THE WØPW 220 MHZ. EME ANTENNA

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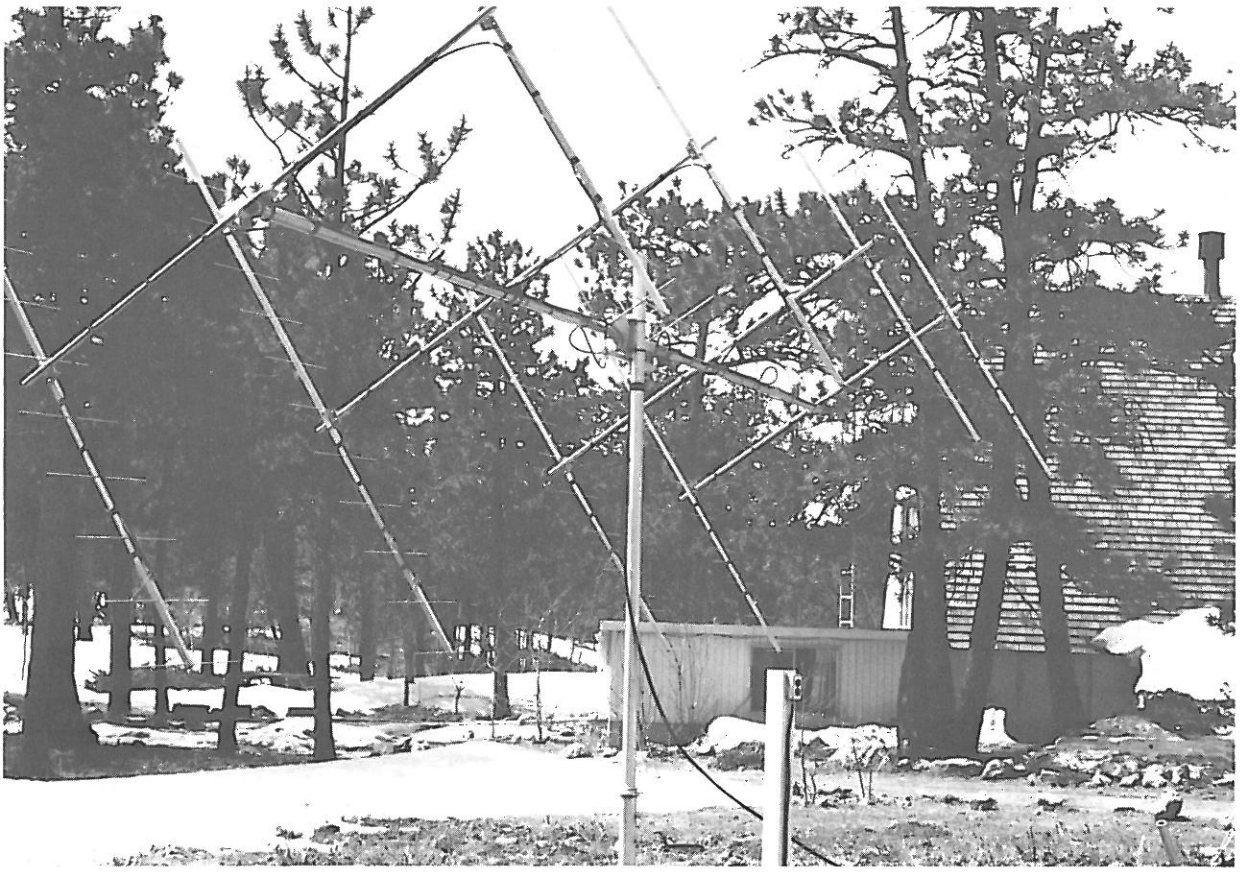
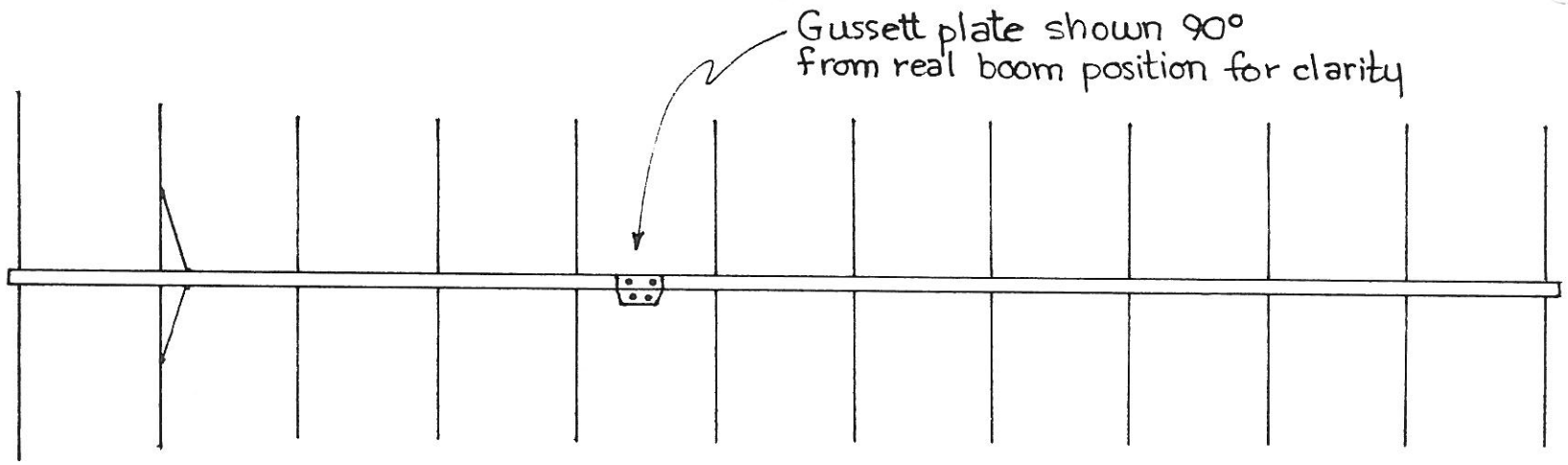
AS-49-28



