAS IS EVEN BETTER! FOR COLOR...FOR BLACK/WHITE



	MODEL	DESCRIPTION	LIST PRICE	STD. CTN.	Suggested Dealer Prices 1	2-11	12 & UP	DIST. COST
 (C) VHF-up to 175 miles	LPV-17 L	18 Active Cell and director system	59.95	1	35.97	32.37	29.98	21.58
 (C) VHF-up to 150 miles	LPV-14 L	15 Active Cell and director system	49.95	1	29.97	26.97	24.98	17.98
 (C) VHF-up to 125 miles FM-up to 40 miles	LPV-11 L	11 Active Cell and director system	39.95	1	23.97	21.57	19.98	14.58
 (C) VHF-up to 100 miles FM-up to 40 miles	LPV-8 L	8 Active Cell and director system	29.95	1	17.97	16.17	14.98	10.78
 (C) VHF-up to 75 miles FM-up to 30 miles	LPV-6 L	6 Active Cell system	21.95	1	13.17	11.85	10.98	7.92
 VHF-up to 50 miles FM-up to 20 miles	LPV-4 L	4 Active Cell system	14.95	1	8.97	8.07	7.48	5.40

JFD

NOW—THE ANTENNA AMERICA KNOWS BEST IN THE KIT THAT SELLS BEST!

JFD LOG-PERIODIC TV/FM ANTENNA KITS!

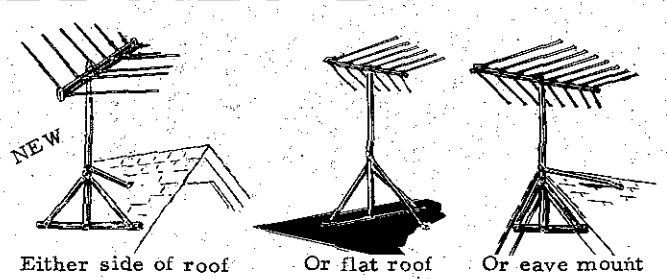
$\frac{L_{(n+1)}}{L_n} = \tau$ —FEATURING HARMONICALLY RESONANT V-ELEMENTS OPERATING ON THE LOG-PERIODIC CELLULAR PRINCIPLE IN THE FUNDAMENTAL AND THIRD HARMONIC MODES

Take the tremendous popularity of the nation's most demanded antenna, add premium-quality installation accessories and you've got the antenna combination that zooms sales—the JFD Log-Periodic LPV TV/FM Antenna Kit.
You have your choice of any one of three Log-Periodic LPV antennas — the dramatic new antenna concept developed by the Antenna Research Laboratories of the University of Illinois and adapted for TV/FM reception by JFD. Regardless of location . . . local, suburban, or near fringe, there is a Log-Periodic LPV kit that will give your customer *spectacular reception results in* COLOR, black and white, and FM stereo.

Versatile is the word for the JFD 3-way Tri-Mount and Mast. Goes up in minutes on flat, slanted or vertical surface...on eave, end, or peak of roof. Needs no guy wires. Made of lustrous gold Alodized aluminum. **AAA GOLD ALODIZED**

- Deliver **More** Yet Cost No More!
- *Engineered for* Maximum Picture Power — **Color** and Black and White
- Styled to Improve Home Appearance
- Provides Superb FM Stereo
- Complete Ready-to-Install Kit
- Ideal for Attics, Mobile Homes, Cottages
- **Corrosion-proof stainless steel take-off terminals for twin lead.**

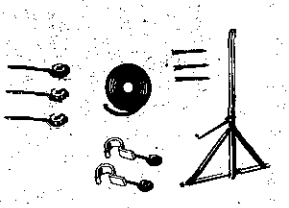
LICENSED UNDER ONE OR MORE OF U.S. PATENTS 2,968,081; 2,985,879; 3,011,168; 3,108,280; 3,150,376, RE. 25,740 AND ADDITIONAL PATENTS PENDING IN U.S.A. AND CANADA. PRODUCED BY JFD ELECTRONICS CORPORATION UNDER EXCLUSIVE LICENSE FROM THE UNIVERSITY OF ILLINOIS FOUNDATION.

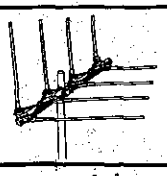
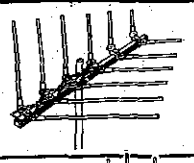
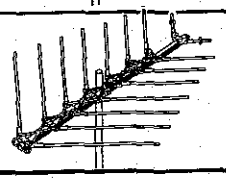
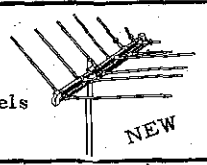
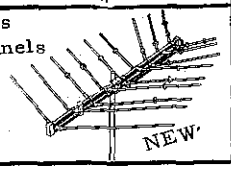


Either side of roof — Or flat roof — Or eave mount

CONTENTS

Gold Alodized TV/FM Antenna
Gold Alodized Aluminum Universal Tri-mount with 5 ft. Gold Mast
50 ft. twin lead
3 wood screw-eyes
2 mast stand-offs
3 self-sealing drive-in nails



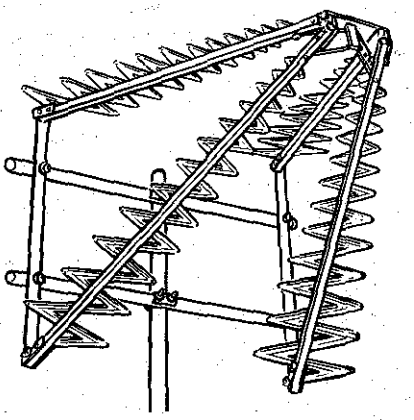
	MODEL	DESCRIPTION	LIST PRICE	STD. CTN.	Suggested Dealer Prices 1	2-9	10 & UP	DIST. COST
	LPV4PM	4 Active Cells For local use up to 50 miles from transmitter	21.95	1	13.17	11.85	10.98	7.92
	LPV6PM	6 Active Cells For up to 75 miles from transmitter	29.95	1	17.97	16.17	14.93	10.78
	LPV8PM	8 Active Cells and director system for up to 100 miles from transmitter	37.95	1	22.77	20.49	18.98	13.66
Receives 82 Channels 	LPV-VU6PM	6 Active Cells VHF-up to 75 miles UHF-up to 25 miles FM-up to 30 miles	34.95	1	20.97	19.40	17.93	12.90
Receives 80 Channels 	LPV-VU9PM	9 Active Cells VHF-up to 100 miles UHF-up to 40 miles FM-up to 40 miles	47.95	1	28.77	26.61	24.65	17.75

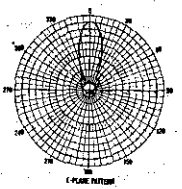
JFD NEW! AAA GOLD ALODIZED ZIG-A-LOG UHF LOG PERIODIC TV ANTENNAS

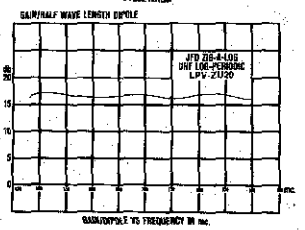
UHF ZIG-A-LOG

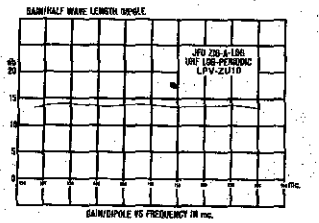
LOG-PERIODIC
PLANAR
HELICAL
FOR CHANNELS 14 to 83

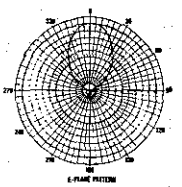
- **Patent pending frequency independent Log-Periodic cells** that perform with incredible broad band efficiency over the wide 1.9-to-1 range of UHF frequencies (470 mc-890 mc).
- **Meandering narrow-width geometrically-tapered planar helical elements** (in axial mode)—to achieve the acutely sharp directivity and high gains without sidelobes. Will overcome "snow," "ghosts," and "interference" which affect UHF reception.
- **Front fed to produce backfire performance** with resulting front-to-back ratio which is superior even to large screen reflectors and parabolics.
- **Corrosion-proof stainless steel take-off terminals for twin lead.**











For Deep Fringe Areas (up to 90 miles)

Cat. LPV-ZU20 Zig-A-Log Log-Periodic Planar Helical in Axial Mode "E" Horizontal Plane Stacked Array

EQUALS GAIN OF PARABOLIC!

To satisfy locations requiring higher gain and directivity two Zig-a-Logs are combined into an ultra-sensitive and directive side-by-side stacked array. Provides gain comparable to larger parabolic reflectors—greatly reduced wind, snow and ice loading area.

DESIGNED EXPRESSLY FOR RECEPTION OF STATIONS IN ONE DIRECTION—UP TO 90 MILES

GAIN: 16 to 17 db.

DIRECTIVITY:
"E" Horizontal Plane Pattern:
25° ±3° Average Beamwidth
"H" Vertical Plane Pattern:
30° ±2° Average Beamwidth
Beamwidths are sufficiently wide to ease orientation—hold on transmitter beam.

VSWR: Under 2:1.

FRONT-TO-BACK RATIO: 28:1 average
EXCELLENT 300 OHM IMPEDANCE MATCH AT ALL UHF FREQUENCIES

OVERALL DIMENSIONS: 31" H x 29" W x 43" D

WEIGHT: 9 lbs.

For Fringe Areas (up to 60 miles)

Cat. LPV-ZU10 Zig-A-Log Log-Periodic Planar Helical

Matches Performance of 8-Bay Bowtie-Reflector! . . . without the wind loading of a large screen!

Because of its extended length (in less space) the gain of the LPV-ZU10 Zig-a-Log is better than an 8-bay stack of bowties in front of a screen reflector.

MINOR LOBE LEVELS AVERAGE 19.1 db BELOW MAXIMUM DIRECTIVITY, GUARANTEES MAXIMUM GHOST REJECTION

GAIN: 13.5 to 14. db.

DIRECTIVITY:
"E" Horizontal Plane Pattern:
48° ±3° Average Beamwidth
"H" Vertical Plane Pattern:
31° ±2° Average Beamwidth

VSWR: Under 1.8:1

FRONT-TO-BACK RATIO: 35:1 average

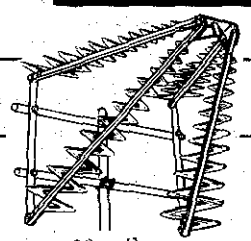
EXCELLENT 300 OHM IMPEDANCE MATCH AT ALL UHF FREQUENCIES.

All size and spacing dimensions were precisely calculated according to Log-Periodic formulas to produce the best 300 ohm match ever achieved in TV antenna design on UHF frequencies 470 mc to 890 mc. This insures 100 per cent transmission of every decibel of gain of the Zig-a-Log to the down-lead.

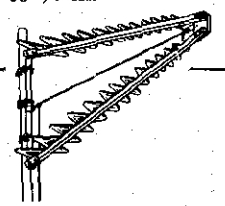
OVERALL DIMENSIONS: 31" H x 6" W x 43" D

WEIGHT: 4 lbs.

LICENSED UNDER ONE OR MORE OF U.S. PATENTS 2,958,081; 2,985,879; 3,011,168; 3,108,280; 3,150,376; RE. 25,740 AND ADDITIONAL PATENTS PENDING IN U.S.A. AND CANADA. PRODUCED BY JFD ELECTRONICS CORPORATION UNDER EXCLUSIVE LICENSE FROM THE UNIVERSITY OF ILLINOIS FOUNDATION.



up to 90 miles



up to 60 miles

MODEL	DESCRIPTION	LIST PRICE	STD. CTN.	Suggested Dealer Prices 1	2-9	10 & UP	DIST. COST
LPV-ZU20	E-plane stacked Zig-A-Log (equal to or better than 12-bay bowtie or large parabolic)	34.95	1	20.97	18.87	17.48	12.58
LPV-ZU10	1-bay Zig-A-Log (equal to or better than 8-bay bowtie)	15.95	1	9.57	8.61	7.98	5.74

JFD NEW! AAA* GOLD ALODIZED UHF LOG PERIODIC TV ANTENNAS

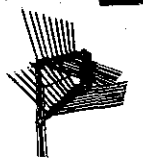
LICENSED UNDER ONE OR MORE OF U.S. PATENTS 2,956,061; 2,985,879; 3,011,165; 3,198,280; 3,199,116; RE. 25,703 AND ADDITIONAL PATENTS PENDING IN U.S.A. AND CANADA. PRODUCED BY JFD ELECTRONICS CORPORATION UNDER EXCLUSIVE LICENSE FROM THE UNIVERSITY OF ILLINOIS FOUNDATION

*Attractive, Anti-Corrosive Armor

the first UHF antenna design based on the patented *Log-Periodic LPV formula of the* Antenna Research Laboratories of the University of Illinois!

FOR UNEQUALLED COLOR-BLACK AND WHITE TV ON CHANNELS 14 TO 83 —PLUS VHF HIGH BAND PERFORMANCE!

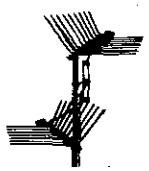
Corrosion-proof stainless steel take-off terminals for twin lead.



EXCLUSIVE FREQUENCY INDEPENDENT STACKING FOR + 3 db UHF GAIN AND + 1½ db. ch. 7 to 13 GAIN

Frequency independent Log Periodic stacking preserves the LPV-U's excellent impedance match and maintains constant gain and uniform operation.

No. J187 Stacking Transformer $3.00 List



EXCLUSIVE DUO-ORIENTING STACKING — *ELIMINATES* NEED FOR ROTORS

Any two LPV-U's (same or *different*) can be oriented in different directions, when mounted together with special J185 special stacking transformer without a rotor.

No. J185 Duo-Orienting Stacking Transformer $2.50, List

For Deep Fringe Areas (up to 80 miles)

Overall dimensions: 65" x 31" Weight: 8 lbs. approx.

