

# Safe and Easy Field Day Antenna Raising

BY JOHN GREVE,\*

*Field Day is fast approaching, and with it the logistical problems of putting up efficient antennas in the field so they'll stay up, and doing the job without sending half the club off to the First Aid tent. The following article describes one well-organized CD group's technique*

**T**HE most feared—and often the most satisfying part of a field day is the erection of the antennas. There is no prettier sight than shining aluminum tubing etched against a clear blue summer sky. However, a 30' push up tower buckled 10' from the bottom can dampen any group's enthusiasm. Luckily there is a simple and reasonable solution to this problem. The apparatus to be described has been in use for 9 years by our local CD Communications group, often by people who have never raised an antenna before. This should testify to its simplicity and reliability.

Figure 1 is the base plate components for use at the base of each telescoping mast. They can be fabricated at any local welding shop. All components are readily available. Figure 2 shows the guy rope anchor. There are 6 of these required for each tower. If properly installed, the low profile will minimize the possibility of tripping and there are no sharp edges or points to impail the individual. Also, this design can be successfully driven into most soils and extraction is an easy task. The erection sequence follows. See figs. 3 and 4 for details.

1. Locate the desired spot and check for rocks or other obstructions that might interfere with the driving of the base stake and the guy anchors.
2. Lay the nested tower on the ground with the top pointing in the direction of the companion tower if two are to be used for the support of a long wire antenna.
3. Spread out the guy ropes in the approximately correct directions.
4. Drive the base stake and assemble the base hinge components.
5. Connect the guys at the 10' elevation and raise the tower.

6. While one individual holds the tower vertical, have a second person stretch the guys and drive the three anchors at the correct locations. Tie the two front sets of guys to the anchors.
7. Drop the tower and extend to 20' length. Attach guy ropes at the 20' height.
8. Raise the tower and secure the two front guys to the anchors and again lower the tower.
9. Extend the tower to 30' and place on a step ladder. Connect guys to the floating guy ring. Install the gin pole in socket at base of tower. Tie the 3 back guy ropes to the eye bolt at the end of the gin pole.
10. Use the gin pole as a lever and have one person pull tower up to vertical position. Also have a second person "walk" tower up from the extended end of the tower. Attach two front guys to anchors. Lower tower with one person walking tower down and second man using gin pole as a lever. Lower tower onto step ladder.
11. Attach rotator and antenna to tower. Tape rotator wire and coax to tower every 5 feet. Leave sufficient loop at rotator so coax will not tighten when antenna is rotated. Install cotter pins in tower at 10'

