

73 Review

by David Cassidy N1GPH

The Outbacker All-Band HF Mobile Antenna

Results of a 12-month road test.

Outbacker Antenna Sales
330 Cedar Glen Circle
Chattanooga TN 37412
Price Class: 6 ft., \$259; 4 ft., \$219;
6 ft., 2-piece, \$289.
Tel. (615) 899-3390.

A little over a year ago, a new mobile antenna became available to the ham radio market. Called the Outbacker in honor of its Australian origins, this rugged yet attractive antenna soon began to show up on the bands and to receive some nice reviews in amateur radio publications.

For the last 12 months, I have been testing the standard one-piece, 6-foot, 8-band Outbacker. It has gone through a New England winter, has been installed on three different automobiles, and has been used as a base antenna at two different locations.

A Little History

The Outbacker antenna, as its name suggests, is a product of the Australian Outback. Terlin Aerials of Australia has produced this antenna for 15 years, serving customers who need a no-nonsense mobile antenna that can survive the extreme conditions of the harsh Australian Outback. The Outback is a vast area of the Australian continent where ranches are measured in hundreds of miles. There is no telephone service to most of this area, so those who live and work there rely on HF and VHF radio for just about all of their communications. When the nearest medical facility is hours away by air, even a compound fracture can turn into a life-threatening emergency. To people of the Outback, the performance of their radio gear is literally a life-and-death matter.

The man who brought the Outbacker to the U.S. market is Don Arnold WD4FSY. Don is a professional photographer who travels the world. When his profession brought him to the Outback of northern Australia, he noticed that every Jeep, Land Rover and truck had the same thing—an epoxy resin coated multiband antenna. Being a ham, he checked into this unusual looking aerial. What he discovered is that Terlin Aerials manufactures these HF antennas in a variety of

multi-band configurations—for business, marine. Don received a ham band version of the Outbacker, and was so impressed that he arranged to have a few more sent as prototypes. Thus was born Outbacker Antenna Sales of Chattanooga, Tennessee.

The first time I met Don face-to-face was at the Southwestern Convention in San Diego. Since then I've seen him at every major hamfest, usually with the same set-up. He gets a booth by the door, runs some coax to the outside, and sets up one of his Outbackers (usually hidden in a potted plant or some other form of shrubbery). Don is also fond of demonstrating the strength and durability of his product by bending the antenna almost fully back on itself, inviting passers-by to slam the antenna against the floor, or by pounding the living daylight out of the antenna with a hammer. I've seen this demonstration dozens of times now, and I've yet to see an Outbacker damaged by this rough treatment.

The Antenna

The Outbacker is a hollow fiberglass pole covered with a black epoxy resin and a final protective coating (if you're willing to wait several weeks, you can order an Outbacker direct from Outbacker Antenna Sales in almost any color you want). There's a 6-foot version, a 4-foot version, and a 2-piece 6-footer.

The main antenna is a helical copper coil. Each antenna is handmade by Terlin Aerials of Australia. After the antenna is manufactured, each is hand-tuned for accuracy and field tested for each band of operation.

The unique way the Outbacker provides all-band performance is something they call the "wander lead." The wander lead is coiled around the outside of the antenna, and one end is inserted via a banana plug into a jack near the base of the antenna. The antenna has a series of silver-coated brass jacks recessed into the fiberglass, each jack corresponding to a different band of operation. To change bands, you simply wind the wander lead around the antenna and insert the plug into the appropriate jack.

There is also a short whip at the top, which allows for fine tuning the SWR. The whip has a mark scored on the side. Setting the whip at this level gives you a good SWR from 40–10 meters. If you want to operate 75 meters or the high end of

10 meters, it's a good idea to put an SWR meter in line and reset the whip.

You can purchase a heavy duty spring mount from your Outbacker dealer. This is one of the sturdiest mobile mounts I have ever seen, and if you have the type of vehicle that can accommodate this, it would probably survive long after the vehicle crumbled to dust. For those of us who don't want to permanently alter our rubber-bumpered cars, Outbacker suggests the 4-foot Outbacker Jr. model with a Diamond K400-3/8, 24 lip mount. This grips your trunk or hatchback with only a couple of puckers on the internal side (which helps ground the mount to the car body) and holds up fine to highway speeds. Mounting the antenna at trunk or hatchback level also gets the majority of the radiating surface above the car body. This arrangement is only for the 4-foot Outbacker, and you need to put a heavy duty spring between the mount and the antenna.