Brief Description

The WØPW 220 MHz EME antenna consists of eight 2.2 λ Yagis. The main horizontal boom is 25' long and is 2" steel conduit. The support booms are 8' long and are 1" steel conduit. The Yagis are divided into groups of four. These four are separated ≈87". The two groups are separated somewhat more than the 87" (≈12" more). Each Yagi is delta matched to 200 ohms. A four to one coaxial balun transforms this to 50 ohms. Equal length coaxial lines from each antenna feed an eight port 50 ohms power divider. Calibration discs provide elevation and azimuth information so that the antenna pointing accuracy is within approximately one degree.



220 MHz. 12 ELEMENT 2.2λ YAGI GAIN ≃ 14.3 dbi

Boom 1" SQ. ALUM. TUBE ≃ 9'11"

ELEMENT MAT. ¼" dia. ALUM. ROD OR TUBE

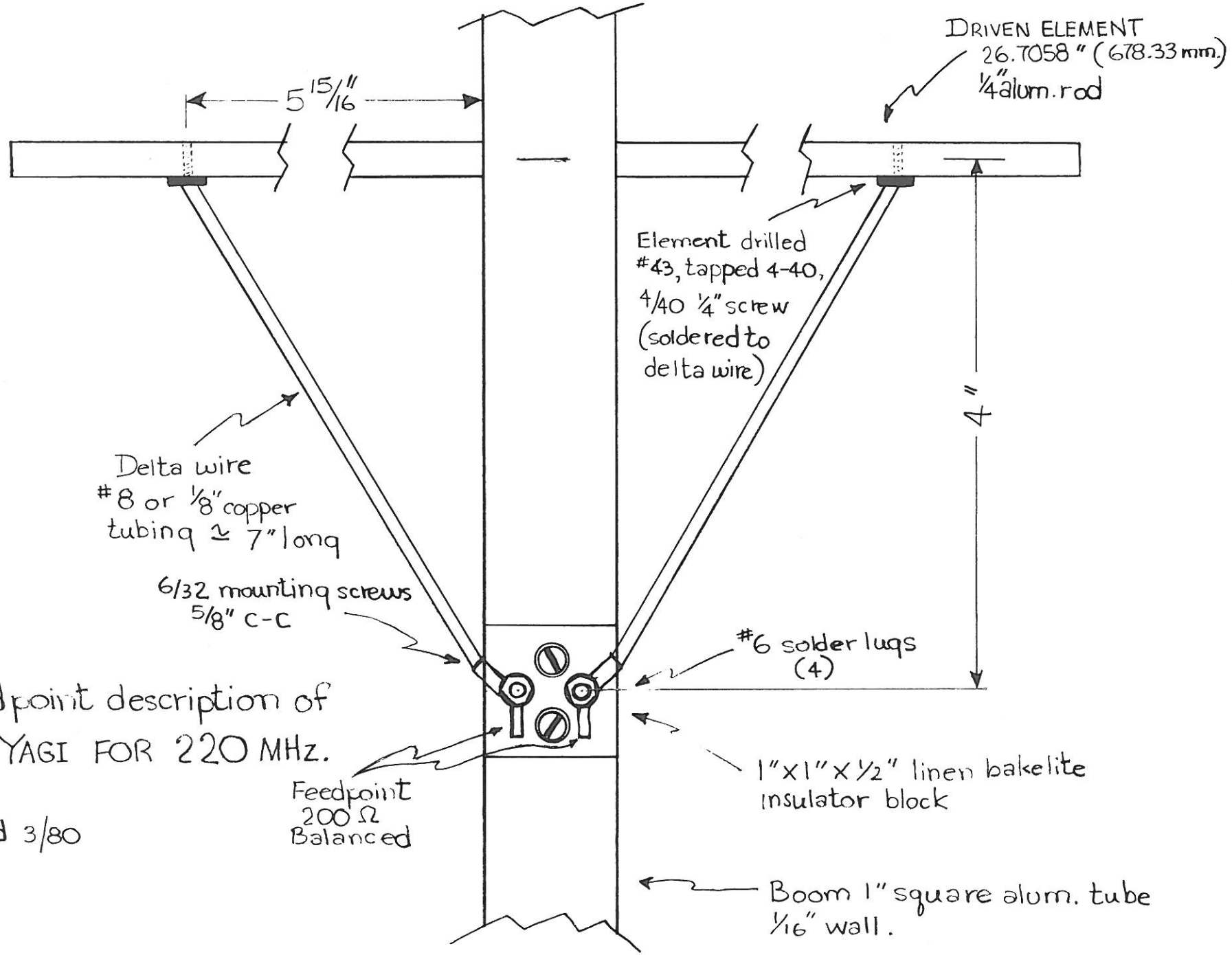
REFL.	26.7"	678 mm.
DIPOLE	26.7"	678 mm.
D1	24.45"	621 mm.
D2	23.7"	602 mm.
D3, 10	23.3"	592 mm.
D4, 9	22.9"	581.5 mm.
D5-8	22.5"	572 mm.

