

A Simple Car Mounted Telemetry-Antenna System.

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This system is designed to work with folding Yagi antennas to facilitate radio tracking from moving vehicles. It can be used by passengers or the driver if done with care.

Materials:

- 1 - telescoping painters pole from a hardware store (7 ft extended works well)
- 1 – 3-4 inch “L” bracket (see figure 1).
- 2 – 1.5 inch #10 stove bolts (Philips head bolt)
- 3 – #10 washers
- 2 – #10 nylon locking nuts
- 1 – 1/4 bolt – 1.25 inches long
- 1 – 1/4 bolt – 0.75 inches long (can cut a longer one down later if needed)
- 2 – 1/4 nylon locking nuts
- 1 – 1/4 wing nut (plus extras – you will lose a few!) – you can buy a fancy plastic wing nut if desired (see figure 1).
- 1 – long antenna cable (9-15 ft)

Tools:

- Drill with drill bits
- Wrenches and/or socket set
- Philips head screwdriver (or bit for drill)
- Hacksaw



Figure 1 – mounting bracket on top of painter's pole

Construction:

1. Attach the two 1/4 bolts and nuts to the upper part of the “L” bracket as seen in figure 1. If the shorter bolt extends much beyond the nut the extra can be trimmed with the hacksaw.
2. Hold the “L” bracket against the end of the painters pole (see position in figure 1) and mark the holes to be drilled. Drill hole with correct size drill bit.
3. Attach the “L” bracket using the #10 bolts and nuts. Use washers to pack out the upper bolt as needed.
4. Find the approximate center of the Yagi antenna. Make sure that the location will not interfere with the function of the antenna when mounted on pole (i.e. folding etc.).
5. Drill a 1/4 inch hole in the center of the Yagi antenna.

Note: If you are not using a folding Yagi antenna your antenna may not have a channel for the nuts to fit into – it may be necessary to have both bolts long enough to go through holes in the antenna to prevent the antenna spinning on the top of the mounting “L” bracket.

Field Assembly:

Place the long bolt through the hole in the Yagi antenna such that the two nuts fit inside the channel of the antenna (channel side down). This will prevent the antenna from spinning on the top of the pole. Use the longer antenna cable to connect to the receiver. Keep receiver in safe location and guard against strong vibrations or bumps (i.e. don't rest receiver on bed of truck – hang around neck or place on cushion)



Figure 2 – a 5 element Yagi mounted on a painter's pole used in the bed of a pickup truck



Figure 3 – a 5 element Yagi mounted on a painter's pole use through the window of a car

Using The In The Field:

There are two basic ways to use this system. First, have a second person ride in the back of the truck and rotate the antenna back and forth scanning for a signal (figure 2). Care must be taken to communicate any upcoming low-hanging branches to the operator in the back.

The second method can be done by placing the pole through an open window by the driver or passenger of the vehicle (figure 3). The base of the pole rests on the floor and the pole extends up and out the open window. With a little practice the operator can hold the base of the pole in place with their foot while using their free hand to rotate the pole to scan side to side. Care must be taken to avoid low hanging branches. Care must also be taken as the pole can cause scratches or scrape marks on the interior of the vehicle door depending on make/model and specific set-up.