The One-Year Road Test

There is a right way to install a mobile antenna and a wrong way. Not wanting to wait to test out the Outbacker, I immediately ran down to my local Radio Shack and purchased one of those bumper mounts with the little clip and chain arrangements. These used to work just dandy on older cars with metal bumpers, but I quickly found out that my old rust-bucket was equipped with those darn rubber bumpers. Undaunted, I found a place to clip the hold-down chains, braced the whole thing with a bungee chord so the 6-foot Outbacker wouldn't sway in the breeze, ran the coax to the front of the car, hooked up my HF rig and away I drove. (In case any of you are wondering, this is the wrong way to install a mobile antenna.)

My first contact was on 20 meters with a ham in Manchester, England. He was very cooperative in answering questions about my signal and reported a strong 5 x 7. Not bad for 100 watts, a stock hand mike and an antenna that, despite the bungee cord arrangement, was tilting in the breeze at about a 30 degree angle! After clearing with the chap in Great Britain, a ham in Florida called to report that he was receiving me at about the same 5 x 7.

For the next few weeks I checked into WB2JKJ's Classroom Net on 40 meters (7.238 MHz at 7 a.m. This is a great rag-chew net for

Photo A. The Outbacker.

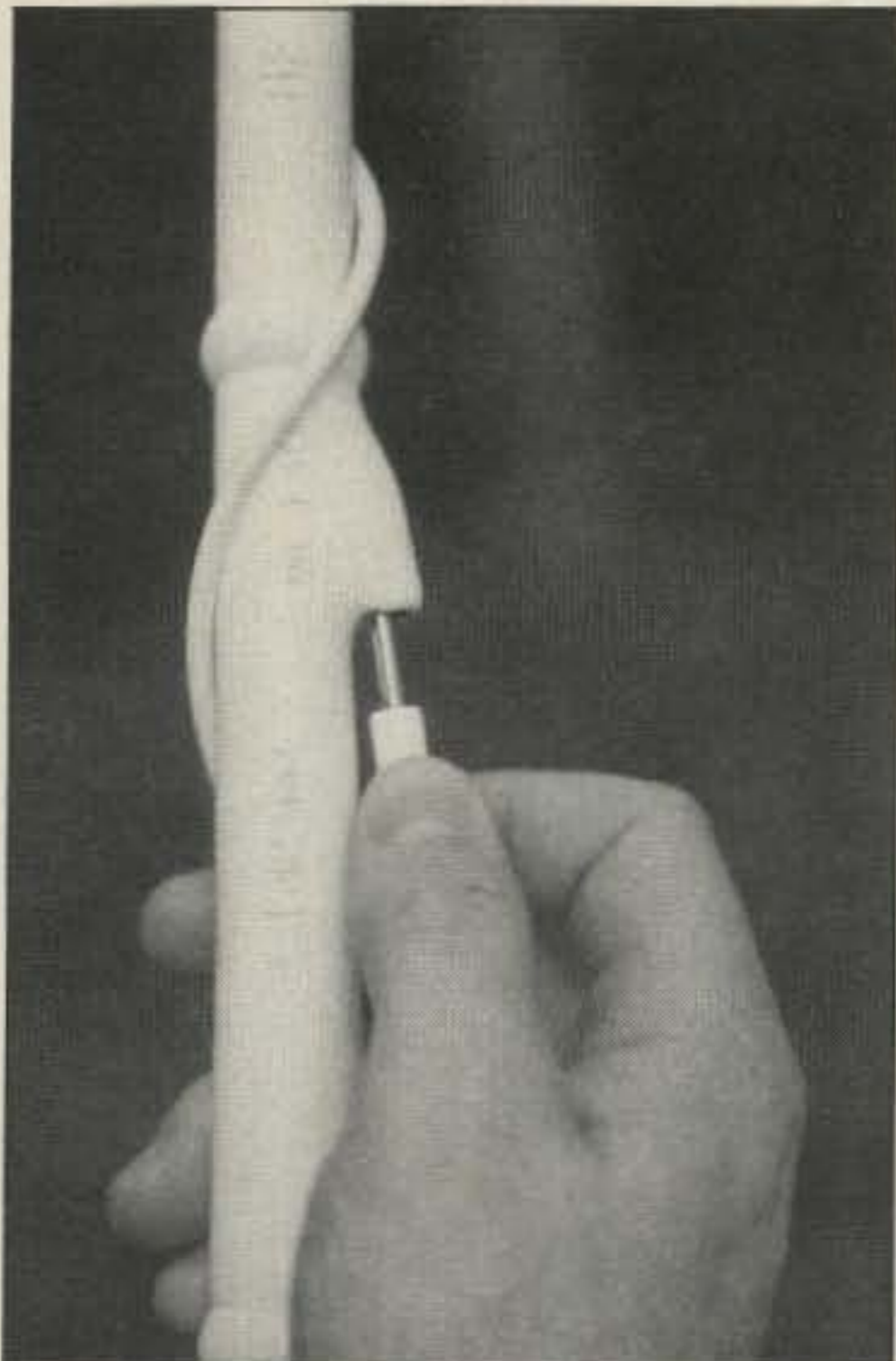


Photo B. To change bands just wrap the "wander lead" around the antenna and insert the jack into the appropriate plug.

