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OMISSILE

SPRING TIME STATION MAINTENANCE!

How to Maintain Your Ham Radio Station

By H. Ward Silver from Ham Radio For Dummies, 2nd Edition

The best thing you can do for your ham radio station is to spend a little time doing regular maintenance. Maintenance works for cars, checkbooks, and relationships, so why not ham radio?

Be sure to keep a station notebook. Open the notebook whenever you add a piece of equipment, wire a gadget, note a problem, or fix a problem. Over time, the notebook helps you prevent or solve problems, but only if you keep it up to date.

You also need to set aside a little time on a regular basis to inspect, test, and check the individual components that make up the station.

Along with the equipment, check the cables, power supplies, wires, ropes, masts, and everything else between the operator and the ionosphere. Check these items when you plan to be off the air so that you don't have to do a panic fix when you want to be on the air. Your equipment and antennas are of no use if they're not working.

You can make routine maintenance easy with a checklist. Start with the following list and customize it for your station:

- **Check all RF cables, connectors, switches, and grounds.** Make sure all connectors are tight because temperature cycles can work them loose. Rotate switches or cycle relays to keep contacts clean and turn up problems. Look for kinks in or damage to feed lines. Be sure that ground connections are snug.
- **Test transmitters and amplifiers for full power output on all bands.** Also, double-check your antennas and RF cabling. Use full power output to check all bands for RF feedback or pickup on microphones, keying lines, or control signals.
- **Check received noise level (too high or too low) on all bands.** The noise level is a good indication of whether feed lines are in good shape, preamps are working, or you have a new noise source to worry about.
- **Check standing wave ratio (SWR) on all antennas.** Be especially vigilant for changes in the frequency of minimum SWR, which can indicate connection problems or water getting into the antenna or feed line connectors. Sudden changes in SWR (up or down) mean tuning or feed-line problems.

- **Inspect ropes and guy wires.** Get into the habit of checking for tightness and wear whenever you walk by. A branch rubbing on a rope can eventually cause a break. Knots can come loose.
- **Inspect masts, towers, and antenna mounts.** The best time to find problems is in autumn, before the weather turns bad. Use a wrench to check tower and clamp bolts and nuts. Fight rust with cold galvanizing spray paint. In the spring, check again for weather damage.
- **Vacuum and clean the operating table and equipment; clear away loose papers and magazines.** Sneak those coffee cups back to the kitchen, and recycle the old soft-drink cans. Make sure that all fans and ventilation holes are clean and not blocked.

  You may not want to haul the vacuum cleaner into the radio shack, but it may be the most valuable piece of maintenance gear you have. Heat is the mortal enemy of electronic components and leads to more failures than any other cause.

  The dust and crud that settle on radio equipment restrict air flow and act as insulators, keeping equipment hot. High-voltage circuits, such as in an amplifier or computer monitor, attract dust like crazy. Vacuuming removes the dust, wire bits, paper scraps, and other junk before they cause expensive trouble.

As you complete your maintenance, note whether anything needs fixing or replacing and why, if you know. You'll probably get some ideas about improvements or additions to the station, so note those ideas too.

Over time, you'll notice that some things regularly need work. In a mobile station, for example the antenna mounts may need cleaning, vibration loosens connectors, and cables can get pinched or stretched. Always be on the lookout for these problems.

If you do routine maintenance three or four times a year, you can dramatically reduce the number of unpleasant surprises you receive.

A Modest Journey (N4UP)

Some Travel Adventures with Occasional Connections with Amateur Radio

PREFACE

Amateur radio is a very diverse collection of interests, embracing many different facets. To me, amateur radio is about goodwill. Every QSO has value to me. I love working DX and learning about other countries and cultures. Granted most of my DX QSOs have been short-exchange QSOs, but even so, there is for me a thrill in working everyone in a framework of goodwill, regardless of race or religion or culture. And for me there is the added thrill in working someone on the radio who is in a place I have been to.

Many Americans, perhaps even most Americans, have not traveled abroad, and most who have traveled abroad have only been to relatively ordinary places where the people and cultures are not that much different from our own. But some of us have been blessed with travels to relatively unusual places, where we have met some wonderfully different people, in wonderfully different cultures.

So when I read of a DXpedition to some strange and lonely place, it evokes memories of my own adventures, and a real appreciation for the challenges and difficulties in setting up a radio station (or, in my case, a scientific research facility) in a strange place.

