

# Hammin' It Up



## CAPTN News

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### Feeding A Line

Well, it's been a while since I sent out a newsletter and the guilt has been simply overpowering. There always seems to be something that gets in the way of passing along these little hints and kinks to you folks. As one acquaintance of mine says "Sometimes life gets in the way of living." Anyway, I'll make another stab at it this month by "feeding you a line". Well, I don't exactly mean THAT. What I do mean is that I'll be giving you an example of how to feed a line; a feed line that is.

Over the years I've used a few different systems for getting the RF to and from my radios to the antennas over a "feed line" or sometimes called a transmission line. No matter what kind of feed line you use you have to consider how you will make the transition from the interior spaces of our radio operating area to the outside elements. The number of ways can be numerous from something as simple as opening up the window (if there is one) a slight bit and casting the cable outside (a tacky approach at best for any long term operations) to sophisticated bulkhead and cable switching arrangements. What I'll pass along here are a couple methods, all basically the same, that I've used.

I've always used coax cable even though in some applications ladder line has much less attenuation. Coax is just more convenient in my view. One of the first arrangements I used years ago as I was finishing the basement on my first home was to lay a duct of 4 inch PVC pipe in between the ceiling joists from the radio area to the back wall of the house. I then penetrated the exterior wall of the house bringing the pipe to the outside surface area and capped it with a typical PVC end cap. This I had

modified by installing a five SO-239 connectors (like the one on the back of a radio). To these would be attached the coax from the actual antennas and I had a couple spare connectors for growth. In the radio area I put a right angle bend on the pipe and then brought it down to the ceiling level where a similar cap was installed. That end was also made with 5 SO-239 connectors. This end of the duct was where I connected the cables from my radio equipment. Inside the pipe I, of course, ran my cables and could add any others I needed at any time just by pulling new cable with a string that I had also put inside the pipe. Simple enough and being enclosed above the finished ceiling all was out of view. At the radio area end I had built floor to ceiling cabinet spaces and a fold away desk so everything was nice and neat there too.

After moving to the Sunny South I put in a slightly different arrangement but because there wasn't much room between the radio area wall and the exterior wall of the house I didn't use the PVC pipe. This time I made a couple aluminum plates for bulkheads, installed SO-239 connectors and ran cables in between. One bulkhead plate was mounted on the outside of the house and the other I mounted at the mop board in my radio area. Well, a number of years intervened and I decided to upgrade the installation. What I'll show you in words and pictures is my latest approach.

It's really the same thing; two plates. This time I haven't used SO-239 connectors. Instead I used barrel connectors through the bulkhead plates and made up cables with PL259 ends (standard stuff) to run between the interior and exterior bulkhead. All my radios are terminated in a manual switch arrangement for both HF and combined

VHF/UHF. From this panel I bring each cable to the bulkhead at the mop board.

I used heavy gauge (1/8 Inch) aluminum that I had laying around for fabricating the 2 bulkheads and after some initial layout work I cut each panel out, filed the edges to clean them up and drilled pilot holes with a 1/8" drill bit. I then enlarged the holes for the barrel connectors to 5/8" diameter using a step drill and then chamfered the edges



to remove any burrs.

In the picture above, the bulkheads are being prepared. On the left is the one for the mop board location in the shack while the one on the right is for the exterior wall. Also seen is the step drill. Three holes at the bottom of the mop board (the left edge of the left plate) bulkhead and around the perimeter of the external bulkhead (the one on the right) are for mounting screws.

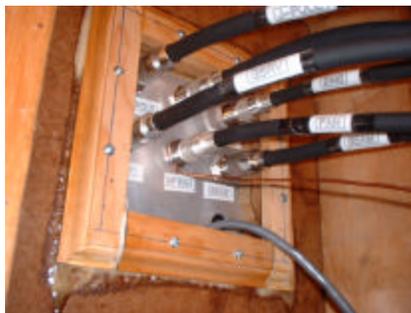
After the holes are all drilled and cleaned up the barrel connectors are installed. For the exterior wall unit I used fully threaded 2 inch barrels. For the mop board unit, because it was penetrating an interior wall and going through the void where insulation is normally located, I used 4 inch barrels. On the following page is a shot of the interior mop board bulkhead with labels in place. Each of the holes seen can accommodate a threaded barrel connector or be adapted to another connector like a feed through for the antenna rotator cable. The labels iden-



tify which antenna is connected outside. During thunderstorms I always disconnect all radio equipment from the antennas. Corresponding labeling on the cables from my radio switch panel make it easy to match up and reconnect everything in my radio area quickly.

I carried the same labeling practice to the bulkhead going to the outside environs. Since all cables are bundled with zip ties and won't be touched very much at all after installation I want to

be able to identify each feed easily if maintenance is needed in the future.



I made and placed a trim frame around the hole in the penetrated sheathing to reinforce it and to provide an added perimeter anchor for the screws that mount the bulkhead to the exterior siding. Isn't Gorilla Glue great stuff!

The next photo shows the exterior bulkhead in place for installation. All positions are labeled including the 2 spares at the bottom. Likewise, the mop board bulkhead in the shack is labeled



to save a little time and grief should quick changes be needed in the future.

Well, this project's story isn't finished quite yet. In the next issue we'll cover the grounding issues, finalization of the install and cleanup.

The intent here has been to present a little food for thought as to how you can do a bit of practical engineering for your own installation. Getting the antenna signals to your radio is essential for your communications success. Until next time, 73

## Net Reminder

Our VHF repeater net meets every Tuesday evening at 8:00 PM on the K4UFO repeater: **146.700 MHz, - 600 KHz Offset, PL 123.0**

**Where have you been? Join us this Tuesday!**

## Where ARE WE?

In 2005 we had in the Hickory Flat Ward only 3 amateur radio operators. At a Stake level we had around 19. We now have 45 in the Stake. We've added 26 through classes and individual efforts. Even with the dramatic increase we still need to go much further in raising the level of competence, preparedness and activity of those operators. To move toward that goal I'm distributing to all those that I've had anything to do with a questionnaire to try and determine your interests and level of preparedness. We'll use the information gleaned from that to plan future workshops. Please take time to complete the questionnaire and get it to me. Let's do some exploring!

## "CAN YOU HEAR ME NOW?"

We're in the communications game. We just happen to use ham radio as one vehicle. If you can't hear a message clearly then it could lead to critical information being lost or instructions being misunderstood. Often I find the audio from a lot of transceivers is just a bit tinny to me. That and a slight hearing loss from gunfire and I've become a bit picky about what hits my eardrums. Here's a simple inexpensive solution to getting better audio out of your radio. I keep an eye out in thrift stores for the smaller speakers from sound systems. These are usually at bargain prices. I've picked up and used several that give great audio when hooked up to the external speaker jack on my radios and I've never paid more



than \$3.00 per unit either. Even a cheap speaker from HRO will cost around \$13.00 and it won't sound nearly as good. What would you do? In my portable station in a box (more about this another time) I have a bank of them in use and I have several more that I use in my home shack all with excellent results. The picture above shows what I call the "Support Shelf" for my "Go Box" with the speakers installed along with some power equipment.