

# Portable in Paradise: Cruise Ship DXing

**I**t began innocently enough: Cruise West, a US-based cruise line approached me through my professional travel writer spouse Donna, KF6ZVE, to see whether I might be interested in being the speaker on their 295-foot ship, *Spirit of Oceanus*, for an 11-day South Pacific tour. I'd present programs about the ever-changing sky and other celestial wonders—something I've done for years as an “astronomical popularist.”

This sounded pretty good, but, as a ham, the idea of perhaps taking a portable HF station and running Maritime Mobile in a fantasy DX setting added a whole new dimension to the term “fascinating.” I told Cruise West I'd love to be their entertainer. But would they mind if I also brought some radio gear? They said they didn't see why not.

## Planning for Paradise

Cruise West would fly us both to Tahiti to meet the ship for its departure from Papeete, capital city of French Polynesia. We'd sail to Bora Bora and continue on to the Cook Islands for several days, and then return via a few more French Polynesian islands, finally disembarking at Papeete for the flight back to the US. Throughout, I'd conduct my talks and presentations.

Like any project, the initial excitement stirs as you conjure the image of the end product. For me, it was relaxing on a tranquil, tropical ocean working worldwide DX. That ideal HF environment would feature easy propagation to the Pacific, the Americas, Eastern Asia and who knows where else. Better, my equipment situation seemed

well in hand, with the modular portable system I'd built earlier (see “Satellite DXing ‘To Go’” in the June 2002 issue) ready to travel. Checking the ARRL Web site's section on foreign operation revealed a straightforward licensing process at each destination, so I took a deep breath and visualized that end-product image once more.

That's when I realized I'd need some sort of compact, broadbanded HF vertical antenna, along with a sturdy mount that could be installed almost anywhere. Aboard an oceangoing ship, anything else would be unrealistic.

My first thought was my venerable, versatile all-band Spider mobile antenna but its 4-foot tubular aluminum base shaft couldn't be packed away and, in this post-9/11 security environment, it might get confiscated if I tried to make it a carry-on item.

I checked out some of the recently offered, ultra-compact “go-anywhere” HF antennas. Their ads promised that, for \$100 or \$200 (or more), they'd deliver limitless flexibility and incredible ease of use. Looking closely, though, I saw featherweight designs, exposed critical components and flimsy mounts, putting most of them out of contention immediately. If you're traveling beyond the neighborhood picnic ground, you'll likely need a setup tipping the scale at pounds, not ounces. Meanwhile, the newer subcompact vehicular HF antenna systems would still never fit inside a suitcase. My attention turned back to my Spider.

Creative juices flowed and I came up with a surprisingly simple homebrewed so-

lution. To replace my Spider's base shaft, I made a two-piece, take-down arrangement from a same-diameter length of copper water pipe. From scrap aluminum and basic hardware, I assembled a beefy, universally adjustable mounting bracket. This solved all the problems and, attachable to nearly anything with a large C-clamp, my mount worked wonderfully. Check out “The N6TST Travel Mount” sidebar for details.

The remaining gear left lots of room in the suitcase: an ICOM IC-706MKIIG, an MFJ-4245 lightweight switching power supply and a Rigblaster Nomic digital interface. The power supply would run from any line voltage and the internal features of the '706 provided all the setup capabilities I'd need. Equipment packed, I relaxed once more and allowed my mind to wander back to that open ocean and a happy ionosphere.

Following the ARRL Web site's instructions,<sup>1</sup> I made copies of my license and other documents listed as necessary to obtain operating permits when we arrived in our destination countries of French Polynesia and the Cook Islands. This meant two new temporary call signs but I'd planned for that. Because Cruise West's ship was registered in the Bahamas, I'd need yet a third license from there.<sup>2</sup> Once my application paperwork came back approved from Nassau, I was ready. I'd be N6TST/C6A, despite the fact I'd never set foot in that country.

Meanwhile, I searched the Web for in-country hams I might contact in advance

<sup>1</sup>Notes appear on page 31.

of my trip. I e-mailed Des, ZK1DD, on the island of Aitutake. He and his wife Tutai, the reigning queen of the island, operate Gina's Lodge, a ham-friendly set of rental cottages featuring in-place antennas and facilities for visiting amateurs.

Des and I corresponded several times as departure day approached and we looked forward to that eyeball QSO when the ship arrived at Aitutake. He told us he'd give us

a personal island tour and we very much looked forward to it.