Model LPV-U21 **21 Active Cells** **$27.95 List**

OUTPERFORMS 12-BAY BOWTIE-REFLECTOR...
IN GAIN!
UHF—14 to 16 db (to 830 mc) 11 db at 890 mc.
VHF—Ch. 7 to 13—4 to 6 db.
Special stacking transformers available for +3 db UHF gain and +1½ db Ch. 7-13 gain.
IN DIRECTIVITY!
"E" HORIZONTAL PLANE PATTERN: 26° Average Beamwidth.
"H" Vertical Plane PATTERN: 40° Average Beamwidth.
IN VSWR: Under 2:1 to 770 Mc, rising gradually to under 2.8:1 in translator band.
IN FRONT-TO-BACK RATIOS! UHF up to 26 db, VHF up to 30 db.
300 OHM NOMINAL IMPEDANCE.

For Fringe Areas (up to 60 miles)

Overall dimensions: 40" x 31" Weight: 6 lbs. approx.

Model LPV-U15 **15 Active Cells** **$18.95 List**

MORE EFFECTIVE GAIN THAN 8-BAY GRID SCREEN BOWTIE!
UHF—12 to 13 db (to 830 mc) 10 db at 890 mc.
VHF—Ch. 7 to 13—4 to 5 db.
Special stacking transformers available for +3 db UHF gain and +1½ db Ch. 7-13 gain.
SHARPER DIRECTIVITY THAN 8-BAY BOWTIE!
"E" (Horizontal) PLANE PATTERN: 27° Average Beamwidth.
"H" (Vertical) PLANE PATTERN: 50° Average Beamwidth.
VSWR: *Under 2.1 to 770 mc rising gradually to under 2.8:1 in translator band.*
TOPS 8-BAY BOWTIE IN FRONT-TO-BACK RATIOS!
UHF up to 28 db, VHF up to 25 db.
300 OHM NOMINAL IMPEDANCE.

For Local-Suburban Areas (up to 40 miles)

Overall dimensions: 26" x 30" Weight: 5 lbs. approx.

Model LPV-U9 **9 Active Cells** **$12.50 List**

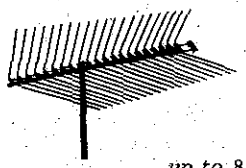
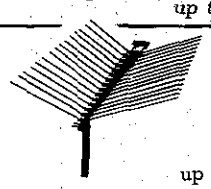
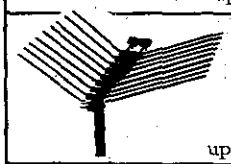
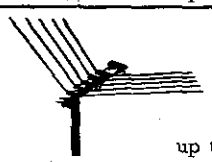
MORE EFFECTIVE GAIN THAN 4-BAY GRID SCREEN BOWTIE-REFLECTOR!
UHF—10 to 12 db, VHF Ch. 7 to 13—2 to 4 db.
Special stacking transformers available for +3 db UHF gain and +1½ db Ch. 7-13 gain.
BETTER DIRECTIVITY THAN 4-BAY BOWTIE-REFLECTOR!
"E" (Horizontal) PLANE PATTERN: 28° Average Beamwidth.
"H" (Vertical) PLANE PATTERN: 85° Average Beamwidth.
VSWR: Under 2:1 across UHF band.
BETTER FRONT-TO-BACK RATIOS THAN 4-BAY BOWTIE-REFLECTORS!
UHF up to 31 db, VHF up to 12 db.
300 OHM NOMINAL IMPEDANCE.

For Local-Suburban Areas (up to 25 miles)

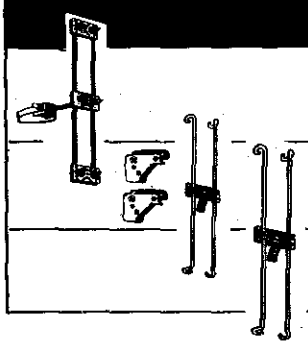
Overall dimensions: 15" x 30" Weight: 4 lbs. approx.

Model LPV-U5 **5 Active Cells** **$6.95 List**

MORE EFFECTIVE GAIN THAN CORNER REFLECTOR!
UHF—9 to 10 db.
VHF—Ch. 7 to 13 2 to 4 db.
Special stacking transformers available for +3 db UHF gain and +1½ db Ch. 7-13 gain.
NARROWER DIRECTIVITY THAN CORNER REFLECTOR!
"E" (Horizontal) PLANE PATTERN: 29° Average Beamwidth.
"H" (Vertical) PLANE PATTERN: 110° Average Beamwidth.
VSWR: Under 2:1 across UHF band.
FRONT-TO-BACK RATIO SUPERIOR TO CORNER REFLECTORS!
UHF up to 28 db.
VHF up to 10 db.
300 OHM NOMINAL IMPEDANCE.

	MODEL	DESCRIPTION	LIST PRICE	STD. CTN.	Suggested Dealer Prices 1	2-9	10 & UP	DIST. COST
 up to 80 miles	LPV-U21	(UHF Channels 14-83) 21 Active Cells (VHF Channels 7-13)	27.95	1	16.77	15.09	13.98	10.06
 up to 60 miles	LPV-U15	(UHF Channels 14-83) 15 Active Cells (VHF Channels 7-13)	18.95	1	11.37	10.23	9.48	6.82
 up to 40 miles	LPV-U9	(UHF Channels 14-83) 9 Active Cells (VHF Channels 7-13)	12.50	1	7.50	6.75	6.25	4.50
 up to 25 miles	LPV-U5	(UHF Channels 14-83) 5 Active Cells (VHF Channels 7-13)	6.95	2	4.17	3.75	3.48	2.50
	LPV-U5-Ind.		7.65	1	4.59	4.13	3.82	2.75

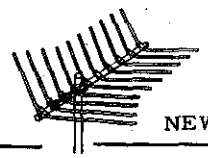
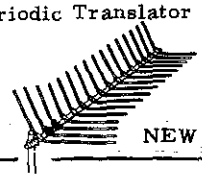
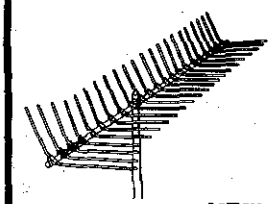
LPV-U STACKING TRANSFORMERS



J185	Duo-orient. stack trans. for any 2 LPV-UHF Ant.	2.50	1	1.50	1.35	1.25	.90
J187	Freq. Indep. stack trans. for LPV-U9, U15.	3.00	1	1.80	1.62	1.50	1.08
J188	Freq. ind. stack trans. for LPV-21	2.50	1	1.50	1.35	1.25	.90

JFD

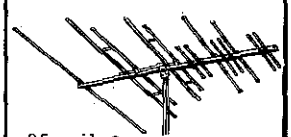
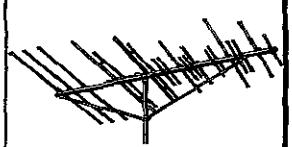
LPV LOG PERIODIC UHF TRANSLATOR ANTENNAS (CHANNELS 70 THROUGH 83)

Model	DESCRIPTION	MODEL	LIST PRICE	STD. CTN.	Suggested Dealer Prices 1	2-9	10 & UP	DIST. COST
LPV-TR10 10-element Log Periodic Translator  NEW	Highly compact, yet extremely efficient 10 element Log Periodic configuration delivers outstanding translator performance. Single heavy-duty boom with solid aluminum rod elements. Withstands all weather conditions and maintains peak performance. Gain: 13db±1/2. VSWR: Under 1.5:1. F/B: 22db. Length: Approximately 20". Individually cartoned.	LPV-TR10	8.95	1	5.37	4.83	4.48	3.22
LPV-TR16 16-element Log Periodic Translator  NEW	Sensitive 16-element Log Periodic design delivers additional gain where needed for top translator reception. Single heavy-duty boom with solid aluminum rod elements. Stands up under all types of weather conditions. Gain: 15db± 1/2. VSWR: Under 1.5:1. F/B: 25db. Length: Approximately 36". Individually cartoned.	LPV-TR16	12.50	1	7.50	6.75	6.25	4.50
LPV-TR22 22-element Log Periodic Translator  NEW	Approximately 4 ft. long, yet this super sensitive 22-element LPV Log Periodic provides maximum translator performance. Single heavy-duty boom with solid aluminum rod elements. Resists all climates and weather, maintains peak performance. Gain: 17db±1/2. VSWR: Under 1.5:1. F/B: 28db. Length: Approximately 50". Individually cartoned.	LPV-TR22	15.95	1	9.57	8.61	7.98	5.95

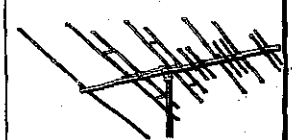
AAA GOLD ALODIZED HI-FI BANSHEE BROAD BAND ANTENNAS

Features heavy-duty dipole assembly (1" and 3/8" od) plus all features illustrated below.

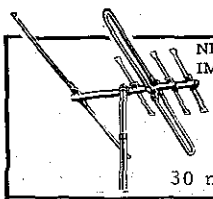
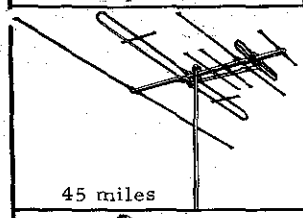
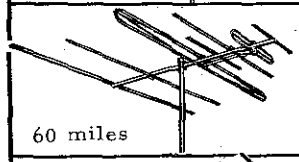
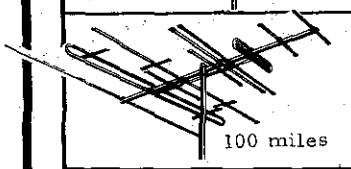
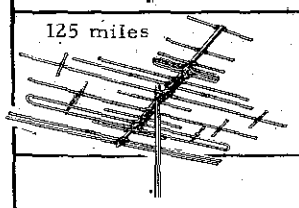
Heavy Duty Dipoles

	MODEL	DESCRIPTION	LIST PRICE	STD. CTN.		Suggested Dealer Prices 1	2-9	10 & UP	DIST. COST
 85 miles	For up to 85 miles AN400 AAA Gold Bond Alod.	19-Work. Elmts. Heavy-Duty Banshee	27.65	1		16.59	14.93	13.83	9.95
 125 miles	For up to 125 miles ANS400 AAA Gold Bond Alod.	30-Work. Elmts. Heavy-Duty Banshee	41.00	1		24.60	22.14	20.50	14.75

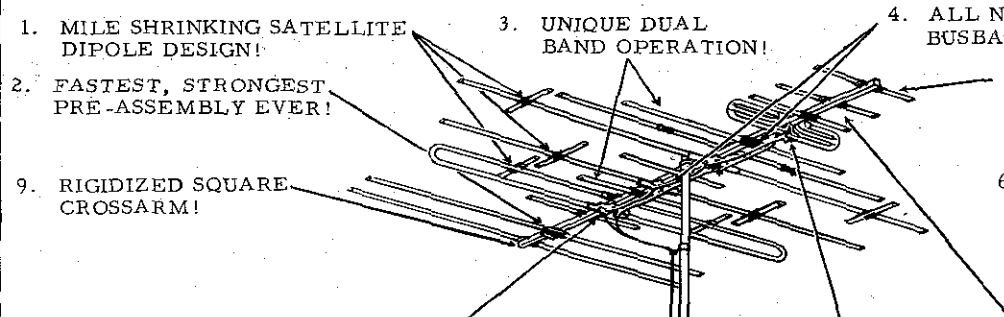
Completely Preassembled Dipoles

 85 miles	For up to 85 miles AN450 AAA Gold Bond Alod.	19-Work. Elmts. Pre-assembled Banshee	27.65	1		16.59	14.93	13.83	9.95
 125 miles	For up to 125 miles ANS450 AAA Gold Bond Alod.	30-Work. Elmts. Pre-assembled Banshee	41.00	1		24.60	22.14	20.50	14.75

JFD AAA GOLD ALODIZED HI-FI FIREBALL BROAD BAND ANTENNAS

	MODEL	DESCRIPTION	LIST PRICE	STD. CTN.		Suggested Dealer Prices 1	2-9	10 & UP	DIST. COST
 NEW IMPROVED 30 miles	FB201 AAA Gold Bond Alod.	5-Work. Elmts. Fireball	8.20	2		4.92	4.43	4.10	2.95
 45 miles	FB490 AAA Gold Bond Alod.	9-Work. Elmts. Fireball	15.97	1		9.58	8.62	7.99	5.75
 60 miles	FB500 AAA Gold Bond Alod.	9-Work. Elmts. Twin-Driven Fireball	16.67	1		10.00	9.00	8.34	6.00
 100 miles	FB510 AAA Gold Bond Alod.	14-Work. Elmts. Twin-Driven Fireball	27.50	1		16.50	14.85	13.75	9.90
 125 miles	FB520 AAA Gold Bond Alod.	24 Work. Elmts. Triple-Driven Fireball	37.50	1		22.50	20.25	18.75	13.50

10 ELECTRICAL AND MECHANICAL REASONS WHY JFD HI-FI FIREBALLS ARE THE BEST BUY!



1. MILE SHRINKING SATELLITE DIPOLE DESIGN!
2. FASTEST, STRONGEST PRE-ASSEMBLY EVER!
3. UNIQUE DUAL BAND OPERATION!
4. ALL NEW ALUMINUM BUSBAR HARNESS!
5. TRIMLY DESIGNED WITH THE CONSUMER IN MIND!
6. GLEAMING AAA GOLD ALODIZING KEEPS JFD HI-FI FIREBALLS LOOKING LIKE NEW - WORKING LIKE NEW!
7. BROAD BAND TUNING AND PHASING!
8. NEW REINFORCED DIPOLE ASSEMBLIES!
9. RIGIDIZED SQUARE CROSSARM!
10. NEW IMPLEX "A" INSULATORS!

AAA* GOLD ALODIZED

...AT NO EXTRA COST...TO KEEP LOOKING LIKE NEW, WORKING LIKE NEW! EXCEEDS REQUIREMENTS OF MIL-C-5541 and MIL-S-5002 GOVERNMENT SPECIFICATIONS*

JFD AAA GOLD ALODIZING immerses your antenna in a gleaming golden electro-chemical bath that actually becomes a permanent part of the aluminum. This costly iridescent finish beautifies the antenna . . . protects it by preventing corrosion or discoloration from atmospheric gases or salt air . . . fights off dust and soot that impairs antenna performance.