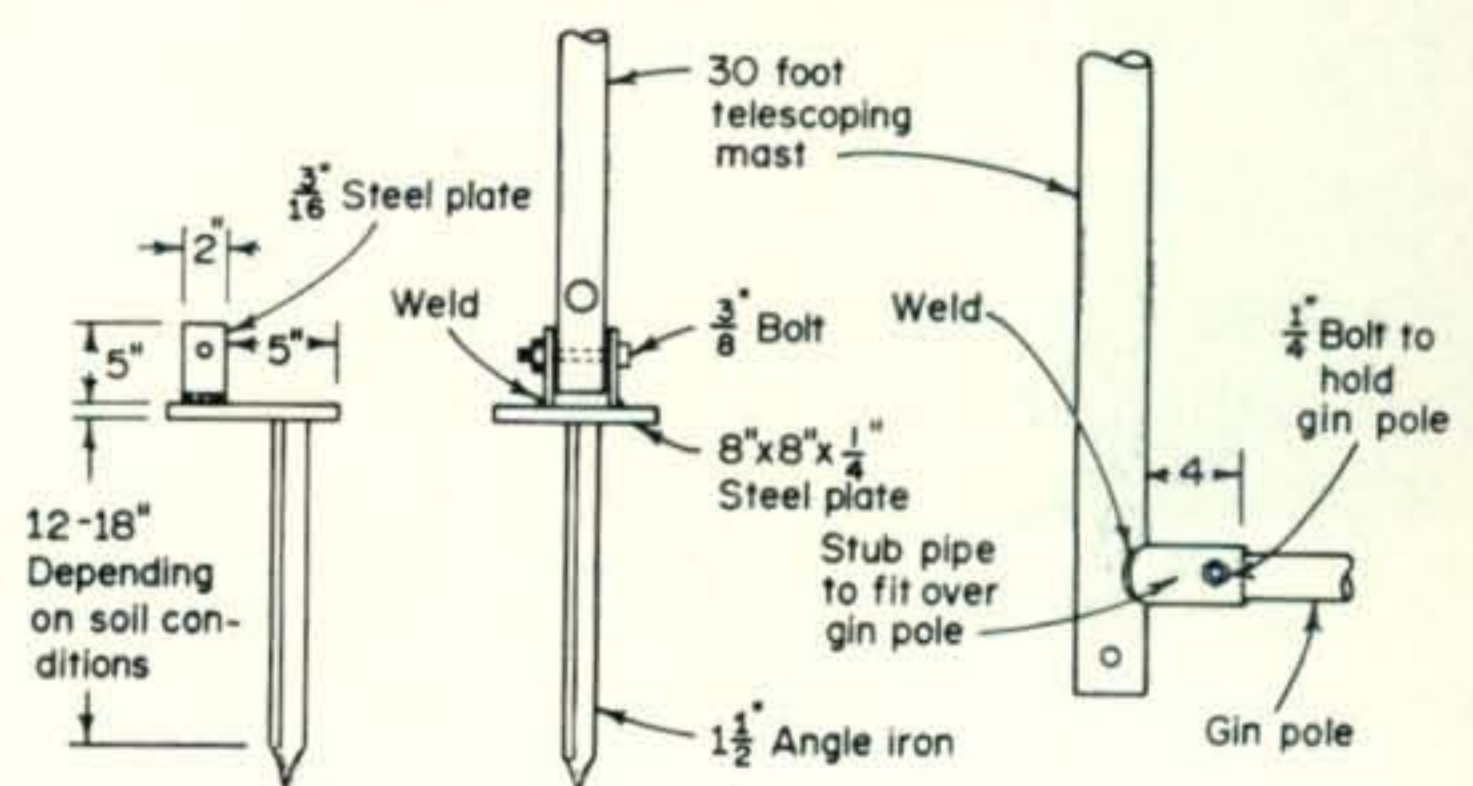


Fig. 1—Details of the construction of the base plate assemblies for the telescoping antenna masts.

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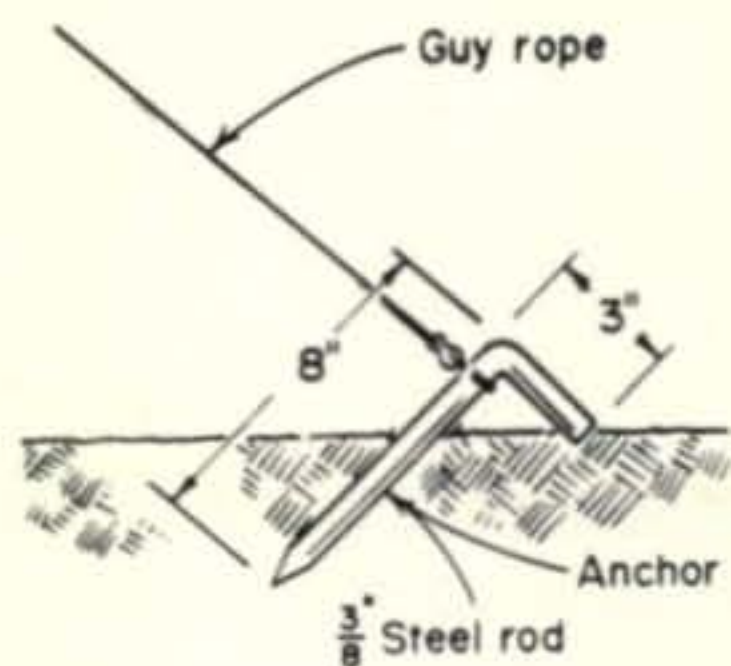


Fig. 2—Guy rope anchors are made from 3/8" mild steel rod sharpened slightly at one end.

and 20' levels. If a long wire is to be installed between the two towers, attach pulley to top of tower. Be sure pulley is on correct side of tower. Thread a pull rope through pulley. Tie two ends of pull rope together so rope cannot pull out of pulley.