morning commuters. It is operated by Joe Fairclough—one of the nicest guys you'll ever meet in ham radio—out of The Radio Club of Junior High School 22 in New York City.). The net was very helpful in establishing the omnidirectional performance of the antenna. Consistent reports from upstate New York, Virginia and Canada proved the Outbacker was putting out a nice signal to all points on the compass.

Since I knew my car was destined for the junk pile, I didn't bother with a more permanent mounting arrangement. For using the 6-foot Outbacker, I would suggest either side-mounting the antenna (which requires drilling into the car body) or some kind of trailer hitch arrangement. Both of these options can be done using the heavy-duty spring mount mentioned earlier.

The Outbacker as a Base Antenna

Not too long ago I was living in a one-bedroom apartment. I tried all kinds of schemes to get an HF signal out with indoor or invisible outdoor antennas. Though I now have plenty of space for outside wires, I was anxious to test the Outbacker as an apartment/condo antenna.

A quick trip to the hardware store or Radio Shack should provide you with all the ideas and materials for fabricating a window mount for the antenna (I used the bumper mount mentioned earlier, and a few clamps and L-brackets from the hardware store). Open the window, mount the antenna, run the coax, and you're on the air. From my ground floor location, I was not setting the bands on fire, but I made plenty of contacts—especially on 10 and 40 meters. Changing bands was a matter of opening the window and reaching out to change the wander lead. I figured this was a small price to pay for 80–10 meter capabilities. When I was done operating for the evening, I simply brought the antenna in.

The secret of operating with this type of arrangement is the ground connection. The anten-

na mount should be wired to the best possible ground available. Some of my QSOs reported a 3–5 dB loss of signal when I disconnected my cold water pipe ground lead. If a ground is not available (or in addition to a ground), a 1/4-wave counterpoise wire can be attached for each band of operation (using ribbon cable for this will keep things neat). Either throw the counterpoise wires out the window or run them along the wall of your shack.

An alternative for those who have first floor apartments is to park your car near your shack, leave the antenna mounted on your vehicle, and run the coax into your shack window.

Don't expect to break into any 20 meter pile-ups with this arrangement, but you'll still have plenty of signal for normal rag-chewing. I think the Outbacker is a great choice for the apartment/condo ham.

Further Road Work

When I traded in the old clunker for a new compact car, I was leery of mounting any antennas on