And your lustrous gold alodized coating will never flake, peel or chip. It is as flexible and durable as the aluminum to which it is bonded . . . actually heals itself from damage.

*Attractive, Anti-Corrosion, Alodine treated.

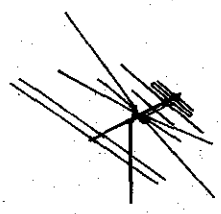
JFD AAA GOLD ALODIZING is unlike other anodized films that insulate antenna contact points. Instead, it is electrically conductive to insure maximum signal transfer to antenna terminals.

The same alodized coating (less the gold color) meets Military Specifications for use on almost all spacecraft.

* Salt Spray and color fastness data available on request.

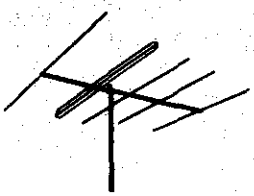
JFD

AAA GOLD ALODIZED VHF ALL-CHANNEL CONICAL YAGIS



MODEL	DESCRIPTION	LIST PRICE	STD. CTN.	Suggested Dealer Prices 1	2-9	10 & UP	DIST. COST
JET513	1-Bay Pip-Jet For 65-70 miles The popular-priced companion to the mighty Super-Jet. A great buy	11.25	2	6.75	6.07	5.63	4.05
JET513-S	2-Bay Pip-Jet For 80-90 miles Features: tubular aluminum dowels, 1" sq. alum, boom; capped ends, and other quality JFD construction features.	23.05	1	13.83	12.45	11.53	8.30

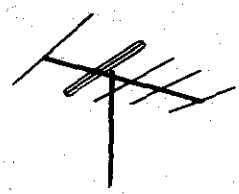
AAA GOLD ALODIZED 5 EL LO-BAND WIDE-SPACED YAGIS



MODEL	DESCRIPTION	LIST PRICE	STD. CTN.	Suggested Dealer Prices 1	2-9	10 & UP	QUAN 1-49	DIST. COST 50&OVER
5Y2	Channel 2	13.75	2	8.25	7.42	6.88	4.95	4.50
5Y3	Channel 3	13.05	2	7.83	7.05	6.53	4.70	4.40
5Y4	Channel 4	12.35	2	7.41	6.67	6.18	4.45	4.20
5Y5	Channel 5	11.40	2	6.84	6.16	5.70	4.10	3.70
5Y6	Channel 6	10.70	2	5.78	6.78	5.35	3.85	3.65

1" sq. Al. crossarm-600 ohm dipoles. 1/2" sleeve reinforced elmts., Al. brackets.
Recommended for areas: 50-85 miles from transmitter, under normal receiving conditions. 25-60 miles distant from station where terrain or atmosphere hinders signals.

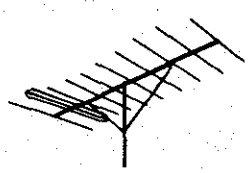
AAA GOLD ALODIZED 5 EL HI-BAND WIDE-SPACED YAGIS



5Y7	Channel 7	5.85	6	3.51	3.16	2.93	2.10	1.89
5Y8	Channel 8	5.85	6	3.51	3.16	2.93	2.10	1.89
5Y9	Channel 9	5.85	6	3.51	3.16	2.93	2.10	1.89
5Y10	Channel 10	5.85	6	3.51	3.16	2.93	2.10	1.89
5Y11	Channel 11	5.85	6	3.51	3.16	2.93	2.10	1.89
5Y12	Channel 12	5.85	6	3.51	3.16	2.93	2.10	1.89
5Y13	Channel 13	5.85	6	3.51	3.16	2.93	2.10	1.89

1" sq. Al. crossarm-600 ohm dipoles. 1/2" sleeve reinforced elmts., Al. brackets.
Recommended for areas: 50-85 miles from transmitter, under normal receiving conditions. 25-60 miles distant from station where terrain or atmosphere hinders signals.

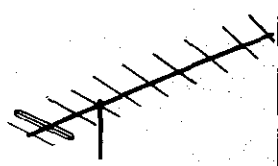
AAA GOLD ALODIZED 10 EL LO-BAND WIDE-SPACED YAGIS



10Y2	Channel 2	27.80	1	16.68	15.01	13.90	10.00	9.00
10Y3	Channel 3	26.35	1	15.81	14.23	13.18	9.50	8.50
10Y4	Channel 4	24.30	1	14.58	13.12	12.15	8.75	8.20
10Y5	Channel 5	24.30	1	14.58	13.12	12.15	8.75	7.90
10Y6	Channel 6	22.94	1	13.76	12.38	11.47	8.25	7.60

1" sq. Al. crossarm-600 ohm dipoles. 1/2" sleeve reinforced elmts., Al. brackets.
Performance proved: In locations 100-150 miles distant from transmitters over uniform terrain. In rolling or irregular country 50-100 miles distant.

AAA GOLD ALODIZED 10 EL HI-BAND PACE-SETTER YAGIS



75-100 miles

10Y7	Channel 7	11.10	4	6.66	5.99	5.55	4.00	3.15
10Y8	Channel 8	11.10	4	6.66	5.99	5.55	4.00	3.15
10Y9	Channel 9	11.10	4	6.66	5.99	5.55	4.00	3.15
10Y10	Channel 10	11.10	4	6.66	5.99	5.55	4.00	3.15
10Y11	Channel 11	11.10	4	6.66	5.99	5.55	4.00	3.15
10Y12	Channel 12	11.10	4	6.66	5.99	5.55	4.00	3.15
10Y13	Channel 13	11.10	4	6.66	5.99	5.55	4.00	3.15

Performance proved: In locations 75-100 miles distant from transmitters over uniform terrain. In rolling or regular country 50-100 miles distant from transmitter. 1" sq. crossarm - 600 ohm dipoles.
1/2" sleeved reinforced elements and aluminum brackets.

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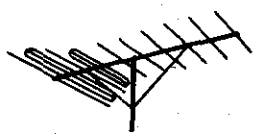
AAA GOLD ALODIZED — 10 EL PACE-SETTER BROAD-BAND YAGI

	MODEL	DESCRIPTION	LIST PRICE	STD. CT.	Suggested Dealer Prices 1	2-9	10 & UP	DIST. COST
 75-125 miles	10Y26	Channels 2 thru 13	31.95	1	19.17	17.25	15.97	11.50

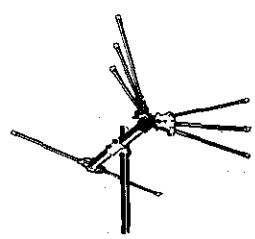
No better antenna for fringe areas where two or more low band channels are on the air. Pulls in crisp, steady pictures over 75-125 miles where terrain is even and 50-100 miles where conditions are poor. 1" sq. crossarm - 600 ohm dipoles. 1/2" sleeved reinforced elements and aluminum brackets.

AAA GOLD ALODIZED — 10 EL PACE-SETTER HI-BAND YAGI

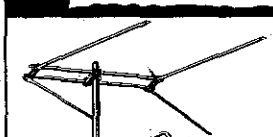
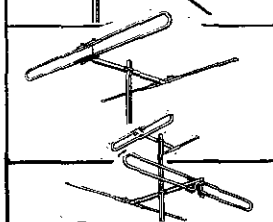
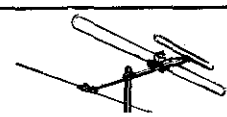
	MODEL	DESCRIPTION	LIST PRICE	STD. CTN.	Sugg. Dealer Prices 1	2-9	10&Up	DIST. QUAN. PRICES 1-49	50&Over
50-100 miles	10Y713	Channels 7 thru 13	14.60	2	8.76	7.88	7.30	5.25	4.50

Engineered for multi-high-band channels 50-100 miles under favorable receiving circumstances and 30-80 miles under adverse conditions. 1" sq. crossarm - 600 ohm dipoles. 1/2" sleeved reinforced elements and aluminum brackets.

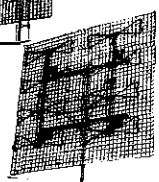
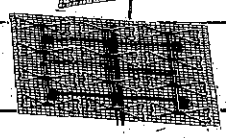
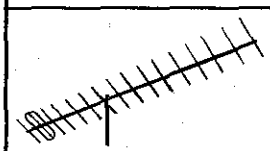
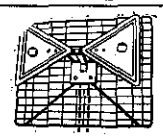
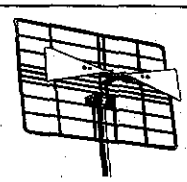
AAA GOLD ALODIZED — VHF ALL-CHANNEL JETENNA CONICAL

	MODEL	DESCRIPTION	LIST PRICE	STD. CTN.	Suggested Dealer Prices 1	2-9	10 & Up	DIST. COST
	JET660 AAA Gold Bond Alod.	1 Bay JeTenna	8.60	2	5.16	4.64	4.30	3.10
	JET661 AAA Gold Bond Alod.	2 Bay JeTenna 1" Sq. boom tub. dowels	17.95	1	10.77	9.69	8.98	6.45
	Butt-seam aluminum element series							
	JET661-SR AAA Gold Bond Alod.	2 Bay JeTenna solid rod 61ST6 alum. elem.	22.05	1	13.23	11.91	11.03	7.95
	Solid aluminum element series							

AAA GOLD ALODIZED — URBAN ALL-CHANNEL ANTENNAS

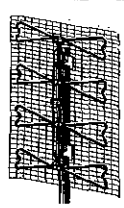
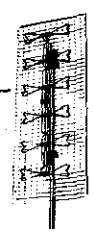
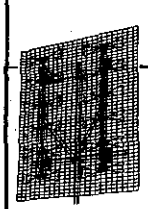
	Q800 Bulk	1 Bay Deluxe V Beam w/built in Lightning Arr.	5.40	6	3.24	2.92	2.70	1.95
	QC4 Bulk	1 Bay Folded Dipole	5.30	4	3.18	2.86	2.65	1.90
	QC5 Bulk	2 Bay Folded Hi-Lo	7.75	4	4.65	4.18	3.88	2.80
	QC10 Bulk	1 Bay HF (7-13) Folded Dipole	2.25	10	1.35	1.21	1.13	.80
	QC150 Bulk	1 Bay Inline Hi-Lo	7.20	4	4.32	3.89	3.60	2.60

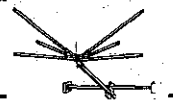
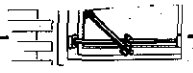
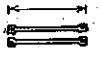
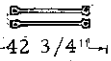
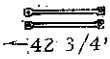
AAA GOLD ALODIZED — UHF ANTENNAS

	MODEL	DESCRIPTION	LIST PRICE	STD. CTN.	Suggested Dealer Prices 1	2-9	10 & UP	DIST. COST
	UHF202 25-35 miles	4-Bow Stack Super-sensitive cardioid dipoles, new IMPLEX "A" insulators. 250 Per order Per Location	8.20	2	4.92	4.43	4.10	2.75
	UHF208 40-70 miles	8-Bow Stack Super-sensitive cardioid dipoles, new IMPLEX "A" insulators.	20.84	1	12.50	11.25	10.42	7.50
	UHF212 75-90 miles	12 Bow Stack Super-sensitive cardioid dipoles, new IMPLEX "A" insulators.	35.14	1	21.08	31.63	17.57	12.65
	UHF352 AAA Gold Bond Alod. 25-50 miles	Alum. 12-El., Ultra-Yagi (Specify Channel No.) Wide-Spaced, all aluminum, free stacking transformers.	5.40	2	3.24	2.92	2.70	1.95
	UHF356 AAA Gold Bond Alod. 50-75 miles	Alum. 16-El Ultra-Yagi (Specify Channel No.) Wide-Spaced, all-aluminum, free stacking transformers.	8.20	2	4.92	4.43	4.10	2.95
	UHF410 AAA Gold Bond Alod. 25-35 miles	Alum. Corn. Reflect. Quantity net 250 per order, per location All Aluminum, preassembled, IMPLEX "A" insulators, deluxe.	7.60	4	4.56	4.10	3.80	2.75 2.40
	UHF600 up to 25 miles	Bow Flector Aluminum dipole, preassembled IMPLEX "A" insulator, free stacking transformer.	5.40	2	3.24	2.92	2.70	1.95
	UHF615 up to 20 miles	Bow Tie Reflector Economy version of UHF600.	3.20	6	1.92	1.73	1.60	1.15

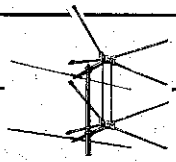
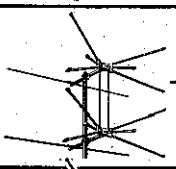
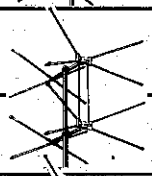
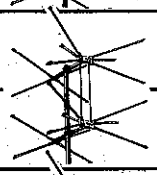
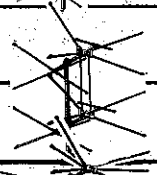
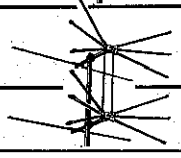
AAA GOLD ALODIZED — UHF TRANSLATOR MPATI ANTENNAS

Powerful reception channels 70 thru 83. Features powerful cardioid dipole, IMPLEX "A" insulators, ruggedized preassembled construction, broadband stacking for extra gain on translator channels. MPATI models are especially adapted to meet requirements of Strato-Vision programs.