### Arriving and Setting Up

The mercifully uncrowded wee-hours flight from Los Angeles to Tahiti allowed us to stretch across extra seats and sleep. Dawn's glow found us gazing down on incredibly azure waters, topped by the countless tiny vertical cumulus cells that so

totally populate tropical seas. We landed and the door opened. For me, a lifelong desert dweller, the perpetual subequatorial combination of 80° and 80% humidity hit like a hot, wet Sunday newspaper in the face.

Amid the astonishingly crowded bustle that is modern-day Papeete, I tracked down Sylvain, FO5RF/F6GGX, at the "Cellule des Postes et Télécommunications." Finding my paperwork package complete and correct, he handled everything. I walked out as FOØROE—soon to be FOØROE/MM.

Aboard the *Spirit of Oceanus*, Donna unpacked while I took the gear for a shake-down setup of my station. Earlier analysis of the ship's floor plans on Cruise West's Web site had revealed a small, open-air dining facility on the Sports Deck. When I got there, I found it well-lit and strategically located for antenna placement. It offered tables, electrical power and a sheltered location; it was perfect!

The ship's chief electrician, an ex-ham from Portugal, smiled at the simple-but-effective design of my all-angle antenna mount. Together, we scraped through the few dozen coats of paint on the ship's railing to expose a spot of shiny steel to give my C-clamp a solid RF contact. Bonded to the ship's actual hull and then the blue Pacific, the railing provided my clamped antenna perhaps the *ultimate* ground!

My homebrewed top-loaded vertical accommodates five different band-specific resonators at once, each fine-tunable by sliding a ferrite collar along its length. This allowed me to use the '706's built-in graphics display to adjust the low SWR point in each band.

This setup mode of the IC-706 is unique and precious among competing ultra-compact HF rigs. It lets you choose a piece of a band and break it into a series of selectable frequency increments, centered on the operating frequency you've dialed in. You hit START and begin pressing the PTT switch. Each time you do, the rig tunes itself to a different frequency increment, sends out a sampling signal to the antenna, and displays the SWR as a segment of a little bar-graph that builds up along the bottom of the display. You simply PTT your way across the band segment and watch where the SWR "dip" occurs. Simple, but amazing!

On my antenna, I could adjust each band's resonator to put the dip nearly anywhere. Once everything was adjusted, I was good to go. I came up on 20 meters and, in a few seconds, I met Scott, VE7QT, in British Columbia. Better, we wound up in a three-way conversation with Peter, ZL1AU mobile, camping in New Zealand!

Sweat-soaked (what I found an inescapable part of being out-of-doors here), I

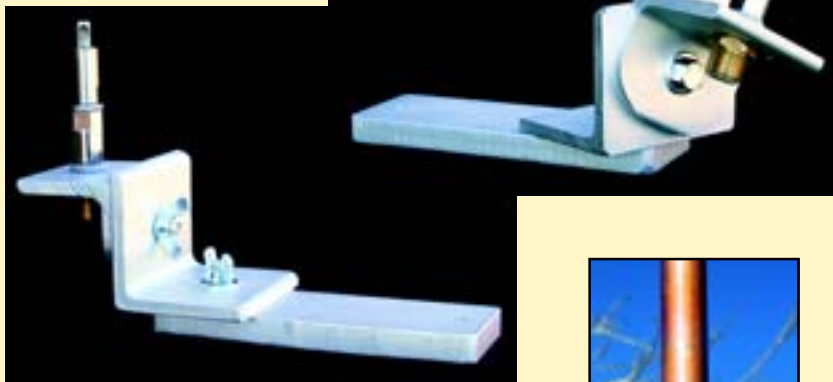
### The N6TST Travel Mount

No matter what antenna approach you contemplate, ensure your mounting scheme is versatile and sturdy. On a trip to an unfamiliar place, few of us enjoy the luxury of knowing precisely what kind of antenna installation environment we'll have so it's critical to embody flexibility in the design. Moreover, you might want to take your gear on another trip so mounts made with durable materials offer outstanding long-term payoff.

My own design borrowed from other products I'd seen but added strengths theirs didn't have. I visited scrap bins and found a slab of 3/8-inch-thick aluminum stock and a length of 2-inch aluminum angle. Simple cuts with a band-saw and a few drilled holes yielded a particularly hefty mount, adjustable to any surface angle, and held on with a large C-clamp. Even in a rolling, blowing, open-sea environment, it never slipped or faltered.