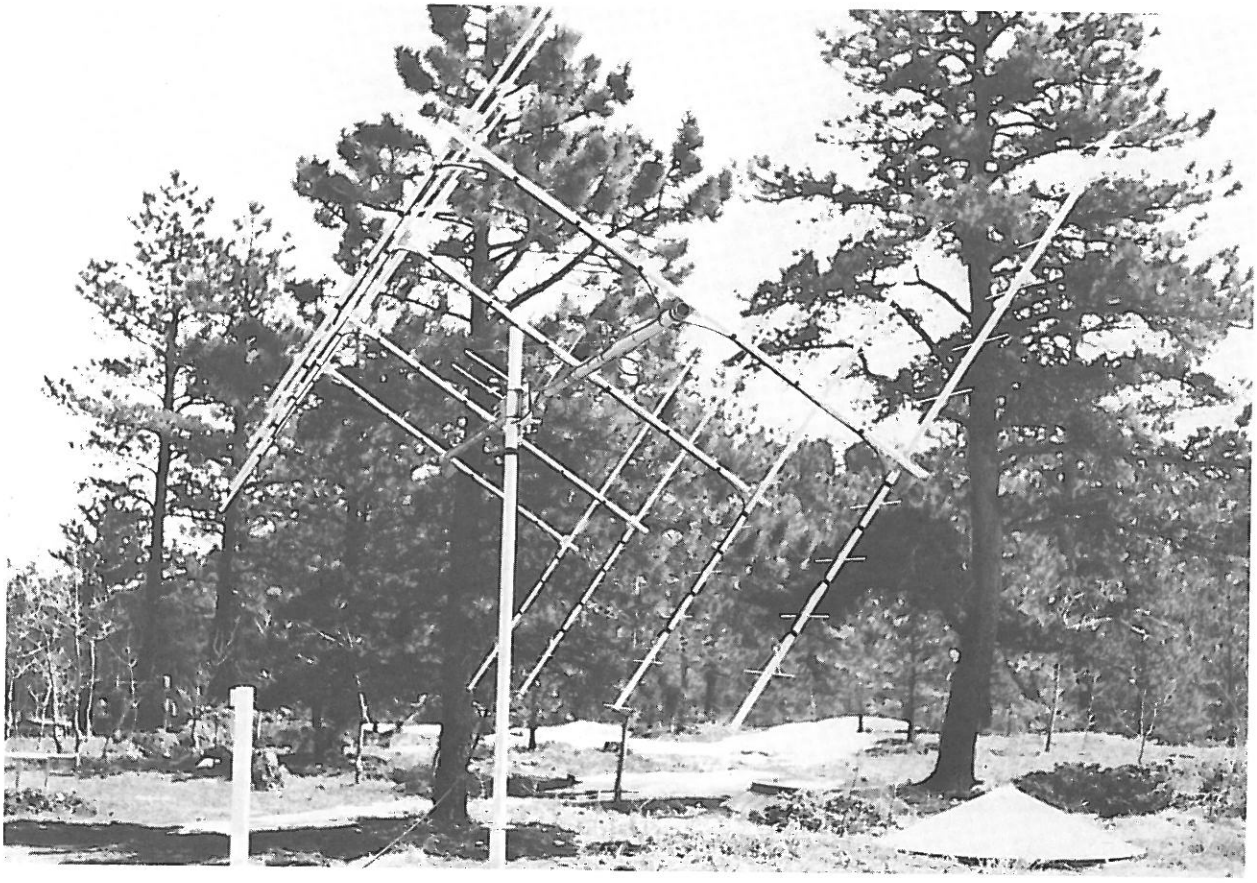
ELEMENT SPACING 10.74" (ALL)