 	TR1204 MPAT1204 25-35 miles	4-Bow Translator Educational TV antenna version of TR1204.	8.75	2	5.25	4.72	4.38	3.15
	TR1206 MPAT1206 35-60 miles	6-Bow Translator Educational TV antenna version of TR1206.	10.95	2	6.57	5.91	5.48	3.94
	TR1212 65-90 miles	12-Bow	24.95	1	14.97	13.47	12.48	8.98

	MODEL	DESCRIPTION	LIST PRICE	STD. CTN.	Suggested Dealer Prices 1	2-9	10 & UP	DIST. COST
AAA GOLD ALODIZED	**WINDOW ANTENNAS**							
	C119	Window Conical (Fits standard sash windows). Approved by N. Y. C. & Chicago Housing Authorities.	9.73	1	5.84	5.26	4.83	3.50
	EX30	Extends C119 base to fit 6 ft. span.	3.75	1	2.25	2.02	1.88	1.35
	EX119	Extends C119 base to fit 5 ft. span.	2.75	1	1.65	1.48	1.38	.99
AAA GOLD ALODIZED	**STACKING TRANSFORMERS**							
	BT2-BT6	Makes Stacked Low Band Yagi. Specify Channel Desired.	1.75		1.05	.94	.88	.63
	BT7-BT13	Makes Stacked High Band Yagi. Specify Channel Desired.	1.25		.75	.67	.63	.45
42 3/4"	J160	JET 661 (Butt Seam Aluminum)	1.50		.90	.81	.75	.54
80 1/2"	J162	Makes 4 Bay Jet Conical (Must be used with JC164 Stacking Trans.)	4.00		2.40	2.16	2.00	1.44
34 1/2" 	JC164	For use with J162 to make short stacked 4-Bay JET (2-JC164's req).	1.10		.66	.59	.55	.40
51 9/16"	J166	Makes stacked JET513-S	1.50		.90	.81	.75	.54
42 3/4"	J168	Makes stacked FB500-S	3.00		1.80	1.62	1.50	1.08
68"	J169	To regular stack VX1111 high front-to-back ratio, FB500	1.75		1.05	.94	.88	.63
96"	J170	Favors Ch. 2 thru 6	4.00		2.40	2.16	2.00	1.44
92"	J175	Makes stacked 10Y26-S	3.00		1.80	1.62	1.50	1.08
32"	J178	Makes stacked 10Y713-S	1.50		.90	.81	.75	.54
82"	J182 AAA Gold Bond Alod.	To stack all Banshee type antennas.	4.00		2.40	2.16	2.00	1.44
 42 3/4"	JC160 AAA Gold Bond Alod.	Makes JET661G or any stacked conical.	1.10		.66	.59	.55	.40
 42 3/4"	ZIPJC AAA Gold Bond Alod.	Makes stacked ZIP conicals.	.70		.42	.38	.35	.25

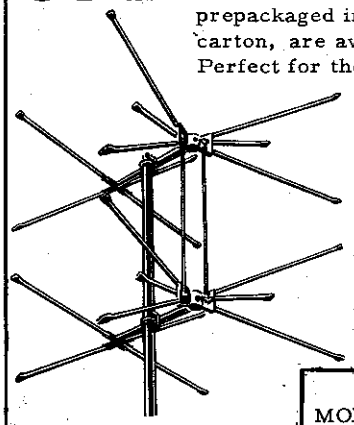
AAA GOLD ALODIZED ZIP CONICALS Minimum order 24 per cat. no.

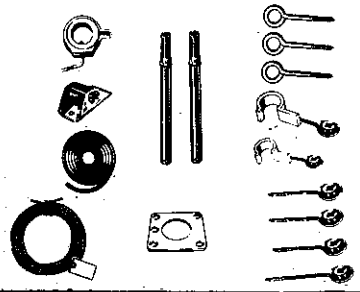
	MODEL	DESCRIPTION	LIST PRICE	STD. CTN.		Suggested Dealer Prices 1	2-9	10 & UP	DIST. COST
	ZIP1	1-Bay 6-El.	4.05	6		2.43	2.19	2.03	1.46
	ZIP12	2-Bay 6-El.	8.70	3		5.22	4.70	4.35	3.12
	ZIP121	2-Bay 6-El.	9.20	1		5.52	4.97	4.60	3.32
	ZIP2	1-Bay 6-El. w/HF El.	4.20	6		2.52	2.27	2.10	1.50
	ZIP22	2-Bay 6-El. w/HF El.	8.90	3		5.34	4.81	4.45	3.20
	ZIP221	2-Bay 6-El. w/HF El.	9.45	1		5.67	5.10	4.73	3.40
	ZIP4	1-Bay 8-El.	4.85	6		2.91	2.62	2.43	1.75
	ZIP42	2-Bay 8-El.	10.30	3		6.18	5.56	5.15	3.70
	ZIP421	2-Bay 8-El.	10.85	1		6.51	5.86	5.43	3.90
	ZIP5	1-Bay 8-El. w/HF El.	4.95	6		2.97	2.67	2.48	1.78
	ZIP52	2-Bay 8-El. w/HF El.	10.45	3		6.27	5.64	5.23	3.76
	ZIP521	2-Bay 8-El. w/HF El.	11.00	1		6.60	5.94	5.50	3.96
	ZIP6	1-Bay 8-El. w/HF Dir.	5.10	6		3.06	2.75	2.55	1.84
	ZIP62	2-Bay 8-El. w/HF Dir.	10.80	3		6.48	5.83	5.40	3.88
	ZIP621	2-Bay 8-El. w/HF Dir.	11.35	1		6.81	6.13	5.68	4.08
	ZIP9	1-Bay 8-El. Fan Front	4.50	6		2.70	2.43	2.25	1.62
	ZIP92	2-Bay 8-El. Fan Front	9.55	3		5.73	5.16	4.78	3.44
	ZIP921	2-Bay 8-El. Fan Front	10.10	1		6.06	5.45	5.05	3.64

JFD ZIP CONICAL ROOF MOUNT KITS

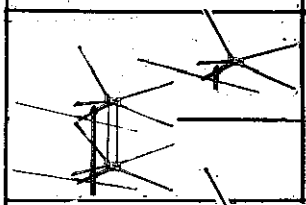
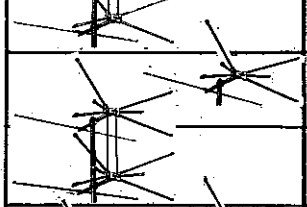
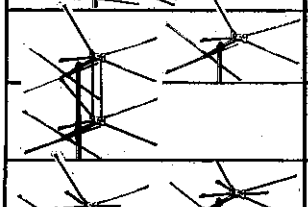
AAA GOLD ALODIZED (MIN. ORDER-25 KITS PER CAT. NO.)

CUSTOM-made kits to suit your local needs, prepackaged in eye-catching 2-color consumer carton, are available on special order. Perfect for the do-it-your selfers.



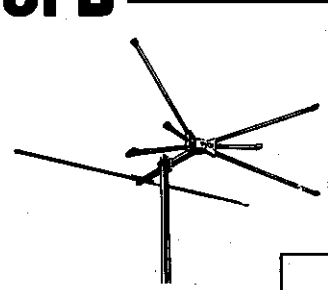


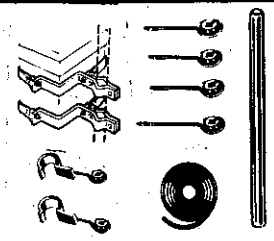
* The ZIP Conical of your choice as shown below.
* 1 - 5 ft. 1-1/4 gold alodized alum. mast for single bay, or two 5 ft. gold alodized alum. masts for two bay ZIPS.
* 1 - 50 ft. Twin lead.
* 1 - All-angle Base Mt.
* 1 - BR25 1-1/4 Guy Ring Clamp.
* 1 - 25 ft. - TW620 - 6/20 Guy Wire for single bay kits, or 50 ft. for stacked array antennas.
* 3 - BR33 - 3 Steel Guy Hooks.
* 1 - SPT125 Mast Snap-on for single Bay - 2 for stacked.
* 3 - T3 3" Screw eyes.
* 1 - T7 7" S crew eye.
* 1 - Inst. Sheet.

	MODEL	DESCRIPTION	LIST PRICE	STD. CTN.		Suggested Dealer Prices 1	2-9	10 & UP	DIST. COST
	ZIP11-RM	1-Bay ZIP11 Conical plus kit above	9.70	1		5.82	5.24	4.85	3.50
	ZIP121-RM	2-Bay ZIP121 Conical plus kit above	16.25	1		9.75	8.77	8.13	5.85
	ZIP21-RM	1-Bay ZIP21 Conical plus kit above	9.85	1		5.91	5.32	4.93	3.55
	ZIP221-RM	2-Bay ZIP221 Conical plus kit above	16.40	1		9.84	8.86	8.20	5.90
	ZIP41-RM	1-Bay ZIP41 Conical plus kit above	10.55	1		6.33	5.70	5.28	3.80
	ZIP421-RM	2-Bay ZIP421 Conical plus kit above	17.65	1		10.59	9.53	8.83	6.35
	ZIP51-RM	1-Bay ZIP51 Conical plus kit above	10.55	1		6.33	5.70	5.28	3.80
	ZIP521-RM	2-Bay ZIP521 Conical plus kit above	17.90	1		10.74	9.67	8.95	6.45

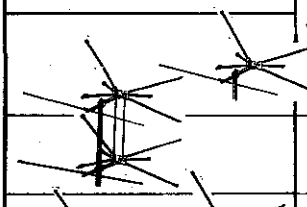
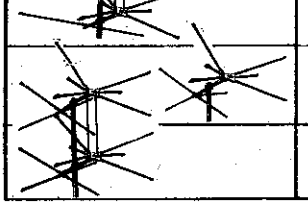
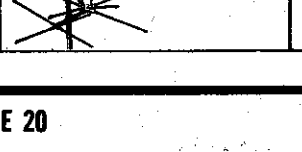
JFD AAA GOLD ALODIZED ZIP CONICAL CHIMNEY MOUNT KITS

Minimum order 25 per cat. no.





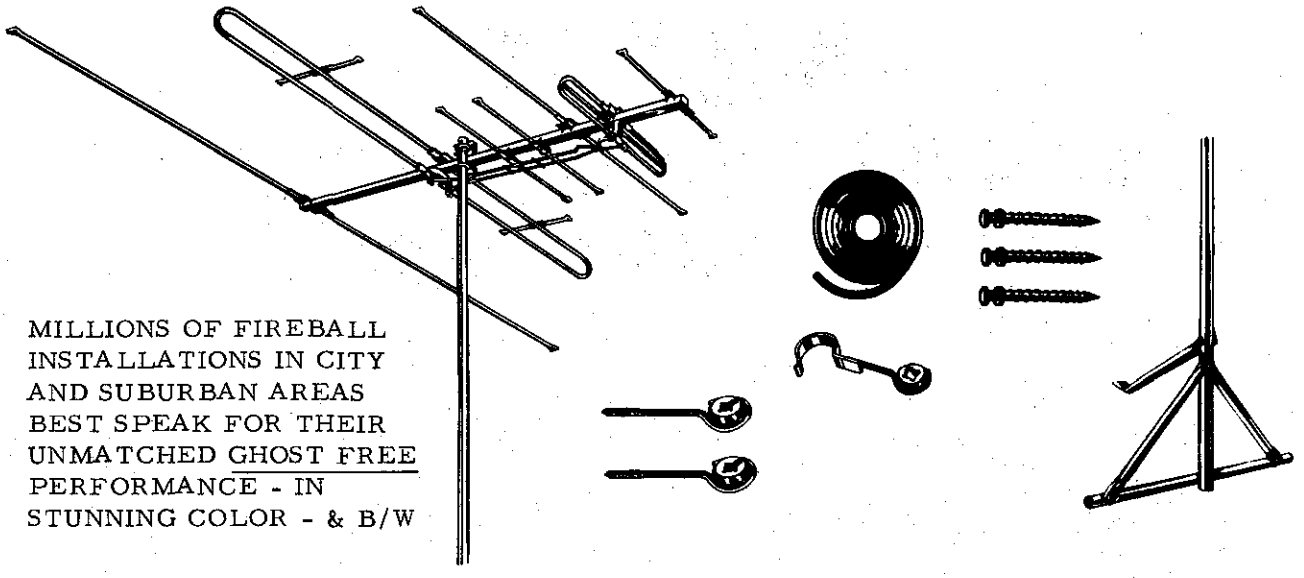
* The ZIP Conical of your choice as shown below.
* 1 - 5 ft. 1-1/4 gold alodized alum. mast for single bay, or two 5 ft. alum. masts for two bay ZIPS.
* 1 - 50 ft. 80/20 Twin Lead.
* 1 - BR2 Z-Chimney mount with straps.
* 2 - SPT125 Mast Snap-on.
* 3 - T3 3" Screw eyes.
* 1 - T7 7" Screw eye.
* 1 - Inst. Sheet.

	MODEL	DESCRIPTION	LIST PRIGE	STD. CTN.		Suggested Dealer Prices 1	2-9	10 & UP	DIST. COST
	ZIP21-CH	1-Bay ZIP21 Conical plus kit above	11.00	1		6.60	5.94	5.50	3.95
	ZIP221-CH	2-Bay ZIP221 Conical plus kit above	17.65	1		10.59	9.53	8.83	6.35
	ZIP51-CH	1-Bay ZIP51 Conical plus kit above	12.35	1		7.41	6.67	6.18	4.25
	ZIP521-CH	2-Bay ZIP521 Conical plus kit above	19.30	1		11.58	10.42	9.65	6.95

FIREBALL DELUXE TENNA PAKS-THE ANTENNA INSTALLATION IN A BOX

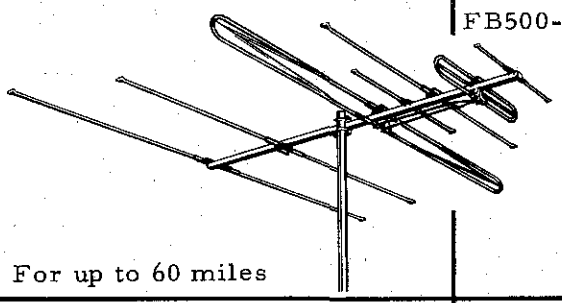
AAA GOLD ALODIZED

Note: Minimum order 25 per cat. no.