The design was so basic, there's little need for drawings or dimensions, just a couple of photos of the finished product. This worked great; give it a shot.

Two views of the author's all-angle antenna mount, held to the ship—or nearly anything—with a C-clamp.



Close-up views of the antenna and the coupling between the two halves of the base shaft.



packed up and headed to the cabin. It had been a long day. The entire station, including my antenna, easily fit into one of our wheeled suitcases so I could quickly move from cabin to shack.

The next morning we'd arrived at Bora Bora and, as we toured that famous tropical paradise, my thoughts drifted to diving into some serious DXing when we departed that evening. As the sun set, I presented my talk on enjoying the colors of the twilight sky and invited my audience to experience some radio activities afterward. Watching the dramatic shapes of that volcanic island disappear into a darkening ocean, I operated as FOØROE/MM, entertaining about 25 interested, non-ham passengers with contacts from the United States, Australia, South America and Japan. I was just getting started.

### Oceangoing DX

Reception in the South Pacific has a similar character to most places but with some minor differences. From late morning until the latter part of the afternoon, 12 meters and below is so noisy that any signals there are not discernible from the static. Ten meters is usually the only band

open, with a few stations on 12 and maybe isolated signals on 15 and 17.

About 6 PM, 15 and 17 get much better and 20 begins to open up. Late-afternoon and into early evening, 17 provides great paths into the US—even to the East Coast—and, by then, Japan and Australia become available. After sunset and into the evening, 20 opens wide, joining 15 and 17 with good contacts, while 12 and 10 begin fading slowly. Only noise fills 80 meters, but by late evening you can't miss the booming signals from a few of those south-eastern US powerhouse stations running kilowatts and big verticals.

It was early morning when we approached Rarotonga in the southern Cook Islands. Eager to get ashore to pick up my local license, I took my camera topside to shoot photos as we docked. The lens, having spent the night in our air-conditioned cabin, fogged over instantly. Hmm. I sighed, wiped away the morning's first jewels of sweat, and soon set out on foot for the half-mile trek to the Cook Islands' equivalent of the FCC. I emerged as ZK1TST.

That evening, my ZK1 CQ on 15 meters somehow found its way to the packet DX

cluster. Boom! I was Ground Zero for a pileup like I'd never experienced. I made more than eighty rapid-fire contacts before being rescued by Donna to come to dinner.

On Aitutaki, Des, ZK1DD, and his wife, Tutai, met us at the dock. He's one of the fewer than 20 hams still active in the Cooks and the only amateur operator on this remote island populated by a mere 1500 people. As we spent the day touring together, he chuckled about my account of the pileup, telling me it's a primary operating hazard when you're such a rare QSL species.

At Des and Tutai's Lodge ([pacific-resorts.com/ginaslodge](http://pacific-resorts.com/ginaslodge)), we saw his two HF beams lying on the ground, temporarily dismantled to protect them during the December-March hurricane season. Seasonal weather is a major hazard in the Cooks; Des even lashes down the roofs of his cottages. Normally, however, a visiting amateur occupying a cottage is presented with coaxes from the beams, plus a third from a G5RV strung nearby.

Des's home station features two HF beams, a full-wave 40-meter delta loop, an 80-meter dipole, a 10-meter vertical and a marine FM vertical (boat-equipped locals use this maritime band extensively). For islanders wanting to view Aitutaki's single TV station, Des also hand-produces multi-element quad antennas; we saw them everywhere. But the Near Vertical Incidence Skywave (NVIS) performance of his 40-meter delta loop in the tropics intrigued me, so we made a sked for the next night to talk as the ship sailed toward French Polynesia.

### I Get Busy

Back aboard, setting-up had now become a familiar ritual. Nevertheless, the precarious installation of my mounting bracket and antenna out over the water



Below, the arrow shows the antenna mounting location on the 295-foot-long *Spirit of Oceanus*.





The author's QSL (top) and (below) an SSTV image received from JA7EY. Note the returned thumbnail of N6TST's transmitted image in its lower left corner.

meant any fumble-fingered clumsiness would deliver an instant "game-over" catastrophe. Every operation had to be two-handed, deliberate and daydream-free. That Dacron line tied to the antenna in the photo served as more than an anti-wind guy.