12. Check all hardware for tightness, and antenna for proper orientation when tower is in upright position. Raise tower as previously. Tower cannot get away if the task is performed quickly since the three sets of front guys are anchored. When tower is vertical, have one person stand on gin pole while the assistant unties back guys one at a time and transfers them to the back guy anchors. Plumb tower.

If done properly, the completed installation should look like fig. 3. The most convenient source of materials is a push up tower 10' longer than the desired raised height. The 10' top section is removed and used as the gin pole. This extra member can be conveniently stored inside the tower. The tower that remains is considerably stronger than originally as the weakest length has been removed from service.

Several procedures are required to keep the tower up during the day and night. Check and recheck the rope guy's tensions during the day and night. Rain and/or heavy dew

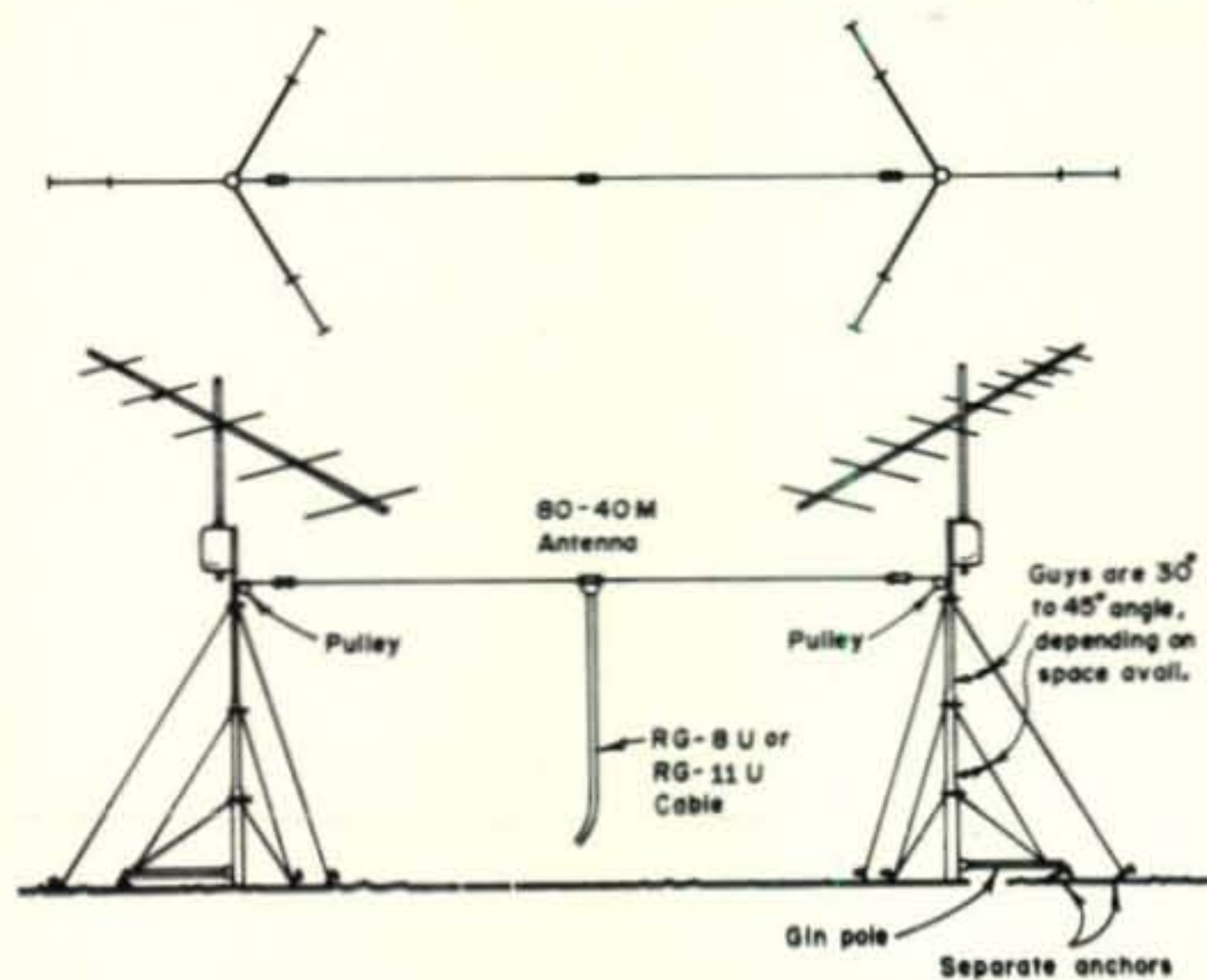


Fig. 3—Top and side views of the Field Day antenna installation described in the text.