MILLIONS OF FIREBALL INSTALLATIONS IN CITY AND SUBURBAN AREAS BEST SPEAK FOR THEIR UNMATCHED GHOST FREE PERFORMANCE - IN STUNNING COLOR - & B/W

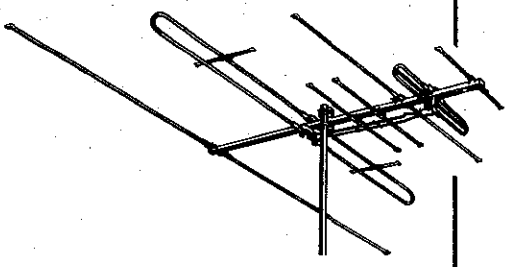
MODEL	LIST PRICE	STD. CTN.	Suggested Dealer Prices 1	2-9	10 & UP	DIST. COST
FB500-TP	21.95	1	13.17	11.85	10.98	7.95



For up to 60 miles

* 1 Bay FB500 Gold Alodized Fireball antenna.
* 1 Gold Alodized aluminum 5 ft. Tri-mount mast.
* 50 ft. 80/20 Transmission line.
* 2-3 1/2" wood screw-eye stand-offs.
* 1 mast stand-off.
* 3-self-sealing drive-in nails.

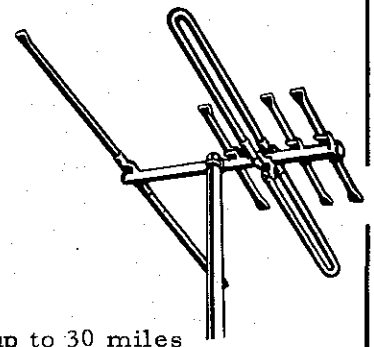
FB490-TP	17.95	1	10.77	9.69	8.98	6.95



For up to 45 miles

* 1 Bay FB490 Gold Alodized Fireball antenna.
* 1 Gold Alodized aluminum 5 ft. Tri-mount mast.
* 50 ft. 80/20 Transmission line.
* 2-3 1/2" wood screw-eye stand-offs.
* 1 mast stand-off.
* 3-self-sealing drive-in nails.

FB201-TP	13.75	1	8.25	7.42	6.88	4.95



For up to 30 miles

* FB201 antenna.
* 1 Gold Alodized aluminum 5 ft. Tri-mount mast.
* 1-50 ft. 80/20 twin-lead.
* 2-3 1/2" wood screw-eyes.
* 1 mast stand-off.
* 3-self-sealing drive-in nails.

FM Experts Agree

ON THE JFD NATIONALLY ACCLAIMED LPL-FM LOG PERIODIC ANTENNA

"I would like to take this opportunity to tell you how pleased I am with the new JFD-LPL-FM-10 antenna".

Geoffrey M. Nathanson
Editor and Publisher
FM & FINE ARTS

"The Log-Periodic FM8 has brought the signal in with amazing clarity, and strength".

Seymour N. Siegel, Director
STATION WNYC-FM

"We have just finished a thorough test of your LPL-FM10 and can confidently state that it is all that you have said".

A. L. Stewart, Chief Engineer
STATION WEKZ-AM-FM

"I have found the LPL-FM6 log periodic antenna to meet all these requirements. I am very happy with this antenna and I highly recommend it".

Robert M. Kanner
Engineering Maintenance Supervisor
RADIO STATION WMCA

"Our tests indicate that the full wavelength elements used in this new line provide twice the gain of the best 10-element f-m yagis".

Ed Walter, Editor
ELECTRONIC DISTRIBUTING MAGAZINE

"I now know there really is a Santa Claus, because he brought me the best FM reception that I have ever had with my JFD-LPL-FM10 Antenna".

Paul Dean Ford, Licensee
WPFR (FM)

"We have been testing your new LPL-FM10 Log Periodic antenna with very good results".

Guy Dryden, Chief Engineer
WTBC AM-FM

"I wish to thank you for the opportunity of trying the new JFD-FM10. As you know, in this area we have a severe multipath problem and I feel this new JFD antenna will help this problem in many locations".

W. T. Jones
MUSI-CAL PLANNED MUSIC PROGRAMMING

"The addition of the LPL-FM6 to my system was the greatest improvement that I have made to my system to date".

G. W. Laws
GRAYBAR ELECTRIC CO., INC.

- features full-wave log-periodic L-dipole system.
- derived from the powerful logarithmic periodic array used to track America's missiles and satellites through space — discovered by the Antenna Research Laboratories of the University of Illinois.

No wonder! The all-new JFD LPL-FM antenna is log-periodic engineered to give you up to 41% more gain, plus the directional selectivity, and wideband response your system needs for fidelity FM stereos or mono performance.

The secret is in the **full-wave** log periodic L-dipole cells that work with amazing frequency — independent efficiency and directivity over the entire 88-108 mc. FM/FM stereo range. Result: the **purest** FM sound your system has ever reproduced — on **more** stations — near or far.

Model LPL-FM10 (for up to 175 mile reception).

PICK UP **MORE** STATIONS . . . IMPROVE STEREO RECEPTION! With the JFD FM Tele-Amp Amplifier. Strengthens weak signals . . . feeds up to two FM receivers with crisp, distortion-free FM mono or stereo. Space-age circuitry provides up to 18 db. of amplification without overloading. No controls or adjustment. Uses standard 117 V.A.C.

Model FT1 $34.95 list.

GET RID OF INTERFERENCE!
Shut out interference and unwanted signals from TV, amateur and citizen's band radio, ignition and fluorescent noise with the JFD TV/FM Filter/Signal Splitter. Also electronically combines any TV antenna with any FM antenna so only one down-lead is needed. Also separates TV/FM signal of combination TV/FM antennas for input into separate TV set and FM system.

Model	Description	List
ACTVFM	Outdoor	$6.50
SSTVFM	Indoor	5.95

FOUR LPL-FM ANTENNAS TO CHOOSE FROM

Model	Range (up to)	List
LPL-FM10 (illustrated)	to 175 miles	$49.95
LPL-FM3	to 150 miles	$39.95
LPL-FM6	to 125 miles	$29.95
LPL-FM4	to 75 miles	$19.95

JFD LOG PERIODIC FM STEREO / FM ANTENNAS

YES! UP TO 41% MORE GAIN THAN THE BEST 10-ELEMENT YAGI

UNIFORM HIGH GAIN ACROSS THE FM BAND —The superior gain of the Log-Periodic array of L-Dipoles provides the FM and FM stereo-multiplex tuner circuits with the high signal voltage needed for properly separated stereo multiplex signals and for high fidelity performance. This is particularly important for stereo-multiplex receivers which require much higher levels of signal voltage than FM monaural receivers.

DIRECTIONAL SELECTIVITY FOR HIGHEST MULTIPATH REJECTION — The full-wavelength L-dipoles produce the narrowest horizontal FM beam ever possible—10 degrees to 25 degrees **less** than the best FM Yagi. Minor lobe levels are as much as 21.9 db below the main beam. The L-dipole system selects the direct-from-station signal and provides maximum rejection of reflected or multipath signals that can cause severe distortion of stereo signals.

HIGH FRONT-TO-BACK RATIO — Multiple-driven elements with a **back-fire** radiation pattern result in front-to-back ratios superior to the best Yagis which have end-fire radiation patterns and only two driven elements. The "notch" in the pattern in the backward direction can be used to provide more than 30 db discrimination between stations transmitting from opposite directions.

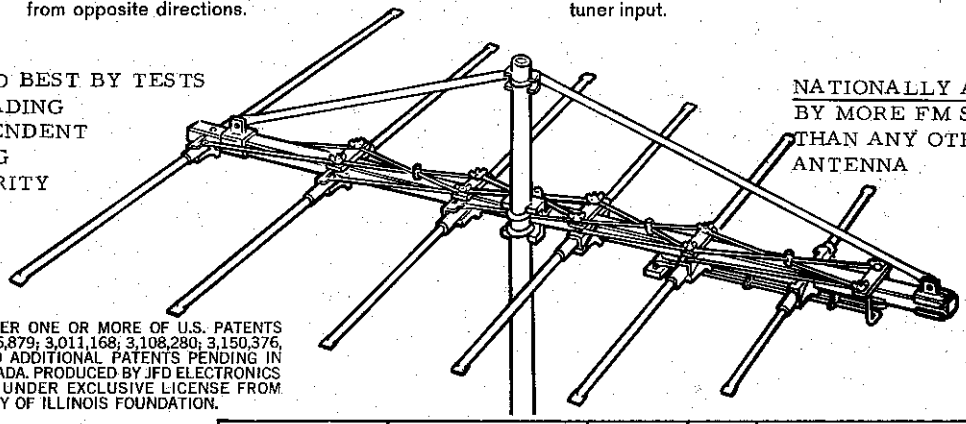
WIDE BAND RESPONSE—Frequency independent performance provides **unvarying** gain across the FM band, unlike the best FM Yagis which have as much as a 2.7 db drop-off in gain at the low frequency end of the band. The **wide**-band Log Periodic LPL-FM makes the traditional FM antenna—the **narrow** band Yagi—**obsolete.**

Mathematically designed and laboratory-tested to insure perfect performance at every frequency in the FM band. (Necessary where weak or distant monaural or stereo-multiplex signals must be received.)

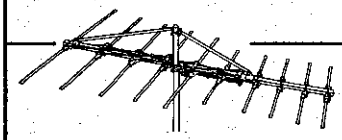
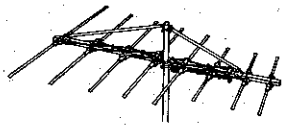
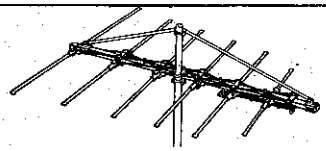
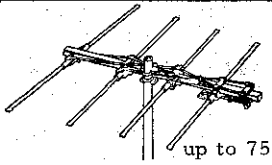
ELECTRONICALLY SUPERIOR TO ALL FM YAGIS ■ FULL-WAVELENGTH elements give up to 3 db more gain (up to 41% more signal voltage) than the best 10 element FM Yagis. Even higher gain (up to 3 db) with vertical stacking. ■ LOG-PERIODIC design gives uniform gain, impedance and front-to-back ratios across the entire FM band. ■ UP TO 30 DB FRONT-TO-BACK RATIOS provide as much as 96.8% rejection of FM co-station or adjacent station signal voltage received from the back—with much shorter crossarm lengths than comparable FM Yagis. ■ Low VSWR: 1.5:1 median. Characteristic impedance of 300 ohms from 88 to 108 mc/s. Transfers nearly all the received signal power to the tuner input.

PROVED BEST BY TESTS OF LEADING INDEPENDENT TESTING AUTHORITY

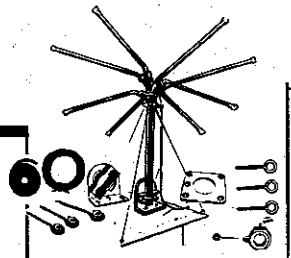
NATIONALLY ACCLAIMED BY MORE FM STEREO EXPERTS THAN ANY OTHER ANTENNA



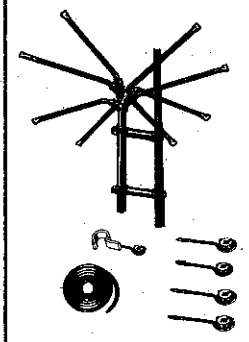
LICENSED UNDER ONE OR MORE OF U.S. PATENTS 2,958,081; 2,985,879; 3,011,168; 3,108,280; 3,150,376, RE. 25,740 AND ADDITIONAL PATENTS PENDING IN U.S.A. AND CANADA. PRODUCED BY JFD ELECTRONICS CORPORATION UNDER EXCLUSIVE LICENSE FROM THE UNIVERSITY OF ILLINOIS FOUNDATION.

	MODEL	DESCRIPTION	LIST PRICE	STD. CTN.	Suggested Dealer Prices 1	2-9	10 & UP	DIST. COST
 up to 175 miles	LPL-FM10	10 cell system (41% more gain than best 10-element Yagi)	49.95	1	29.97	26.97	24.98	17.98
 up to 150 miles	LPL-FM8	8 cell system (35% more gain than best 10-element Yagi)	39.95	1	23.97	21.57	19.98	14.58
 up to 125 miles	LPL-FM6	6 cell system Gain is as much as 30% better tan the best 6-element FM Yagi.	29.95	1	17.97	16.17	14.98	10.78
 up to 75 miles	LPL-FM4	4 cell system equal to best 5-element Yagi.	19.95	1	11.97	10.77	9.98	7.18

JFD AAA GOLD ALODIZED FM STEREO ANTENNAS



MODEL	DESCRIPTION	LIST PRICE	STD. CTN.		Suggested Dealer Prices 1	2-9	10 & UP	DIST. COST
AFM100 AAA Gold Bond Alod.	Stereo-Cone Kit with Roof Mount for all-new installations. * One preassembled Stereo Cone (in gold alodized aluminum.) * One 5" gold alodized aluminum mast. * One universal base mount for wall or roof installation. * Galvanized steel guy wire, ring standoffs and mounting hardware. * 50ft. 80 mil. 300 ohm lead.	15.95	1		9.57	8.61	7.98	5.74

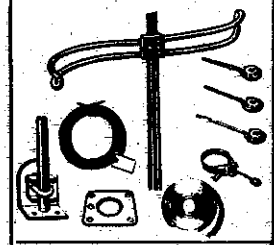


Attaches to any TV mast

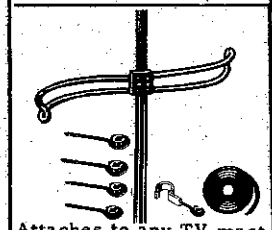
MODEL	DESCRIPTION	LIST PRICE	STD. CTN.		Suggested Dealer Prices 1	2-11	12 & UP	DIST. COST
AFM150 AAA Gold Bond Alod.	Stereo-Cone attach-it Kit for existing TV Antenna Installations. Contents: * One gold alodized Stereo-Cone Turnstile FM Antenna. * Two gold alodized mast extensions. * Two sets of U-bolts for mounting.	11.95	1		7.17	6.45	5.98	4.30
AFM175 AAA Gold Bond Alod.	Stereo-Cone "attach-it" all-directional Deluxe FM Antenna Kit for existing TV Antenna Installations. Contents: * One preassembled gold alodized all directional Stereo-Cone Turnstile FM Antenna. * Two gold alodized mast extensions. * Two sets of U-bolts for mounting to mast. * 50 ft. 80 mil. 300 ohm twin lead. * Three 3 1/2" wood screw eyes. * One 7 1/2" wood screw eye. * One mast stand-off.	13.95	1		8.37	7.53	6.98	5.02

