

Temporary Mobile Installations

Techniques for installing and removing your mobile unit quickly, with a minimal footprint, and with no holes in your vehicle's dash.

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There are a number of situations that favor a temporary rather than a permanent mobile installation. The target vehicle might be a spouse's "nicer" car protected under a no-drilling covenant. Or, you might not own the car, which would be the case if you were renting or leasing, or if you were assigned a municipal vehicle during an emergency.

In planning a temporary mobile installation we need to consider the location of the main body of the unit, the antenna, mounting the control head, and sourcing power to the radio.

Location — The Trunk vs Under the Seat

Placing the main unit under the front seat relieves us of having to gut the backseat area to route wires from the trunk to the front seat. Also, a radio in the trunk is subject to damage by shifting cargo unless it is mounted out of the way with a special bracket. Removing the radio from under the front seat is also much easier than from the trunk, especially when the trunk is fully packed for a vacation.

Antenna

I have a dual band roof-mount antenna that is fed by 9 feet of RG-174 coax. The 0.1 inch diameter of the coax is easily tucked into door trim to reduce the chances of passenger entanglement. The end of the feed line has a BNC connector and I use a BNC to PL-259 adapter to connect the antenna to my Yaesu FT-7900R mobile transceiver.

New rare-earth magnets have dramatically reduced the size of the old, clunky "mag-mounts." The magnets are incredibly strong and although small, they hold the antenna firmly to the car's roof, even at highway speeds. The small base makes the antenna just that much easier to store when temporary removal is required.

Mounting the Control Head

Without the freedom to drill holes at will, mounting the control head becomes some-



Figure 1 — The transceiver's control head is hung from the front of the drawer that contains cup holders and an ash tray.



Figure 2 — Rear view of wooden mounting block for the transceiver's control head. The cup hooks for hanging the block are covered with heat-shrink tubing and the three stick-on felt pads dampen vibration as well as protect the finish of the drawer front where the block is hung. The microphone hook is shop-fashioned from a metal mending plate.

thing of a creative challenge. In my case, I was fortunate that my car had a pull-out section for the ash tray, lighter, and cup holders. The front panel for this pull-out section turned out to be the ideal place to hang the wooden block to which the control head is mounted (see Figure 1).

I used a 1" x 2" piece of pine about 5 inches long and painted it black to match the control head. The hangers are fashioned from large cup hooks that are covered with heat shrink tubing to protect the finish of the pull-out panel (see Figure 2). Three self-stick felt pads on the back of the block

serve to dampen any rattling and protect the panel's finish. I attached a small external speaker to the bottom of the block and fabricated a microphone hook from a metal mending plate (left of Figure 2) bought at the hardware store.

Other dashboard configurations will undoubtedly present different design opportunities. However, I would caution you against hanging too much weight from thin plastic vent grills. Also, take care not to impede the operation of the front panel controls, which could lead to distraction while driving. Lastly, be aware that anything suspended over or near an air bag could become a deadly missile in a crash.

Power Sourcing

Most, if not all, later model cars and trucks have one or more auxiliary power ports. According to my mechanic, they are typically rated for and fused at 20 A. The ports accept the standard cigarette lighter form plug. It's a good idea to consult your owner's manual to make sure the socket you plan to use can supply the necessary current. My automobile has only a single auxiliary power port located beneath the dash, so I built a custom power splitter to power both my transceiver and other accessories.

My power splitter comprises a cigarette lighter format plug that feeds a pair of Anderson Powerpole connectors and two cigarette lighter format sockets (see Figure 3). The Powerpole connectors supply the main power to the transceiver and one of the cigarette lighter sockets is used for a GPS navigation device. The other socket is a spare. Wiring through the Powerpoles to the transceiver is #12 AWG stranded and the wiring to the two accessory cigarette lighter sockets is #16 AWG stranded.

Conclusion

If you do not want to drill into your new car, or you cannot drill into a vehicle for various reasons, this method of transceiver installation may be for you. A temporary installation during a disaster is possible with this method, even if you are assigned to a municipal response vehicle. The Anderson Powerpole connection between the radio and the power splitter keeps the radio ARES-compatible. The cigarette lighter type plug on the splitter allows you to power the radio from various power sources such as a "jump start" power pack.

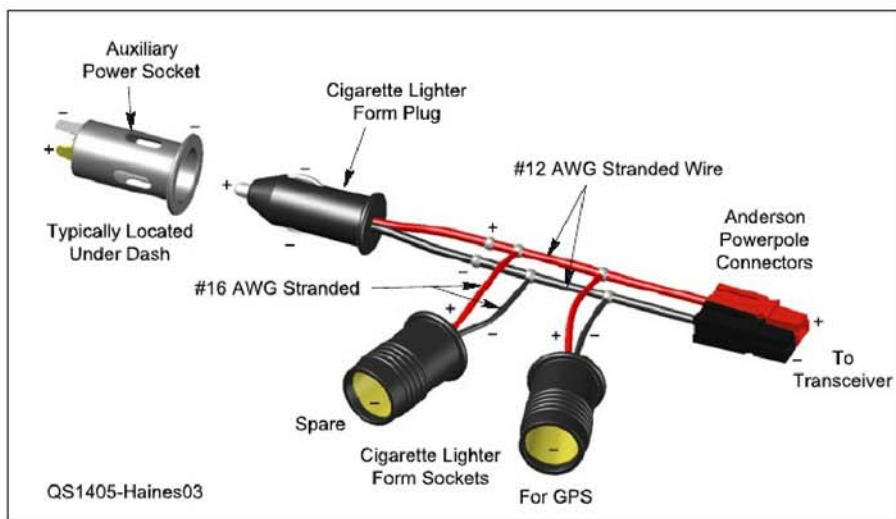


Figure 3 — The custom power splitter has Anderson Powerpole connectors to supply heavy current to the transceiver and a pair of cigarette lighters form sockets for lighter-duty accessories.

In regards to my own installation, I can remove my entire setup from the car in less than 5 minutes and reinstall it in less than 10. Installation takes a bit longer due to tucking coax and power wires out of sight. What started out to be a temporary installation has now become semi-permanent. Even though there were no holes drilled in the car, the hanging control head has proved to be steady and reliable for over 2000 miles of driving.

Photos by the author.

ARRL member and Amateur Extra class license holder Geoff Haines, N1GY, was first licensed in 1992 as N1LGI. Geoff is now retired after a career in intensive respiratory care and currently holds several ARRL appointments in the West Central Florida Section, including Assistant Section Manager, Technical Coordinator and Net Manager among others. He is a past president of the Manatee Amateur Radio Club and a member of several ham radio clubs both in Florida and Connecticut where he is active in Amateur Radio Emergency Services (ARES), SKYWARN and other club activities. In his spare time, Geoff likes to research, design, and build Amateur Radio projects, many of which have been featured in past QST articles. You can keep up with Geoff and his many Amateur Radio pursuits by visiting his website, www.n1gy.com. He can be reached at 904 52nd Avenue Blvd W, Bradenton, FL 34207 or n1gy@arrl.net.

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