can raise havoc with rope tensions. Wide excursions of temperature can also cause guys to slacken. If the ropes are allowed to get too tight, they might pull the ground anchors out allowing the tower to fall. Also, it is good practice to tie white strips of cloth on the guys at 3', 6', and 8' levels to signal their location during the nightly sojourns to refuel the generator, etc. A 50 watt light bulb at the 20' elevation of each tower will provide a surprising amount of illumination throughout the camp area and it also stabilizes the generator output by providing a minimum electrical load. Dimming of the remaining lights due to s.s.b. and c.w. operation of the transmitters is thereby minimized.

Taking the towers down can be as hazardous as their erection. With the system described above, the task is safe and simple. The procedure is as follows:

1. Turn off all power and shut down the generators.
2. Disconnect all coax and leads to the radio equipment.
3. Lower the long wire and coil it up thereby removing a tripping hazard.
4. Have one man hold the gin pole down while a helper unties the ropes from the back anchors. As each rope is untied, it is transferred to the eye bolt connected to the extended end of the gin pole.
5. Have one person walk the tower down while a second person guides the gin pole up in the air. It is good business at this point to have extra people, one at each guy anchor to guide the downward progress of the tower. Towers can "get away" from the people lowering them due to sudden wind gusts during this operation.

[Continued on page 85]