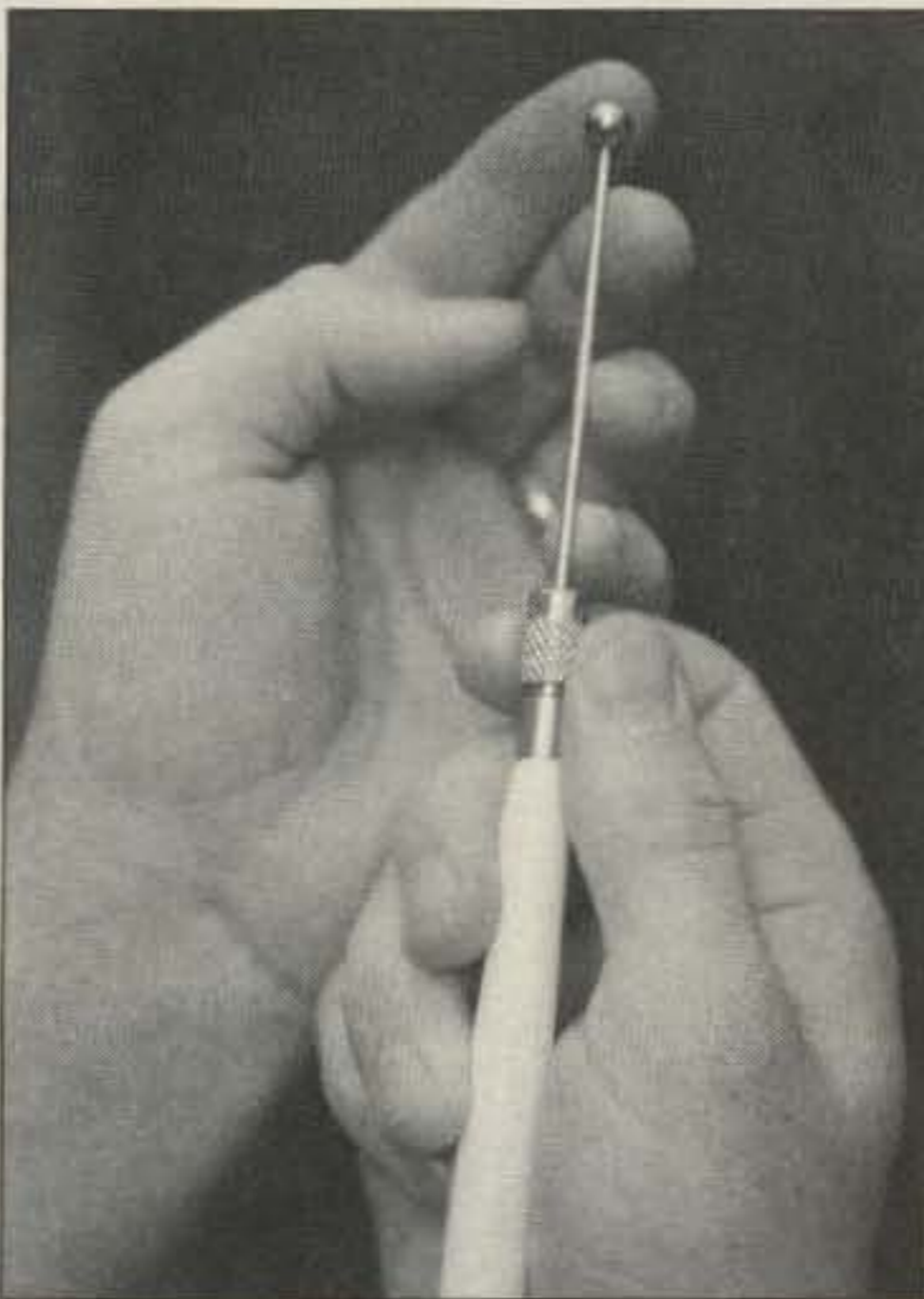


Photo C. The adjustable tip allows for fine-tuning SWR.

that nice shiny paint. When the new car went back to the dealership for service, I was provided a loaner vehicle. The desire to check in with some friends on 80 meters during a late-night/early-morning solo drive across New England provided the perfect opportunity to test the Outbacker in another configuration.

I mounted a 4-foot Outbacker Jr. to the car with a Diamond trunk mount (make sure you use a heavy duty spring and NEVER attempt this with the 6-foot Outbacker), ran the coax to the front seat, and I was on the air. Total install time: five minutes.

The performance of the 4-foot Outbacker Jr. is surprisingly close to the performance of the full-size version. I didn't have any trouble making local contacts on 40 meters, and I was able to key up the Virgin Islands 10 meter repeater with only 20 watts. That evening, I QSOed with my friends on 80 meters for over two hours. I usually received them at the same level I do from my home shack—10 dB over S-9. When I first joined the roundtable, they were shocked to discover that I

was operating mobile. Solid S-9+ signals were reported throughout my journey.

For those who travel and use rental cars a lot, an Outbacker Jr., a Diamond trunk mount and a small HF rig would be a perfect travel setup. The 6-foot Outbacker is offered in a two-piece model, but the trunk mount won't handle this antenna. If Outbacker would come out with a four foot, two-piece version, the entire set-up could fit in a carry-on bag.

Final Thoughts

To put it bluntly, I am very impressed with the Outbacker. It is easily the most attractive multi-band HF antenna available. The black epoxy can be buffed to like-new condition with auto wax, so even after a New England winter (where salt and sand coat the roads for four months), the antenna looks like it just came out of the box. If you're willing to wait, you can even order an antenna that matches your car. (Outbacker offers other special models, including HF marine. In fact, you can special order just about any combination of special frequencies.)

The Outbacker is hand-made, and the quality is evident. Plugs and jacks are silver coated brass. The wander lead is heavy enough to stand up to weather, but light enough to easily wrap around the antenna. I can't imagine how anyone could damage this antenna, even under extreme conditions. The final coating applied over the epoxy resin will sometimes peel a little around the recessed jacks, but this is barely noticeable, and in no way affects the strength or performance of the antenna.

I found the on-the-air performance of the Outbacker equal to any other mobile antenna I have used, and the wander-lead system of band switching very convenient—much easier than carrying around a trunk full of loading coils.

When you take great mobile multi-band performance and add the easy portable and apartment/condo applications, I think the Outbacker is a great choice for a variety of HF antenna uses. **73**



Photo D. The Diamond K-400 mount. Outbacker recommends this sturdy trunk/hatchback mount for the 4-foot Outbacker Jr.