As an aquantaince once said, “another issue is the decidedly human tendency to perceive the World through the prism of our own needs, wants and experiences.” The problem is that other peoples and other cultures may be very different from our own. With an open mind and a not small measure of graciousness, amateur radio is an opportunity to learn and an opportunity to express goodwill. To me, both of these are priceless.

I have been licensed since 1963 but was off the air for many years due to family and career, and returned to the hobby in 2013. In my career, I traveled all over the world and had many adventures, and my only regret is that I was not radio-active at the time of these travels.

Part 1. NAURU

Most people have never heard of this country. It is an oval island country in the west-central Pacific, with around 10,000 people and about 8 square miles. It is an island made of phosphate, and the principal source of income was phosphate strip mining, until the supply of economically extractable phosphate was exhausted. At the peak of its phosphate industry, Nauru was (based on per capita income) one of the richest countries in the world and Air Nauru had a large fleet of commercial aircraft that served the region.

After the decline of the phosphate industry, and after some very bad investments, Nauru became one of the poorest countries in the world and Air Nauru was, during my last visit, down to only one aircraft.

In the 1990's I went to Nauru once a year, for a week or so, as part of my job as Program Director for Atmospheric Radiation at the U.S. Department of Energy. We worked closely with the Nauru government and built a state-of-the-art atmospheric radiation research facility at the airport. If you Google Nauru and check out the Wikipedia page for Nauru, you will see reference to the Atmospheric Radiation Measurement (ARM) Program. That was my program between 1990 and 1997. Then I moved on to be Program Director for Atmospheric Research (1997-2004).

On my first visit to Nauru, we rented the only rental car in the country and drove around the country, literally and slowly, in about a hour. There was only one road, around the perimeter where people live. Inside the perimeter is the phosphate mine, or what is left of it. We drove on the left-hand side of the road, as is the law there, though we saw no other vehicles on the road. Talk about traffic congestion!

Of course in order to do anything in such a place you need permission from the government. This is the first challenge of any DXpedition or scientific adventure, and may not be easy. Indeed, it took us months of negotiations to win approval to build our facility. And of course we needed the Nauru government to provide the land upon which to build, and power to run our equipment, and local technicians to operate our equipment. In this case the permissions and the land were the easy parts. We were given a nice plot of land on the airport premises, near the end of the runway. Power was a real challenge. Here we take for granted that electricity is available to us at modest cost, 24 hours a day. In many countries it is not so. In Nauru the power grid relies on diesel generators, burning diesel fuel, delivered by ship, every now and then, depending on when the Nauru government could afford to buy it (at least in the early 1990's). In other words, power is expensive and not reliable. And in many cases, power is rationed, so one day you might only have power, say, from midnight to 4:00 am, and on another day from noon to 4:00 pm. And some days not at all. We needed power 24 hours a day, so we had to install our own generator and fuel storage and arrange for fuel deliveries.

We did not build our facility from scratch. We had already built and deployed prototypes in customized shipping containers. Then, after we worked out the bugs, we started building them for our permanent sites. So it was relatively easy to ship our "facilities" from Los Alamos, New Mexico, to Nauru. That took almost a year in transit. Not many ships stop at Nauru. They are few and far between, as they say. Indeed, on one of my visits to Nauru I stopped at the general store (the only place to buy food or pretty much anything) and the shelves were mostly bare. The ship was a month late and the country was almost out of food and supplies.

It was of course more appropriate to hire locals to operate our equipment rather than to bring in "outsiders" who might not be sensitive to local issues. And locals are much cheaper (and nicer) than visiting engineers and scientists. We were lucky. Nauru had two weather technicians, who agreed to work for us and, after training, they ran our equipment for us. Another challenge was the internet.

In many places around the world, there is either no internet access or it is very limited. For our operation in Nauru, we had to install a satellite ground station and lease time on a satellite. That is not as easy as it sounds.