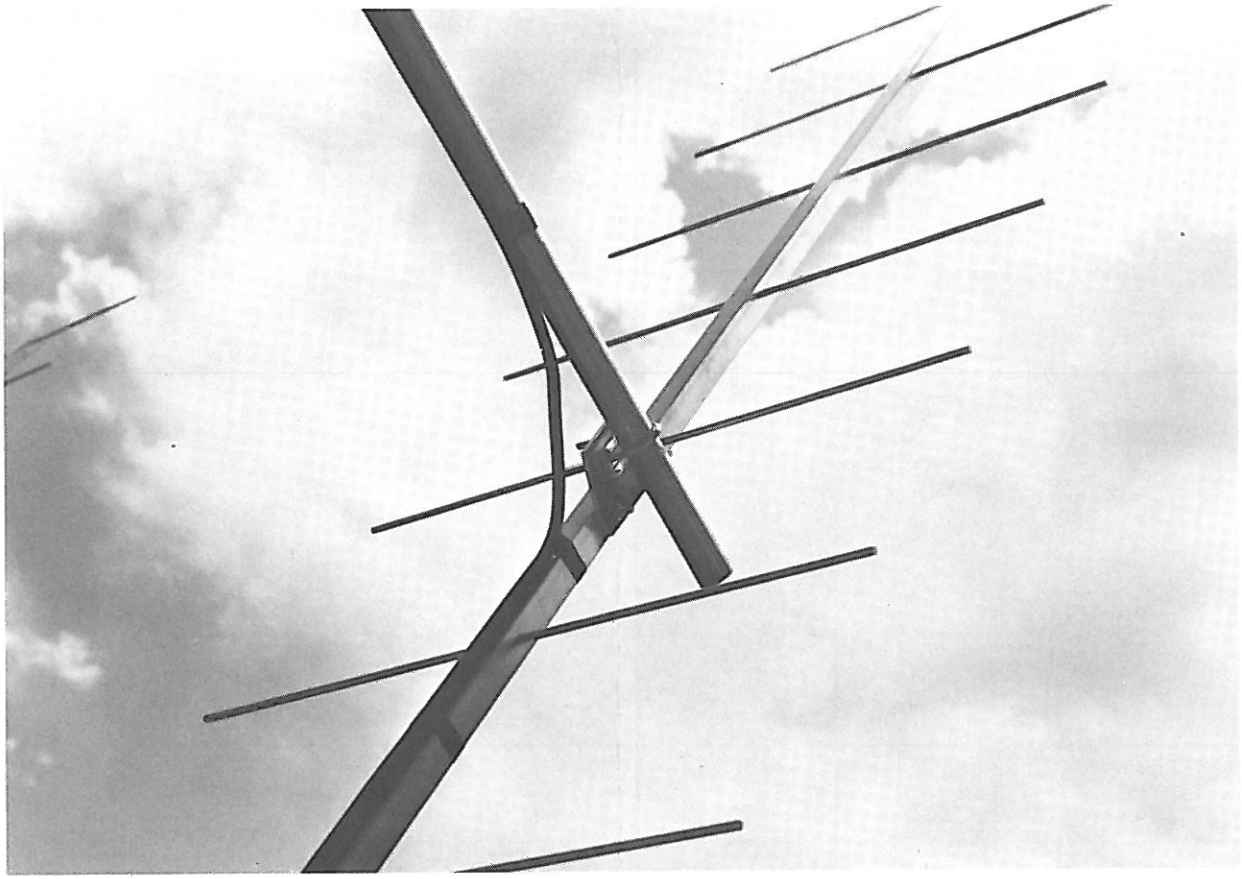
BALUN LENGTH (.66VP) = 17.7"

(.7VP) = 18.79"

D. Hilliard, WØPW
5-80


DRIVEN ELEMENT
26.7058" (678.33 mm.)
¼" alum. rod
5 15/16"
Element drilled
#43, tapped 4-40,
4/40 ¼" screw
(soldered to
delta wire)
4"
Delta wire
#8 or ⅛" copper
tubing ≅ 7" long
6/32 mounting screws
5/8" c-c
#6 solder lugs
(4)
Feedpoint description of
2.2λ YAGI FOR 220 MHz.
D. Hilliard 3/80
Feedpoint
200 Ω
Balanced
1"x1"x½" linen bakelite
insulator block
Boom 1" square alum. tube
⅛" wall.