Attaches to any TV mast

AFM350 AAA Gold Bond Alod. up to 100 miles	Stereo 6-Element Wide-Spaced Yagi for fringe FM areas - 9 db gain - flat across FM band. 1" sq. crossarm - 1/2" sleeved elements, aluminum brackets.	23.50	1		14.10	12.69	11.75	8.46

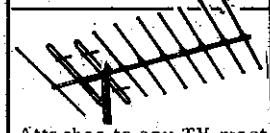


AFM400 AAA Gold Bond Alod.	Stereo All-Directional "S" Kit with roof mount for all-new TV antenna installations. Contents: * One preassembled all-directional "S" FM antenna * One 5 ft. gold alodized aluminum mast. * One universal base mount for all-new wall or roof installations. * Galvanized steel guy wire, ring, standoffs and mounting hardware. * 50 ft 80 mil twin lead.	11.95	1		7.17	6.45	5.98	4.30



Attaches to any TV mast

AFM450 AAA Gold Bond Alod.	Stereo All-Directional "S" Kit for existing TV. Antenna Installations. Contents: * All-Directional "S" FM antenna.	6.95	1		4.17	3.75	3.48	2.50
AFM475 AAA Gold Bond Alod.	Stereo-All-Directional Deluxe "S" Kit for existing TV Antenna Installations. Contents: * All-directional "S" FM Antenna. * Three 3 1/2" wood screw eyes. * One 7 1/2" wood screw eyes. * One mast stand-off. * One 50 ft. Twin Lead.	8.95	1		5.37	4.83	4.48	3.22



Attaches to any TV mast

AFM650 AAA Gold Bond Alod. up to 125 miles	Stereo 10-Element Wide-Spaced Yagi for deep fringe FM areas - 12 db gain - flat across FM band. 1" sq. crossarm - 1/2" sleeved elements, aluminum brackets.	32.50	1		19.50	17.55	16.25	11.70

FM Experts Agree

ON THE JFD NATIONALLY ACCLAIMED LPL-FM LOG PERIODIC ANTENNA

JFD ALL-TRANSISTOR UHF CONVERTERS

COMPARE THE FACTS... REASONS WHY JFD UHF CONVERSION IS BEST:

EXCLUSIVE... JFD SPACE-AGE ALL-TRANSISTOR CIRCUITRY MAKES OTHER TUBE CONVERTERS OBSOLETE

Performance of	JFD All-Transistor	vs.	Tube Types
Station Pulling Power	25% more gain pulls in tough-to-get channels		Make "A" requires an antenna mounted preamplifier. Best other make advertises only 8 db . . . 25% less gain even with extra expensive amplifying stages.
Picture and Sound Clarity	High signal-to-noise ratio delivers extra brilliance		Tubes cause microphonics, cathode and grid irregularities, and filament noises that cause lines, hum, and interference.
Tuning Sharpness	Drift-free, heatless, solid-state conversion and amplification that is frequency stabilized		Hard-to-keep-in-tune multiple stages required to overcome tube nonlinearity and filament heat changes.
Long Life Reliability	Same type as used by missiles and satellites for trouble-free performance		Constant and costly tube replacement. More complicated power supply.
Best Use of Power	Works at safer, low voltages and power levels		High voltage and power required results in more complex power supply. (NOTE: most failures occur first in power supply.)
Heating	Transistors do not need filament heating		Continuous high heat ages all components.

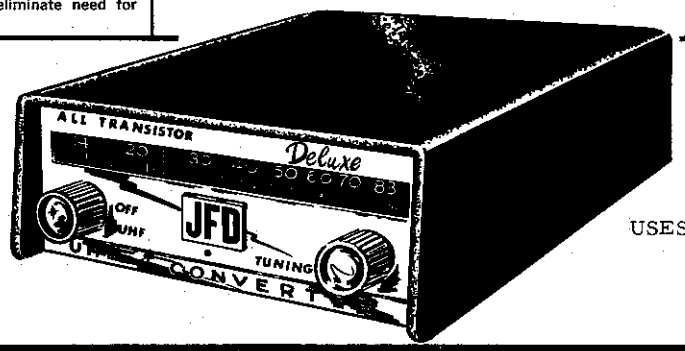
Model CR2-J

Highest Gain For Fringe Area Reception (Even Without Antenna-Mounted Pre-Amp)

The **CR2-J** Converter features a two-transistor tuned circuit in both the oscillator and IF amplifier stages. With the VHF set tuned to either channel 5 or 6, the **JFD/UHF** Converter selects and amplifies all UHF channels for the most powerful reception under all conditions, every time — even in fringe areas. Not only are microphonic and other tube noises eliminated, but the inherent high signal-to-noise level of the transistors improves sound and picture fidelity. Tube filaments, heating and other sources of drift and potential trouble are also eliminated. The total absence of heat lessens component aging and wasteful power drains. Instant warm-up and low power working levels are two more **JFD** solid-state advantages. Excellent 300 ohm input impedance match assures full signal conversion. Deluxe gold trim, built-in dial light, an AC power receptical on back to eliminate need for extension cord.

ELECTRONIC SPECIFICATIONS

1. Transistor complement .....2 transistors — 1 diode
2. Operating voltage .....117v. 60 cycle
3. Input frequency ....470 mc to 890 mc with 6 mc overtravel at each end
4. Input impedance ..300 ohms
5. Output impedance ..300 ohms
6. Output frequency ..VHF channels 5 or 6 (other to suit local conditions where needed)
7. Noise figure, average tuner amplifier..11.5 (tuner only)
8. Overall gain .....10 db typical
9. Radiation .....350 microvolts per meter maximum typical — meets and exceeds all FCC specifications
10. Oscillator drift ....250 kc maximum
11. RF pass band .....5.5 mc at 3 db minimum 20 mc at 3 db maximum
12. Line cord .....(UL) approved
13. AC convenience outlet .....American standard female socket
14. 300 ohm twin lead..36" length of trimmed and tinned lead packaged with each unit



USES FAMOUS "GI" TUNER

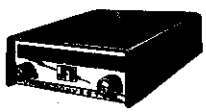
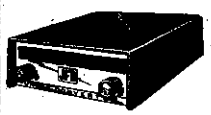
Model CR1-J

For Normal Reception, The Absolute Best Buy in UHF.

True transistor economy is achieved in this efficient unit. Although amplifying stages required for weak signal reception are not present, for normal reception Model CR1-J is the value scoop of the industry. Solid-state advantages of extremely low noise, drift-free tuning, no heating, and instant warm-up are all high quality features surpassing older, more expensive designs. VHF TV is tuned to an unused channel and UHF Converter is tuned to receive all channels from 14 through 83. Excellent 300 ohm impedance match between UHF Converter and VHF input assures maximum signal transfer. Silver trim.

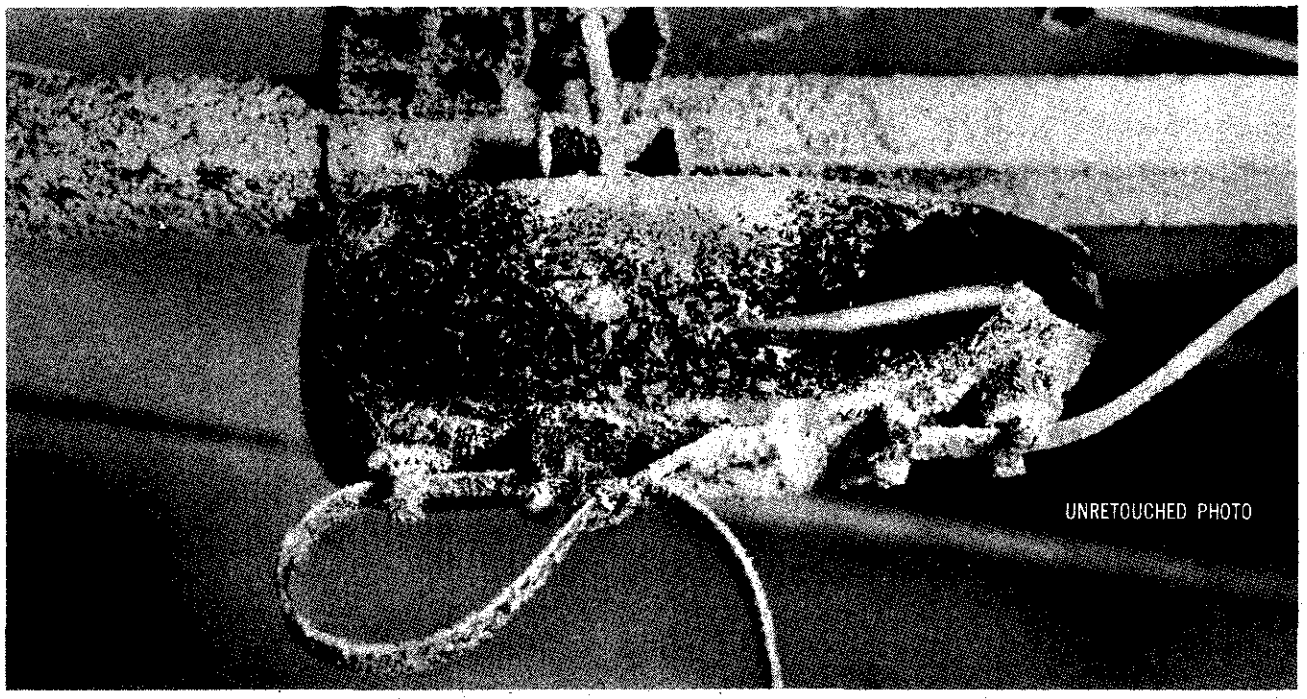
ELECTRONIC SPECIFICATIONS

1. Transistor complement ....1 transistor in the oscillator circuit plus 1 diode mixer
2. Operating voltage..117v. 60 cycle
3. Input frequency ..470 mc to 890 mc with 6 mc overtravel at each end
4. Input impedance..300 ohms
5. Output impedance .....300 ohms
6. Output frequency..VHF channels 5 or 6 (use others to suit local conditions where needed.)
7. Noise figure, average tuner amplifier .....11.5 (tuner only)
8. Overall gain .....Does not provide for amplification of the converted UHF signal
9. Radiation .....350 microvolts per meter maximum typical — meets and exceeds all FCC specifications
10. Oscillator drift ...250 kc maximum
11. RF pass band ...5.5 mc at 3 db minimum 20 mc at 3 db maximum
12. Line cord .....(UL) approved
13. 300 ohm twin lead .....36" length of trimmed and tinned lead packaged with each unit

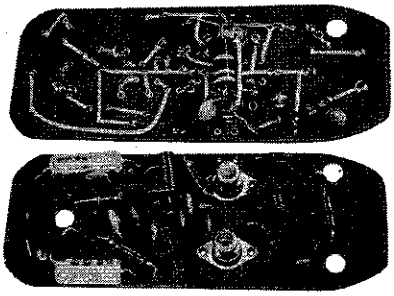
	MODEL	DESCRIPTION	LIST PRICE	STD. CTN.	Suggested Dealer Prices 1	2-9	10 & UP	DIST. COST
	CR2-J	2 Transistor and diode	39.95	6	27.95	26.95	25.95	22.50 (1-11) 21.98 (12-23) 20.98 (24-71) 19.98 (72&up)
	CR1-J	1 Transistor and diode	29.95	6	19.95	19.65	19.25	16.98 (1-11) 16.50 (12-23) 15.98 (24-71) 14.98 (72&up)

Who says a high gain TV amplifier can't be reliable?

204 HOUR TEMPERATURE/HUMIDITY/SALT SPRAY MIL-SPEC TESTS* PROVE JFD TELE-AMP STORM-PROOF RELIABILITY



AND—INCIDENTALLY—*ALL* THE *GAIN* YOU NEED IS THERE—WITH LOTS MORE TO SPARE!



UNRETOUCHED PHOTOS OF **PRINTED CIRCUIT** AND **POTTED COMPONENT** SIDES OF **TELE-AMP** AMPLIFIER BOARD **AFTER** 204-HOUR **WEATHER-TORTURE TESTS**

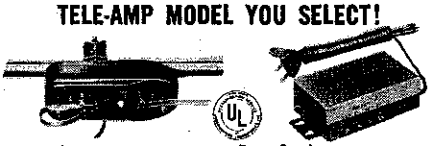
This production-line Tele-Amp was first subjected to a 72-hour temperature cycle test ranging from —40°C through +60°C. It was then placed in a humidity chamber where it ran for 66 hours in a 95% humidity at 85°F. simulated atmosphere. Next, the same Tele-Amp was placed in a 25% salt-spray chamber for 66 hours. The Tele-Amp was them field-installed on a TV antenna where **it performed with no change in characteristics. Laboratory tests that followed showed all components and circuits well within original specifications.**

JFD FACTORY-SEALED AERO-SPACE DESIGN MAINTAINS 100% RELIABILITY DESPITE SNOW, ICE, RAIN, MOISTURE, SOOT AND OTHER CORROSIVE AGENTS

What good are gain, low noise, 300 ohm match—if reliability is missing?

Now—new JFD **aero-space** design adds the vital "missing link" to today's antenna amplifiers — RELIABILITY! Result: the amplifier that **continues** to work like **new** under year-round exposure to all kinds of weather.

PROOF POSITIVE OF THE RELIABILITY YOU CAN EXPECT — REGARDLESS OF TELE-AMP MODEL YOU SELECT!

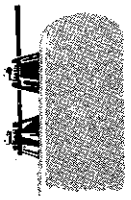


Tele-Amp Amplifier Power Supply

Model	Type	List
VUT-3	3 Transistor—VHF/UHF/TV	$49.95
VN-2	2 Nuvistor—VHF/TV	39.95
VT-2	2 Transistor—VHF/TV	39.95
VT-1	1 Transistor—VHF/TV/FM	34.95
UHT-2	2 Transistor—UHF/TV	44.95
FT-1	1 Transistor—FM/STEREO	34.95

NEW JFD AERO-SPACE ENGINEERING BUILDS IN SUPERIOR RELIABILITY

- **Aero-space Poly-U coated circuit board and housing** seals out moisture, snow, rain, ice, sleet, dust and other contaminants — locks in trouble-free color and black/white performance.
- **"OFT"—Offset Free-space Terminals** suspend vital twin-lead contacts away from housing —prevent signal leakage.