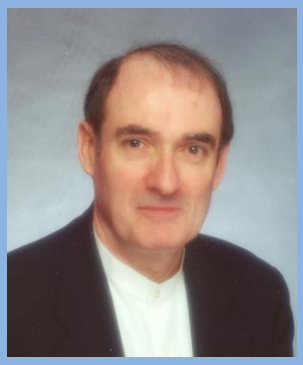
So what do you do when you run out of phosphate? One option is money laundering, and they did that. Another is building prisons and accepting prisoners and refugees on behalf of Australia (at Australian expense), and they did that too. Also, apparently, there is a lot of money to be made by recognising other countries as countries, when most of the world does not. China (People's Republic of China) paid Nauru $130 million to recognize China and establish diplomatic relations. And Russia paid Nauru $50 million to recognize Abkhazia, a Russia-oriented break-away region of the Republic of Georgia. But it would seem that the only long-term business is prisons and refugees.

Unemployment in Nauru is about 90% and almost all of those who do have jobs work for the government. And according to Wikipedia, Nauruans are the most obese people in the world: 97% of the men, and 93% of the women, are overweight or obese.

Anyway, at least we didn't have to worry about housing. Nauru has a hotel! And a very nice one at that. The Menen Hotel Nauru. The hotel is on the beach, as is almost everything except the phosphate mine.

I can't tell you how excited I was, in March of 2015, when I worked the German DXpedition in Nauru from my home station in Virginia. The Germans were staying at the very same Menen Hotel Nauru, and their station was set up nearby. I worked them on 17 meter SSB and 30 meter CW. It is not easy working stations in the west-central Pacific from the U.S. east coast. You have to account for the time difference (12 hours) as well as unreliable propagation.

Okay, one last Nauru story. On one occasion we were at the airport waiting to depart Nauru for the Solomon Islands. Just before boarding time, we heard a marching band just outside the window as the President of Nauru and his assembled and plumed processional marched through the waiting area and boarded the plane. The plane then took off, without us. We were then informed that the President needed to attend a meeting in Kiribati, and that our flight was postponed until his return. Many hours later, we boarded our flight (the same, one-and-only Air Nauru plane) and headed for the Solomons. There's nothing quite like arriving at Honiara (Solomon Islands) at 4:00 am.



N4UP, Peter, OMISS #9203

Have a story that you'd like to share with OMISS members in a future newsletter? Feel free to email your story and any photos that might help tell that story to: russpell@yahoo.com

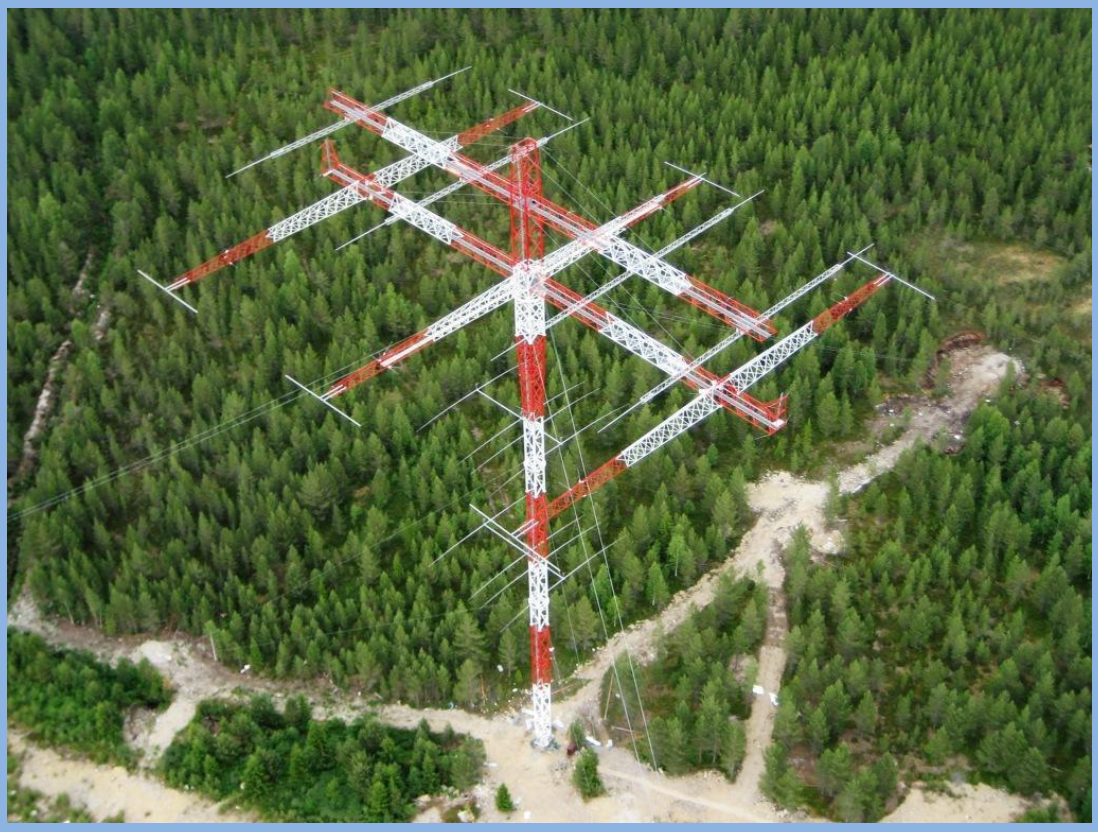
Future Field Day Antenna Anyone?

