

Cost/Quantity Data

Description	Quantity		\$Standard Length	\$Pro-rated Low Qty	\$Pro-rated Larger Qty
	25G	45G			
Al. angle	96-in.	116-in.	21-ft \$84	\$ 42	\$ 26
1½-in. pipe	124-in.	136-in.	21-ft \$36	\$ 18	\$ 18
Al. plate 8-in.W	32-in.	32-in.	48-in. \$50	\$ 36	\$ 20
Bearing 1-15/16-in.	1	1	\$35	\$ 35	\$ 35
U-bolts 5/16-in.	10	10	\$ 8	\$ 8	\$ 8
Welding			\$40	\$ 40	\$ 40
Totals			\$253	\$179	\$147

- U-bolts #011, Chicago Hardware for 1-in. pipe, 5/16 × 1-3/8 × 2-3/16, 1-in. thread.
- Aluminum plate 3/8-in. × 8-in. wide called rectangular bar (extruded) 6061-T6511, stock length 12 ft, cheaper because it doesn't have to be sheared.
- Prices per pound on the aluminum were \$3.50 for small quantity, \$2.19 for #100 and over.
- The flange bearing could be eliminated on small antennas and a wood one substituted.

10-meter beam (approx 8 sq ft). I found that any wind over 55 mph would either shear the brake housing or would break the brake wedge. Also, I tried a Rotobrake on the 20-meter log-Yagi antenna (approx 15 sq ft) and found that, over about 70 mph, the large gear would break a tooth. All antennas have been in the air about 10 years except for the 204BA, which has only been up a year (thus explaining why the Ham-M has held so far). Also, the 204BA is the only antenna/rotator that is not pinned. Not pinning definitely helps the situation, but also gives you a lot of exercise climbing towers to reorient the antennas after windstorms.

The only failure besides rotators has been with the 20-meter swing arm which, after seven years with the 52-ft boom antenna, fatigued and broke just above the rotator. The solution to this failure was to add two ¼-inch steel gusset plates approximately 5-inch × 3-inch to this round to round pipe joint. I have noticed no deformation of any other part whatsoever. The heaviest part of the whole set-up (excluding the rotator) is the swing arm weighing 32 pounds, with the side mounts about 11 pounds each.

The cost of each side mount depends on your price break of the aluminum parts, ie, if you buy enough angle and plate for one side mount it is rather expensive; but, if you have some on hand or can get a group order together, the price comes down rather well. Local costs (5/87) for 1 length of 1½-inch water pipe is \$36, 1 (21-inch) length of aluminum angle is \$84, 1-15/16-inch flange bearing is \$35 (I substituted wood on 10- and 15-meter mounts), 3/8-inch aluminum plate 8-inch × 4-inch is \$30,

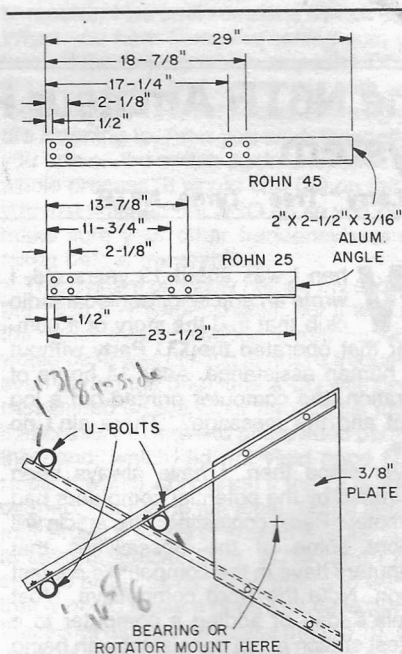


Fig 3—Bearing Plate Detail

U-bolts (10 used per mount) 5/16-inch × 2-inches are 75 cents (I closed up these U-bolts for a better tower leg fit).

The small stub mast on the swing arm could be replaced with a plate to match your boom to mast plate on the antenna. The reason I did not do this was because my antennas were an odd number of elements, thus putting an element very close to the