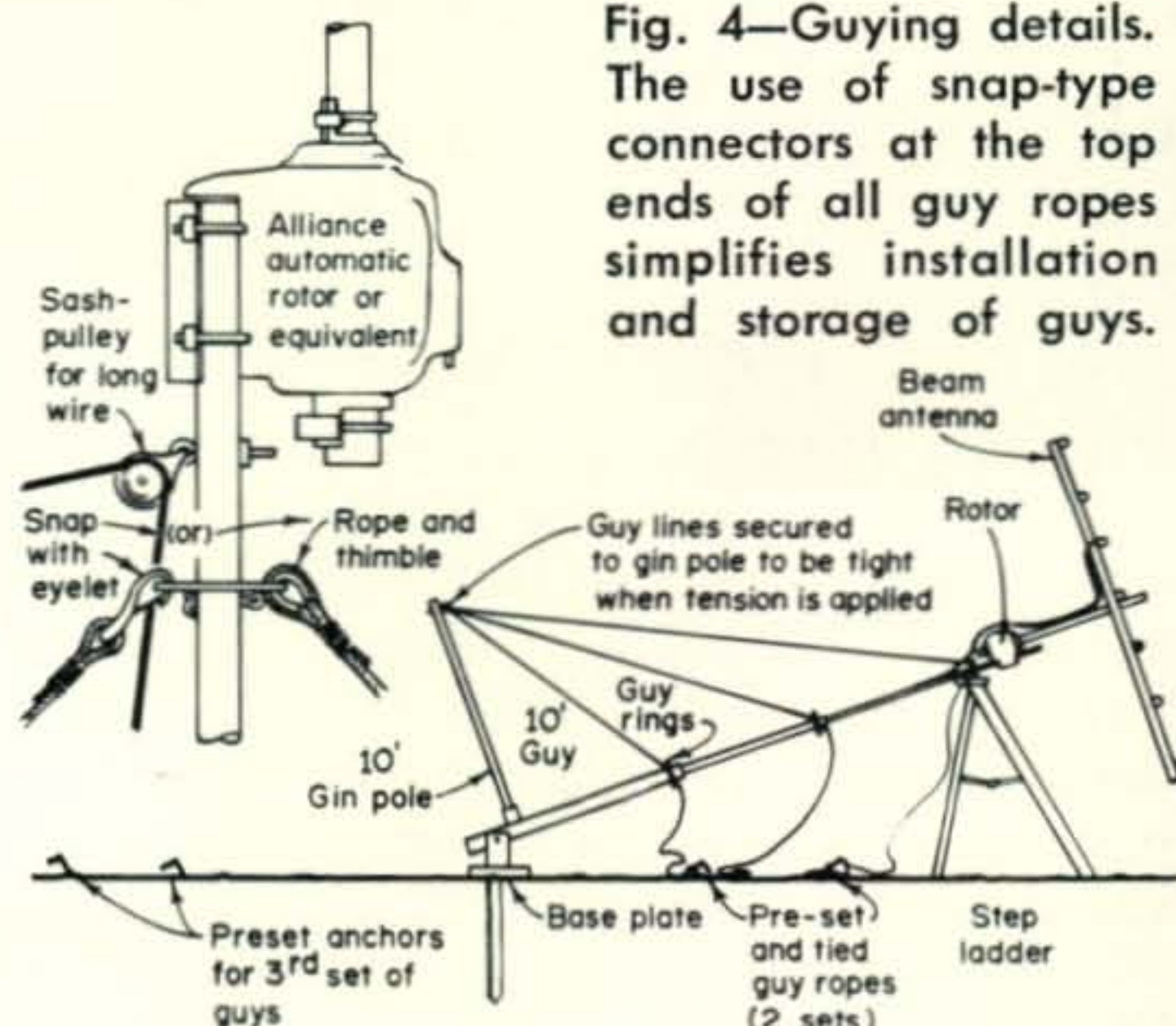


Fig. 4—Guying details. The use of snap-type connectors at the top ends of all guy ropes simplifies installation and storage of guys.



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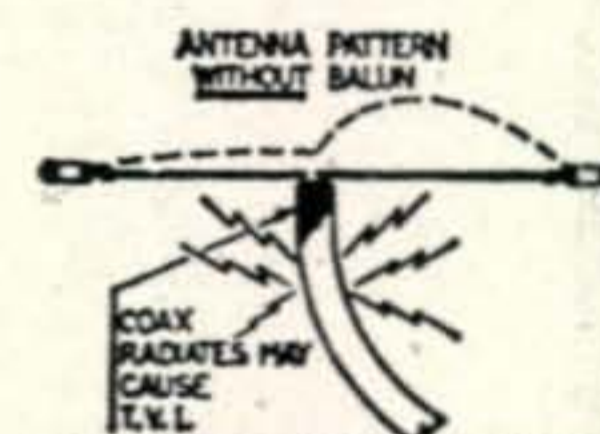
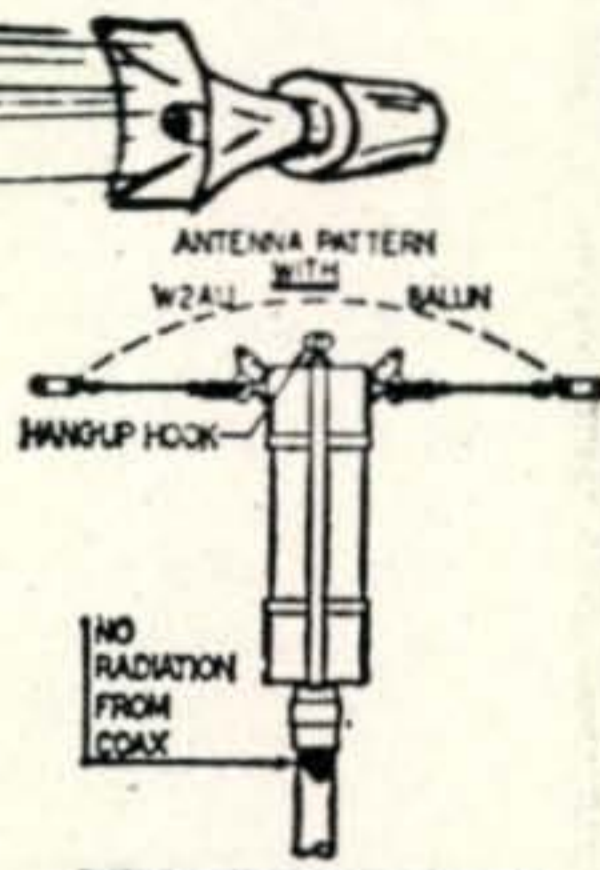
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oscillator,  $V_{2B}$ . You might have a bad crystal here. If you have a receiver that tunes to 9 MHz, you can easily check this oscillator.