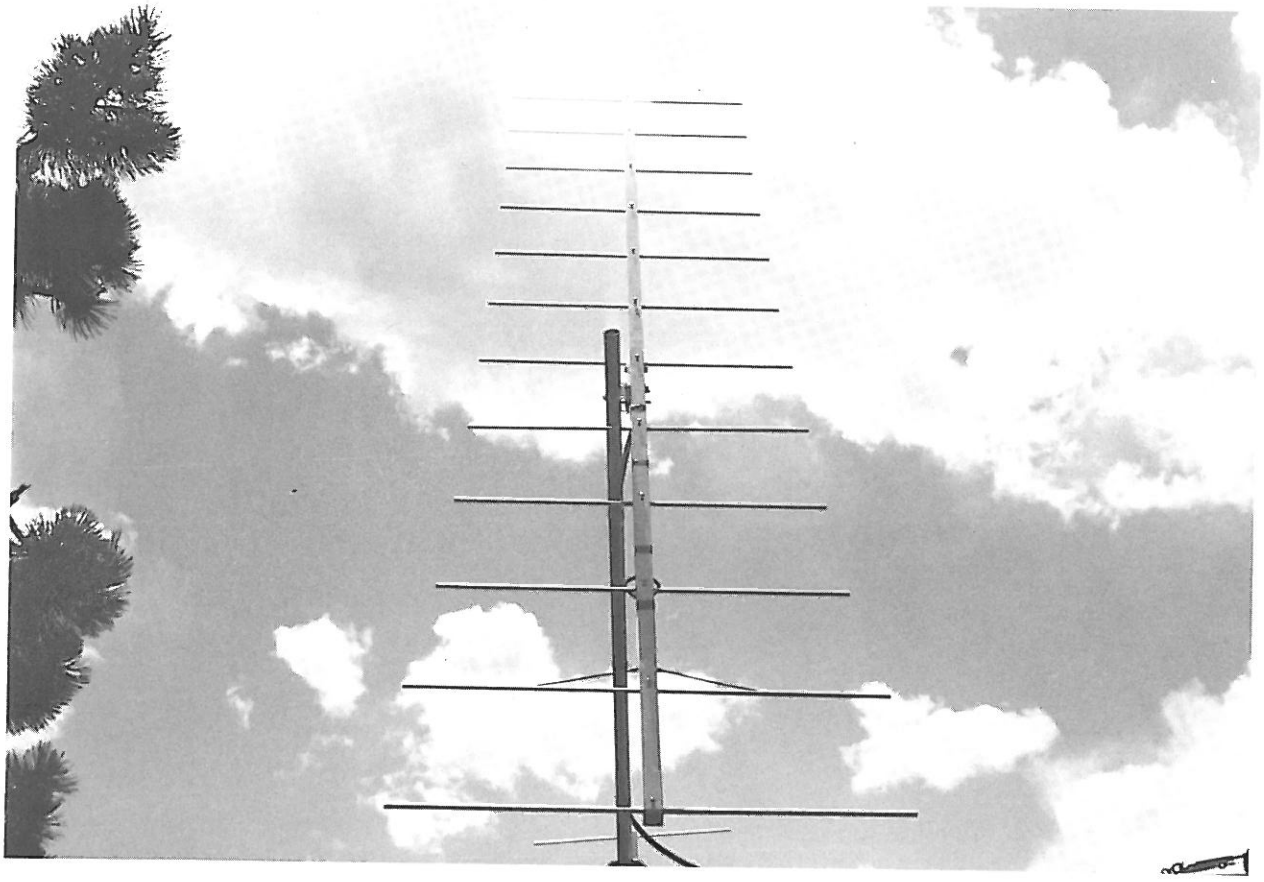




Shows method of mounting Yagi boom to support boom. Single TV U-bolt clamps gusset plate to boom.

Gussett plate supporting main horizontal boom (25' long). Also shows umbrella support wires (2 planes) to eliminate sag. The 8 port 50 ohm power divider and elevation indicator can also be seen in this view.

Main bearing, vertical support and azimuth calibration disc.



A view looking down the boom of a single Yagi.

View of delta matched dipole element and balun.

View of method of securing support booms to main boom. Support boom is 8' length of 1" conduit welded to ¼" steel gusset plate, secured to main boom (2" conduit) with 2-2¼" muffler clamps.