As our 40-meter sked time approached, I screwed my pretuned 7 MHz resonator into the antenna. Our more than 200-mile separation was perfect for NVIS propagation and, though I heard no other signals, I shot out Des's call as the clock struck. There he was at S9! We must have rag-chewed about 30 minutes before signing.

Moving into French Polynesian waters, I switched back to my FOOROE call and really got busy. I cranked up the laptop and plugged in my Rigblaster Nomic. PSK31 signals filled the bandwidth at 14.070 MHz, delivering contacts across the US and even as far northeast as Nova Scotia. Between that, RTTY, and a little SSTV, it was nearly midnight by the time I packed up and trudged back to the cabin.

Docked at Raiatea the following afternoon, I got an early start, first working into Michigan and Pennsylvania on 17 meters and then moving to 12 as we departed. Pulling out beneath yet another unbelievable sunset, I got a call from an Ohio station asking if I wouldn't mind him posting my call and frequency on the packet DX cluster. I considered my earlier pileup experience but figured there'd still be quite a few operators who could use an FOØ contact. I said okay, and within two minutes my world exploded all over again.

This pileup was far more frenzied than the first. The perhaps 20 cool-drink-sipping passengers sitting around me witnessed their headset-wearing lecturer suddenly and convincingly approximate insanity as he seemed to go wild, writing, talking, and flailing around. On the radio, I stopped everyone, taking calls region by region while systematically working in the VEs, JAs, VKs and ZLs who waited patiently. By dinnertime, I'd handled nearly 100 contacts and, sweat-soaked again, shut down for the day.

At my evening lecture, the question-and-answer session quickly shifted from astronomy to radio as everyone seemed interested in what had happened to result in my frantic activity earlier. I started explaining pile-ups but ended up giving a quick talk on how the ionosphere delivered signals from all over the world. We moved our nightly star-watching session to the Sports Deck, listening now to DX as people enjoyed the incredible view of the Southern Cross and countless stars only the delicious darkness of an open ocean can deliver.

Using the laptop, I demonstrated SSTV, transmitting some of the digital pictures I'd shot to stations in the US and Japan. A couple of passengers, fascinated that such colorful images could be sent like this, produced blank floppy disks (from where?) and asked for copies. From then on, I was never alone while running my gear on the Sports Deck.

Before I knew it, we'd docked back in Papeete and the odyssey had ended. As people left, they thanked me, not only for their astronomical adventure, but also for introducing them to the radio world. During the trip, several passengers brought me their portable short-wave receivers "that had never worked" and walked away amazed, listening to the HF broadcast stations I'd punched up for them. On a cruise, a little regional short-wave schedule homework can make instant friends for a traveling ham—not to mention providing a direct pipeline to the latest world news.

### Not for Everyone

All considered, my actual operating turned out to be the easiest part! It was the logistics and paperwork that accounted for well more than 90% of the total effort.

Is running a station aboard a cruise ship for every ham? I doubt it. For one thing, shipboard contacts do not count toward DXCC. On the other hand, this unique setting can become an unexpected spotlight, demanding a combination of personality, politics and persistence that makes that aforementioned 90% of the effort even more challenging. But if you're the kind of person who enjoys diving into new and unusual adventures, you might find it more



N6TST setting up the antenna.



Ten meters was most active during the day. In the early evening, 17 provided propagation to the US, including the East Coast. Later, 20 took over as the most effective band.

rewarding than you expect.

Would I do it again? You betcha. Only next time, I'll pick a MM QTH with a little less relative humidity!

All photos by the author.

### Notes

<sup>1</sup>By-country operating permit information for visiting amateurs: [www.arri.org/FandES/field/regulations/io/ recip-country.html](http://www.arri.org/FandES/field/regulations/io/ recip-country.html).

<sup>2</sup>International waters: [www.arri.org/FandES/field/regulations/io/maritime.html](http://www.arri.org/FandES/field/regulations/io/maritime.html).

David Rosenthal, N6TST, has been licensed since 1989 and holds an Amateur Extra class certificate. He's an EE and a physicist actively working in RF engineering as well as a science lecturer and entertainer. He spent several years as a science correspondent for CNN. You can reach him at 840 W Springer Ave, Ridgecrest, CA 93555; [n6tst@ridgenet.net](mailto:n6tst@ridgenet.net). 