We have not heard of any such inherent difficulty with the HT-37's, but if any of our readers have run into such, we'd appreciate hearing about it. Thanks.

### DX [from page 60]

Other QSL addresses for this month's listing are:

**C31AP**—Via F2MO.

**ET3USA**—To W4NJJ, 1416 Rutland Drive, Virginia Beach, Va. 23454.

**FL8HM**—NOT via W9FN (He couldn't get logs.)

**HI3XAM**—c/o WA2NDP, P.O. Box 294, West Islip, N.Y. 11795.

**JA3LUK**—Via WA9TSG, 114 East Brown N, Milwaukee, Wi. 53212.

**TG9NJ**—c/o K4UQC.

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**VP2LAT**—c/o WA9UCE, 529 Buckingham Palace, Libertyville, Il. 60048.

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**3A0AM**—c/o W4NJJ.

**7Q7AM**—Via WA2NDP.

**8R1AE**—To WA2NDP.

**9G1DY**—c/o WA2GZC, 573-75th. St., Niagara Falls, N.Y. 14304.

**9Q5LW**—Via WA2GZC.

73, John, K4IIF

### Field Day Antennas [from page 51]

6. When the tower has been lowered and is resting on the step ladder, all guy ropes are unclipped from the floating guy rings and coiled up according to color code. Each group of ropes is then wrapped for storage.

### Shortcuts

There are many short cuts that make this operation a pleasure. If each rope is painted a distinctive color on each end, the storage and reassembly next year is simplified. Also, if metal snaps have been applied to the upper end of the ropes, connection to the floating guy rings will be simplified and strains on the tower will be minimized. A 20 mm ammunition case is ideal for storing all components of this system. Coax and rotor cables along with the rotator control boxes will fit nicely inside the ammo boxes. Miscellaneous tools that are necessary for this operation, *i.e.*, sledge hammers, screw drivers, tape, soldering irons, solder, etc. can be stored along with



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the previously mentioned items to assure the next group that uses the tower that all necessary items will be available.

Last but by no means least, the cotter keys should be wired to the guy rings. If not done, the next year the keys will be lost and the tower sections will rotate freely in the wind and rotator synchronization will be lost. If the keys are painted a bright yellow, finding them in the tall grass will be eased. If the concepts identified above are incorporated in your antenna system, many happy days of operation will result and fears of falling towers will be a thing of the past. ■

### Letters [from page 5]

his or her license for twenty five years (the grandfather clause).

This is the same as automatically advancing all persons who have held a restricted radiotelephone through second class radio telephone or telegraph a first class radio telephone or telegraph license for the same reasoning.

Another analogy might be to automatically grant the holder of a private pilot license a commercial pilot license after 25 years.

I submit that if a person involved in amateur radio for twenty five years has not gained whatever expertise necessary to earn the Extra class license on his or her own merit, he or she really didn't want, much less deserve it.

Some people study hard on both theory and code, then take time off work to drive three to four hundred miles to just get to take the examinations, losing two or three days wages and incurring the costs of transportation, meals, lodging, etc.

I hope someday to be the holder of an Extra class license, perhaps simply because it is there, but I would much prefer to say "I earned it" than, I couldn't make it by examination but received it through twenty five years of waiting.

If we are going to step down to this we might as well grant the holders of a CB license for twenty five years or more an amateur General class license.

Being cognizant of the fact that I am certainly not a professional telegrapher nor a know-it-all in the electronics field I would much prefer to work for what is achieved than take a handout.

There are probably many other amateurs out there who feel the same as I do about this. I hope there are and that they will be concerned enough to let those who are in a position to do something about it know their feelings.

John Timm, WBØDRV  
Durango, CO

### Antenna Basics

Editor, CQ:

Congratulations on the superb article, "Antenna Basics," in the March issue! It should be compulsory reading for every radio amateur.

Carl C. Drumeller, W5JJ  
Oklahoma City, OK