- **Silicone-sealed micro-fitted case** with fitted "O" rings further insures circuit integrity by stopping entry of blown corrosive agents.
- **Weather-Brake Terminal-Kote** sealant included for coating terminals to maintain positive and permanent signal continuity.
- **Failure-free, solid state** transistor and nuvistor design.
- **Printed circuit** maintains uniform performance over the years.

**Tele-Amp corrosion tests far exceeded MIL-STD-202C military specifications and were equivalent to four years of continuous operation under actual seasonal extremes.*

JFD ELECTRONICS CORPORATION
15th Avenue at 62nd Street, Brooklyn, N. Y. 11219
JFD Electronics-Southern Inc., Oxford, North Carolina
JFD International, 64-14 Woodside Ave., Woodside 77, N. Y.
JFD Canada, Ltd., 51 McCormack Street, Toronto, Ontario, Canada

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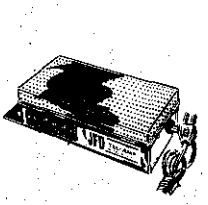
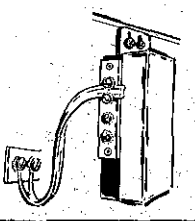
JFD NEW! VHF, UHF TV & FM AMPLIFIERS, POWER SUPPLIES (Less Antennas)

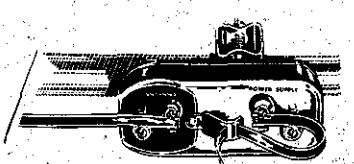
ELECTRONIC SPECIFICATIONS AND SELECTION GUIDE

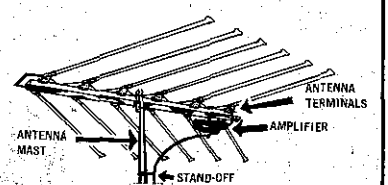
Channels	Max. Gain (db) 2-6	7-13	14-83	FM	Noise Figure (db) 2-6	7-13	14-83	FM	Max. Signal Input (μv) 2-6	7-13	14-83	FM	Max. Signal Output (μv) 2-6	7-13	14-83	FM
VUT-3	18	14	10	12	4.2	6.1	8	5.0	50,000	50,000	20,000	50,000	400,000	250,000	66,000	200,000
VN-2 *	15	12	—	—*	3.7	4.2	—	—*	350,000	300,000	—	—*	2,100,000	1,200,000	—	*—
VT-2 *	18	16	—	—*	3.9	5.9	—	—*	85,000	80,000	—	—*	680,000	520,000	—	*—
VT-1	18	14	—	14	4.2	6.1	—	5.0	50,000	50,000	—	50,000	400,000	250,000	—	250,000
UHT-2	—	—	12	—	—	—	8	—	—	—	20,000	—	—	—	80,000	—
FT-1	—	—	—	16	—	—	—	5.3	—	—	—	45,000	—	—	—	292,500

*Built-in FM Trap







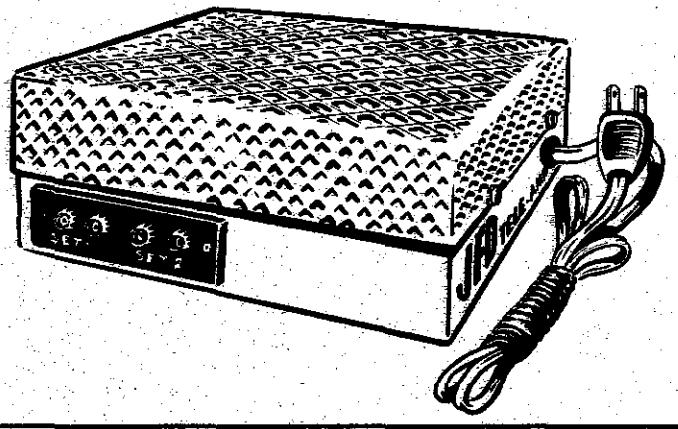


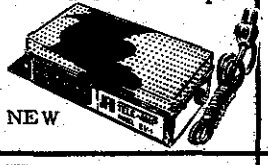
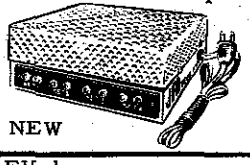
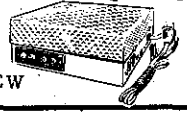
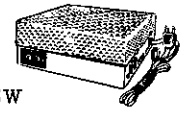
	MODEL	DESCRIPTION	LIST PRICE	STD. CTN.	Suggested Dealer Prices 1	2-5	6 & UP	Distributor Cost 6-35	36-71	72 & Over
NEW ILLUS. ABOVE	VUT-3 Tele-Amp Consisting of 3-Transistor A-3 Amp, PHV Power Supply	All-band amplification (VHF/UHF/FM) for fringe areas. Single VHF-FM and UHF output.	49.95	6	29.97	29.22	28.47	19.98	19.98	19.98
ILLUS. ABOVE	VN-2 Nuvist-Amp Consisting of 2-Nuvistor N-2 Amp, PNV Power Supply	For a very high signal strength area. Built-in FM Trap. 2-set VHF output.	39.95	6	23.97	23.37	22.77	15.98	15.20	14.50
ILLUS. ABOVE	VT-2 Tele-Amp Consisting of 2-Transistor A-2 Amp, PTV Power Supply	For combined fringe and near-fringe operation. Built-in FM Trap. 2-set VHF output.	39.95	6	23.97	23.37	22.77	15.98	15.75	15.50
ILLUS. ABOVE	VT-1 Mono-Amp Consisting of 1-Transistor A-1 Amp, PTV Power Supply	For fringe area reception. 2-set VHF-FM output.	34.95	6	20.97	20.45	19.92	13.98	13.25	12.50
ILLUS. ABOVE	UHT-2 Consisting of 2-Transistor H-1 Amp, PTH Power Supply	UHF frequencies only. 10-12 db Single UHF output.	44.95	6	26.97	24.27	22.48	17.98	17.50	16.95
ILLUS. ABOVE	FT-1 Consisting of 1-Transistor F-1 Amp, PTV Power Supply	For FM Amplification only. 2 Tuner output.	34.95	6	20.97	20.45	19.92	13.98	13.50	12.75

JFD

NEW! "TELE-AMP" HOME AMPLIFIERS FOR VHF/UHF/FM (CH. 2-83), VHF (CH. 2-13) & FM (88-108 mc.)

JFD engineers have designed a new series of transistorized amplifiers for indoor home use. Each of these new Tele-Amp units will boost signal, reduce snow and noise -- as well as feed the amplified signal into 1 to 4 sets -- in COLOR or black and white. They deliver constant isolation between sets, with minimum loss. The new Tele-Amps are especially recommended for clear color reception where maintenance of picture quality is even more necessary than on black and white. Solid state circuitry insures ultra-reliable performance over the years.



MODEL	DESCRIPTION	LIST PRICE	STD. CTN.	Suggested Dealer Prices 1-	2-9	10 & UP	Distributor Cost 6-35	36-71	72 & Over
HVU-3 VHF/UHF 3 transistor amp.  NEW	For use with an LPV-VU antenna. Excellent gain over entire 54 mc TV spectrum. Individual VHF, UHF and FM outputs for feeding all-channel VU sets, and FM tuners.	46.95	1	28.17	25.35	23.48	18.78	18.40	17.95
HV-2 1 transistor VHF amp.  NEW	Incorp. into home unit compl. with power supply in one case. Built-in FM trap, plus high pass filter. Ideal for fringe and near-fringe areas. Outputs for 4 sets.	37.50	1	22.50	20.25	18.75	15.00	14.75	14.50
EV-1 1 transistor Economy VHF amp.  NEW	All solid state design. Built-in high pass filter elim. citizens band, police, etc. interference. Outputs for 2 sets (either 2 VHF's or VHF and FM)	18.95	1	11.37	10.23	9.48	7.64	7.50	7.35
EF-1 Economy 1 transistor FM amp.  NEW	For low cost amplif. of FM and FM Stereo signals. All solid state design. Essential for FM Stereo where signal power is lost through miltiplex broadcasting. Output for one FM tuner.	17.95	1	10.77	9.69	8.98	7.18	7.00	6.82

CATV--PROBLEM OR OPPORTUNITY?

Over 1500 communities have subscribed to a CATV System. Thousands of other communities will be approached by CATV operators during the year.

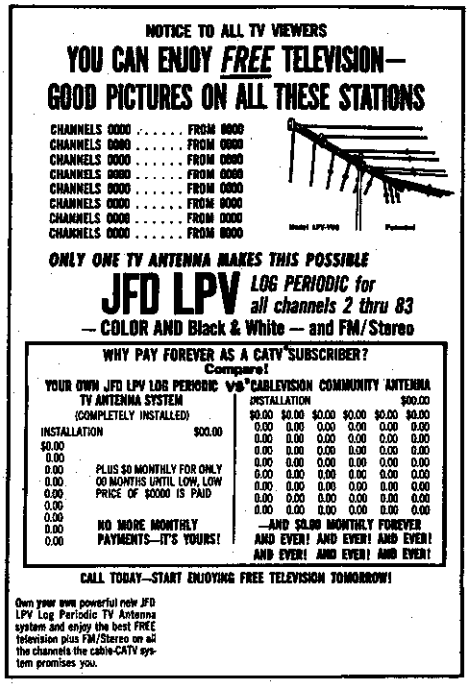
CATV is a 100 million dollar industry that has grown at your expense, your customer's expense, and our expense. If you want to prevent CATV from usurping all your TV antenna and accessory business -- we are ready to help you now.

The root of CATV's existence is the poor performance of outdoor antennas that breed viewer discontent. One of the most effective ways to stop CATV is to install the best possible antenna for best possible reception. Without a doubt, the installation of an advanced new antenna design (such as our LPV-VU Log Periodic for channels 2 to 83 & FM) will deliver what the TV owner wants: more channels, clearer pictures, good color reception. We do not claim this for every area -- but in most communities the LPV-VU will provide better pictures than a CATV set-up.

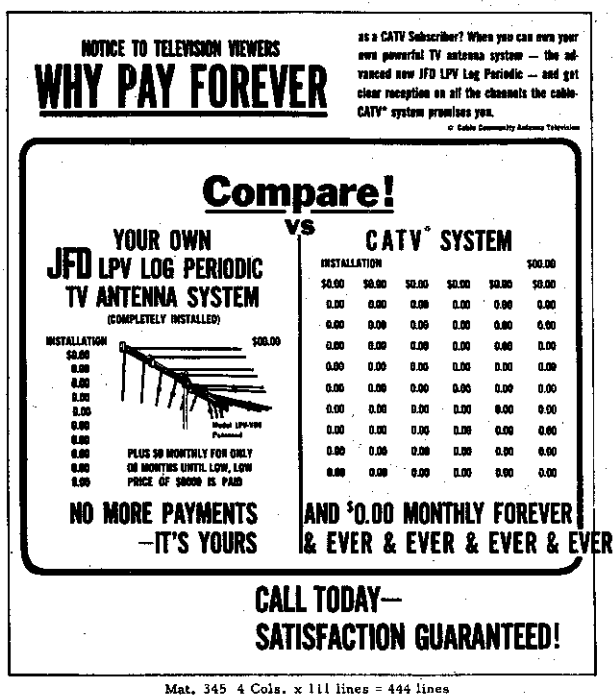
The proof is in the performance of thousands of LPV-VU installations now outperforming competing CATV systems.

Start now to convert CATV problems into profits with the fabulous 82-channel LPV-VU.

USE THESE NEW SALES PROVED NEWSPAPER MATS TO FIGHT CATV—INCREASE YOUR JFD LPV ANTENNA SALES!



Mat No. 343 3 Cols. x 98 lines = 294 lines



Mat. 345 4 Cols. x 111 lines = 444 lines

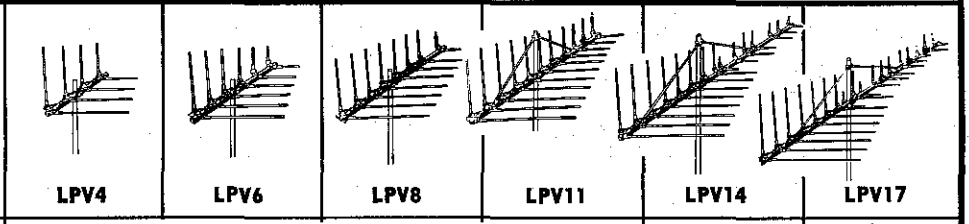
JFD LOG PERIODIC ANTENNA GUIDE

VHF
channels 2-13

FOR VHF CHANNELS

up to 50 miles	up to 75 miles	up to 100 miles	up to 125 miles	up to 150 miles	up to 175 miles

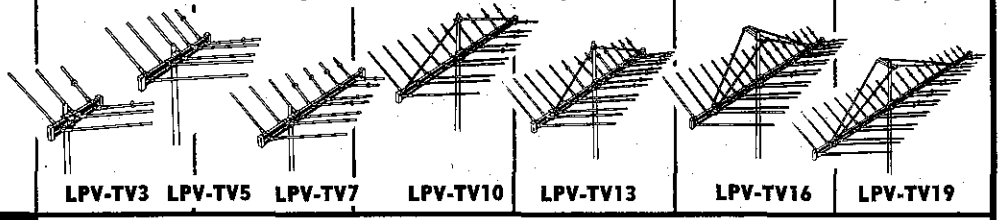
LPV-L
Log Periodic
for channels 2-13
plus FM