What was remarkable about the station OH8X?

A. It had been on the air for 8 decades.
B. It had the worlds largest 160m antenna.
C. It was the first radio free Europe amateur radio station.
D. It had more DX records than any other station in its 80 year history.

The correct answer is: B. It had the worlds largest 160m antenna.

The OH8X 160m yagi was a 3-element monster with 12.9dBi gain that stood over 330 feet high and weighed a staggering 40 tons. It occupied a site of around 29,000 square meters and was built from 450 meters of tower sections. The entire tower was rotated by a 11kW motor.
On December 6,2013 Radio Arcala (OH8X) reported that its 330 foot tall tower near the village of Arkala that supported 160 meter and 80 meter Yagis literally fell victim to high winds that also took out power to some 200,000 homes in Finland.



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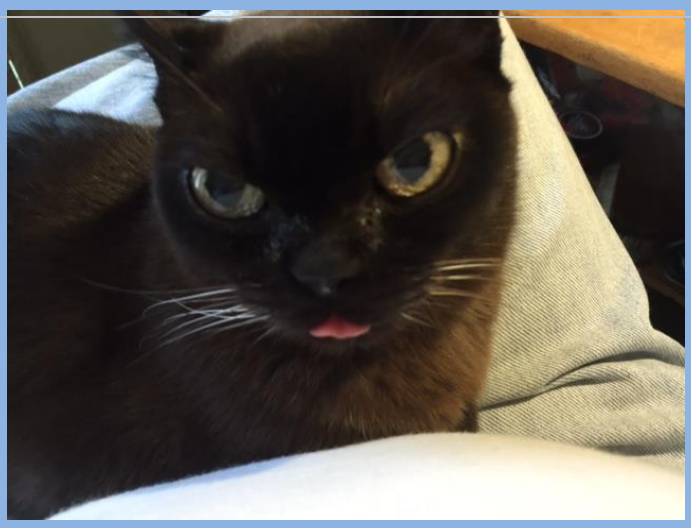
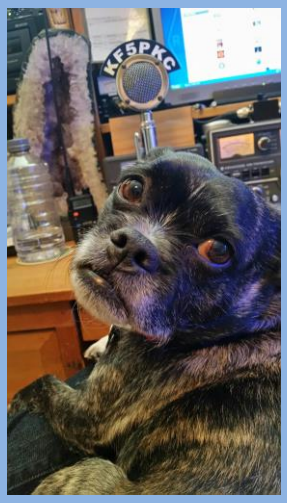
Member Pets, Toys and Work



N2ETJ Kitty



Guess who from Iowa?

N2ETJ Toy

KB7CSW & Pup

KA7MPX Mobile

Bits Of Amateur Trivia

The basic unit of electromotive force (EMF) is the volt. The volt was named in honor of Alessandro Giuseppe Antonio Anastasio Volta (1745 - 1827). This Italian physicist invented the electric battery.

The action of electric current on a magnet was first applied to telegraphy by Andre Marie Ampere (1775 - 1836) in 1820. An ampere is the basic unit of electrical current.

The basic unit of resistance is the ohm, named in honor of Georg Simon Ohm (1787 - 1854).

The basic unit of power is the watt. This unit is named after James Watt (1736 - 1819), the inventor of the steam engine.

The basic unit of frequency is the hertz. This unit is named in honor of Heinrich Rudolf Hertz (1857 - 1894). This German physicist was the first person to demonstrate the generation and reception of radio waves.

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