LPV4 | LPV6 | LPV8 | LPV11 | LPV14 | LPV17

LPV TV
Log Periodic
for channels 2-13
plus FM

up to 50 | up to 75 | up to 100 | up to 125 | up to 150 | up to 175 | up to 200



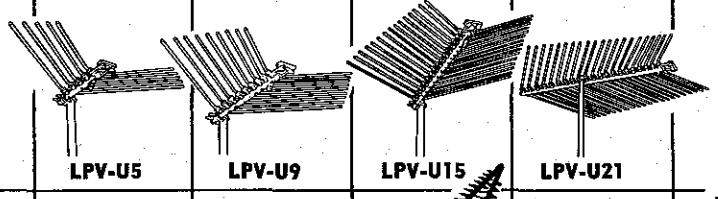
LPV-TV3 | LPV-TV5 | LPV-TV7 | LPV-TV10 | LPV-TV13 | LPV-TV16 | LPV-TV19

UHF
channels 14 to 83

FOR UHF CHANNELS

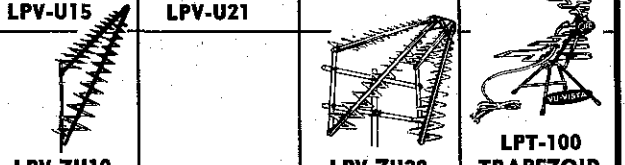
up to 25 miles	up to 40 miles	up to 60 miles	up to 80 miles	up to 90 miles	INDOOR UHF ANTENNA

LPV-U
Log Periodic
for channels 14 to 83
7-13



LPV-U5 | LPV-U9 | LPV-U15 | LPV-U21

LPV-ZU
Log Periodic
for channels 14 to 83



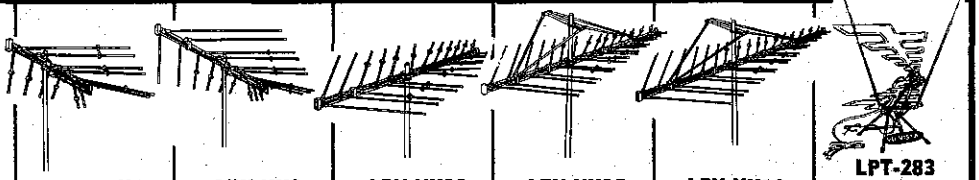
LPV-ZU10 | LPV-ZU20 | LPT-100 TRAPEZOID

VHF-UHF
channels 2 to 83

FOR VHF/UHF TV & FM/STEREO

	up to 75 miles	up to 100 miles	up to 125 miles	up to 150 miles	up to 175 miles	INDOOR VHF/UHF ANTENNA
VHF	75 miles	100 miles	125 miles	150 miles	175 miles	
UHF	25 miles	40 miles	65 miles	90 miles	90 miles	
FM	30 miles	40 miles	50 miles	60 miles	75 miles	

LPV-VU
Log Periodic
for channels 2 to 83
& F/M Stereo



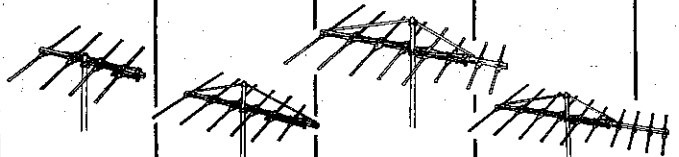
LPV-VU6 | LPV-VU9 | LPV-VU12 | LPV-VU15 | LPV-VU18 | LPT-283 TRAPEZOID

FM/STEREO

FM/STEREO

up to 75 miles	up to 125 miles	up to 150 miles	up to 175 miles

LPL-FM
Log Periodic
for F/M Stereo
frequencies
88-108 mc.



LPL-FM4 | LPL-FM6 | LPL-FM8 | LPL-FM10

June 26, 1934. N. KOOMANS 1,964,189

DIRECTIVE ANTENNA

Filed Sept. 11, 1928

UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF ILLINOIS
BEFORE JUDGE HOFFMAN
DEFENDANT EX. NO. ##
DOROTHY L. BRACKENBURY
OFEICIAL COURT REPORTER

Fig. 1.

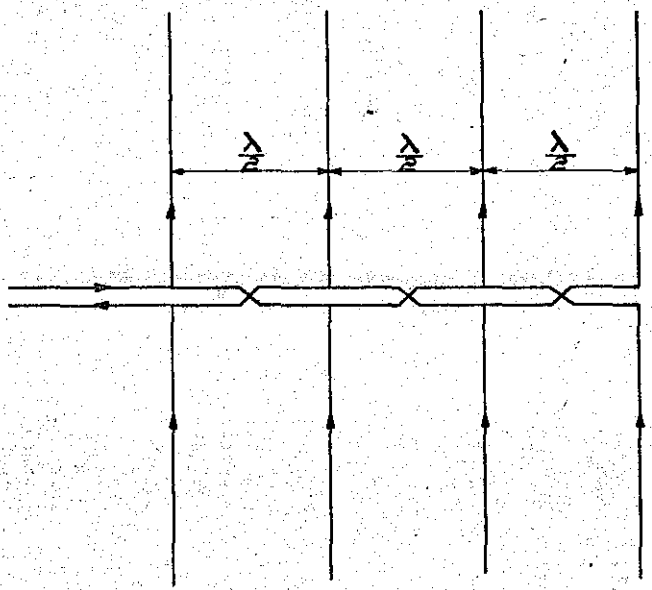
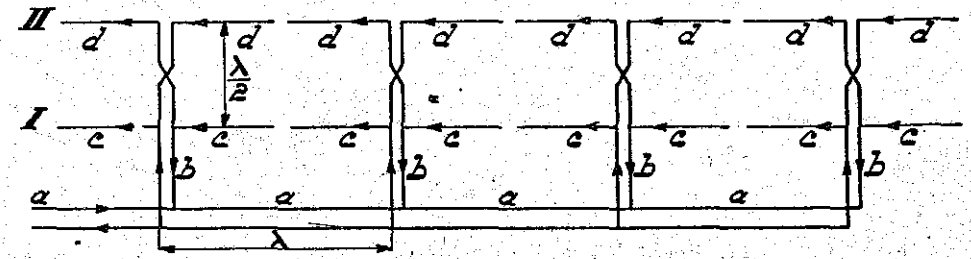


Fig. 2.



Inventor:
N. Koomans
By
Langner, Parry, Card & Langner
Attys.

Patented June 26, 1934 1,964,189

UNITED STATES PATENT OFFICE

1,964,189

DIRECTIVE ANTENNA

Nicolaas Koomans, The Hague, Netherlands, assignor to Radio Corporation of America, New York, N. Y.

Application September 11, 1928, Serial No. 305,187
In the Netherlands October 3, 1927

11 Claims. (Cl. 250—33)

This invention has reference to directive aerial systems in which the uniformity in phase of the radiant parts is endeavoured to be ensured.

These systems may be efficiently composed with the aid of symmetrically arranged feeders having connected to them doublets spaced at one wave length or a half wave length apart, the feeders being in the latter case alternately crossed.

It can be established theoretically:

1. That in this manner all the doublets are in the same phase;

2. That this is not detrimentally influenced by reflections in the tapping points.

3. That all the doublets receive an equal quantity of current, the last one consequently as much as the first one, when the feeder has no damping. The latter has therefore to be constructed so as to have a large surface.

A uniphasal straight radiating aerial wire is a directive antenna adapted for transmission as well as for reception. The more wave lengths it is long, the greater is the directive effect.

According to the invention such radiating aerial can be composed in a particularly efficient and simple manner by building it up from doublets which are branched off a feeder. If a directive aerial system is wanted which has a greater directional effect, because of a beam being also formed in another plane, an aerial system according to the invention can be constructed which comprises two or more similar aerials spaced at a half wave length apart, the conductors which are branched off the feeders, having doublets, alternately crossed, connected to them.

The invention will be more clearly understood by reference to the accompanying drawing in which

Figure 1 shows a feeder, having connected to it doublets, alternately crossed, which are spaced at a half wave length apart.

Figure 2 shows a symmetrical feeder to which branch conductors *b* are connected so as to be spaced at a wave length apart.

These branch conductors have the doublets *c* connected to them in the manner shown in the figure by arrows.

In this manner a uniphasal aerial I, according to the invention, is formed.

If the branch conductors *b* are lengthened as shown in Figure 2 and if doublets *d* are connected to the said branch conductors so as to be crossed, a second uniphasal aerial II is produced which is at a half wave length spaced apart from the first one.

The said crossing can be effected either by arranging the doublets *d* so as to be crossed or by crossing the branch conductors.

If the branch conductors are still further lengthened, it is possible to provide still more uniphasal aerials which are alternately crossed and a still greater number of aerials which are parallel to each other is obtained.

The arrangement shown in Figure 2 may be provided in any desired direction. As a rule the aerials will be arranged so as to be either horizontal or vertical.

In the foregoing, uniphasal aerials are referred to and they are illustrated to be situated in a straight line. However it is evident that slight differences do not cause the arrangement to depart from the scope of the invention. These differences may be of different nature, for example the successive doublets may not be situated in a straight line or spacings may be provided by leaving out a doublet now and then or by making the doublets slightly shorter.

Referring to Figure 2, a uniphasal aerial according to the invention is formed by branching conductors which are spaced at a wave length apart of a feeder and connecting to them doublets of twice a half wave length.

The same result may be obtained by conductors branched off the feeder spaced at a half wave length apart and alternately crossed, and by connecting to these branching conductors doublets of twice a quarter wave length.

The invention is adapted for transmission as well as for the reception antennas.

What I claim is:

1. In a communication system for transmitting or conveying intelligence from one geographically situated point to another by means of propagated electromagnetic wave energy derived from the flow of high frequency undulatory electrica currents operated upon in accordance with the intelligence to be transmitted, a directive antenna system comprising a two wire conducting transmission line the wires of which are relatively close together and being crossed at points one-half wave length apart, and linear radiators connected to the two wire line and arranged normally thereto at points intermediate the crossing points of the two wire line.

2. In a communication system for transmitting or conveying intelligence from one geographically situated point to another by means of propagated electromagnetic wave energy derived from the flow of high frequency undulatory electrical currents operated upon in accordance with the

intelligence to be transmitted, a directive antenna system comprising a relatively closely spaced two conductor transmission line, each conductor thereof being continuously conductive throughout its length, and linear conductors arranged normally to the line and spaced apart a whole multiple of a half wave length on said line and connected to the line whereby, by virtue of their spacing, each of said linear conductors is excited in predetermined phase relationship and whereby the radiant action of all of the linear conductors is highly directional.

3. In a communication system for transmitting or conveying intelligence from one geographically situated point to another by means of propagated electromagnetic wave energy derived from the flow of high frequency undulatory electrical currents operated upon in accordance with the intelligence to be transmitted, a directive antenna system comprising a relatively closely spaced unbroken two-conductor transmission line, the conductors of which are conductive throughout their length, and linear conductors arranged normally to said line and directly connected thereto for obtaining a predetermined phase relationship spaced successively a half wave length apart in the direction of the line, said linear conductors by virtue of their spacing, having an overall highly directional radiant characteristic.

4. In a communication system for transmitting or conveying intelligence from one geographically situated point to another by means of propagated electromagnetic wave energy derived from the flow of high frequency undulatory electrical currents operated upon in accordance with the intelligence to be transmitted, a directive antenna system comprising a multi-conductor transmission line crossed at point one-half wave length apart, and linear radiators one-half wave length apart, connected to the line at points intermediate the crossing points of the line whereby, by virtue of the spacing of the radiators, the entire system is given a highly directional radiant characteristic.

5. In a communication system for transmitting or conveying intelligence from one geographically situated point to another by means of propagated electromagnetic wave energy derived from the flow of high frequency undulatory electrical currents operated upon in accordance with the intelligence to be transmitted, a directive antenna system comprising a substantially straight two wire transmission line, a plurality of two wire branch lines connected to and arranged normally of said transmission line, and linear radiators directly connected to said two wire branch lines said branched lines being crossed at points one half wave length apart.

6. In a communication system for transmitting or conveying intelligence from one geographically situated point to another by means of propagated electromagnetic wave energy derived from the flow of high frequency undulatory electrical currents operated upon in accordance with the intelligence to be transmitted, a directive antenna system comprising a substantially straight two wire transmission line, a plurality of two wire branch lines connected to and arranged normally of said transmission line, and linear radiators connected to said two wire branch lines, successive radiators on said branch lines being spaced one-half wave length apart.

7. In a communication system for transmitting or conveying intelligence from one geographically situated point to another by means of propagated electromagnetic wave energy derived from the flow of high frequency undulatory electrical currents operated upon in accordance with the intelligence to be transmitted, a directive antenna system comprising a closely spaced two wire transmission line, closely spaced two wire branch lines spaced apart on said transmission line a multiple of a wave length and arranged normally to said transmission line, and linear radiators arranged normally to said branch transmission lines, and spaced apart thereon one-half wave length, said branch lines being crossed at points one-half wave length apart and intermediate said radiators whereby all of said radiators carry high frequency currents of predetermined phase relationship giving the entire system a highly directional characteristic.

8. A directive antenna system comprising a two wire conduc'ing transmission line the wires of which are relatively close together and crossed at points substantially one half wave length apart, and linear radiators connected to the wire line, said linear radiators being spaced apart a whole multiple of a half wave length.

9. A directive antenna system comprising a two wire conducting transmission line the wires of which are relatively close together and crossed at points substantially one half wave length apart, and linear radiators connected to the wire line and arranged normally thereto at points intermediate the crossing points of the two wire line, said linear radiators being spaced apart a whole multiple of a half wave length.

10. A directive antenna system comprising a substantially straight two wire transmission line, a plurality of two wire branch lines connected to and arranged normally of said transmission line, and linear radiators connected to said two wire branch lines, successive radiators of said branch lines being spaced one half wave length apart, and said branch lines being crossed between successive radiators.

11. In a communication system for transmitting or conveying intelligence from one geographically situated point to another by means of propagated electromagnetic energy derived from the flow of high frequency undulatory electrical currents operated upon by the intelligence to be transmitted, a directive antenna system comprising a closely spaced two conductor transmission line, and linear radiators arranged normally to said line and connected thereto in such manner as to obtain a predetermined phase relationship and spaced successively a half wave length apart in the direction of the line, said linear radiators by virtue of their spacing having an overall directive characteristic.

NICOLAAS KOOMANS.