

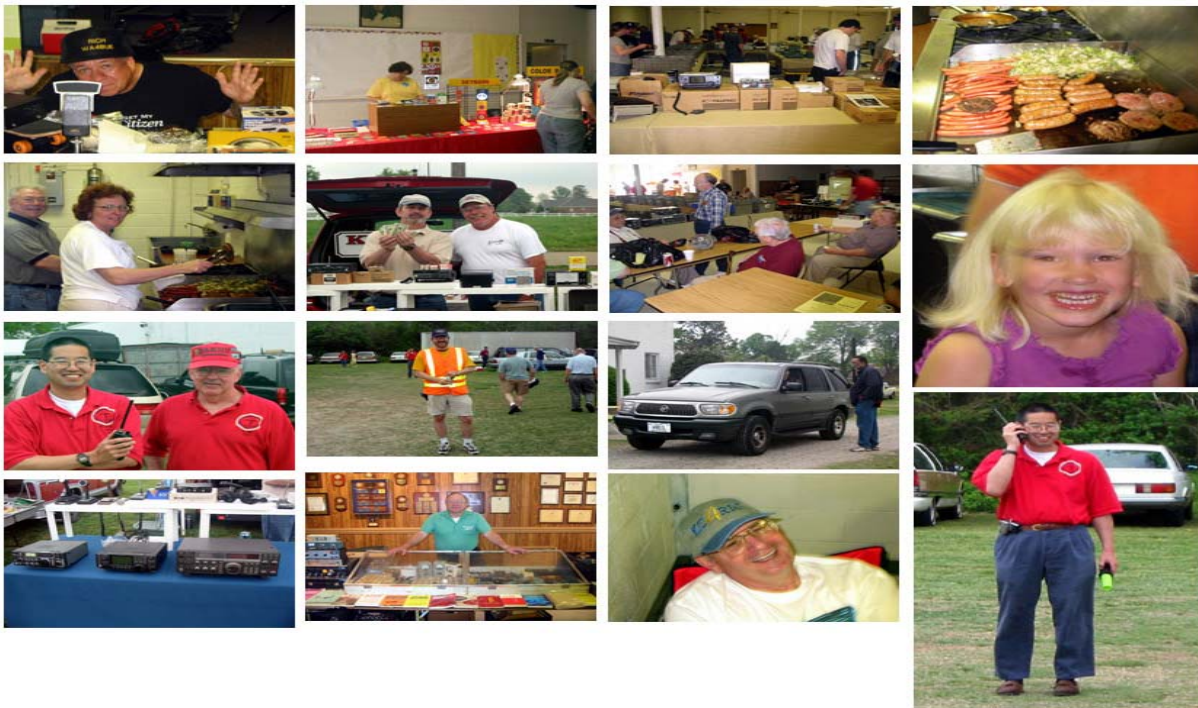


The Spectrum

Issue 5

May 2004

Spring Fest 2004



THANKS FOR A SUCCESSFUL EVENT EVERYONE!

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Don't Forget!!!

Our next meeting is on May 3rd, 2004 and Will be held at Fuddrucker's in the Greenbrier Section of Chesapeake.

Time: 7:00 pm Bring you're appetite!

Upcoming Events

CARS Meeting

May 3rd, 2004 meeting will be held at Fuddrucker in Greenbrier at 7:00 pm. Bring your appetite.

CARS Shack Day

May 8th, 2004 12:00 noon. Topic will be foxhunting and will be held after May 8th exam session.

CERT CLASSES

Beginning May 10, Mon & Wed evenings at Deep Creek Ruritan club and a second class Beginning June 28, Mon & Wed evenings at Fire Headquarters in Great Bridge (aka EOC) Call 757-382-6504 ask for Ted Ambrose or check out <http://www.citizencorps.gov/programs/cert/htms>

Springfest Support

As Vice President of CARS I wish to extend a very big THANK YOU to all that pitched in for Springfest setup and take down. This years volunteers were the best turnout yet. Everyone did a wonderful job considering the late hour for setup. I personally did not hear any complaints.

I'm sorry that I did not offer a sign in sheet for all the volunteers so that I may include your names in this thank you. But you know who you are, and I want you to know that I really appreciate the team spirit everyone showed. I did not have to lift as many tables this year, and that's a good thing.

I also want to extend a very special Thank You to John Maheu, KB1BBS, for being our liaison with the Hickory Ruritan Club and thank you John for all your patience.

I hope to see everyone at our next meeting. I'm thinking that it may be a dinner meeting.

73,
Bill, WF4R
VP CARS

Words From The President.

Ruth Bigio, KB4LIF

A Job Well Done

As I sat here today trying to think of a way to thank everyone for the fantastic job each did, I really had a difficult time. Bombastic adjectives just seemed really out of place in what I want to convey in my message. SpringFest 2004 is finally over except for the final paperwork and now the planning starts for the SpringFest 2005. Lessons learned from this year will be added towards the next one.

SpringFest 2004 was a wonderful HamFest for many reasons, first and foremost because we had a very good Chairman for the committee. Leo, KG4PWC, chose his workers well for each of his assignments and had an excellent team working for him. Too numerous for me to mention here, I know that Leo will probably mention or come up with some unique method to thank everyone. Secondly of course, was his willing group of workers that wrote letters, purchased food or materials, picked up signs, set up and later broke down tables and chairs, sold tickets, cooked or sold food, cleaned and mopped floors and bathrooms, directed traffic, stuffed goody bags, picked up flyers from stores or city offices, etc. The list could go on for the rest of the page, believe me. But I think you all get the idea. Third was the numbers of people we had flowing in and out of building from the tailgaters to the vendors inside. Fourth, it was really nice to see people from the other two clubs supporting us as well as people from Hampton, Newport News, Smithfield, Richmond, Moyock and the Outer Banks of North Carolina.

Bottom line, **We** had a successful SpringFest because of the effort everyone put into it. It was a job well done! Thank you all!

Upcoming Exam Schedule

- 5/8/04 Hampton Roads Planning District Center (ARRL)
Woodlake Drive, Chesapeake, VA
Mark Palsha, KI4VB, 757-474-4661
- 6/19/04 Virginia Beach Amateur Radio Club (ARRL)
Norfolk Academy, Wesleyan Dr, Norfolk.
Mark Palsha , KI4VB, 757-474-4661
- 6/26/04 Gloucester Radio Amateur College of Examiners
(W5YI) Contact Bill Sale, AE4RB, 804-694-0690



Tour de Cure

Diabetes Mellitus is one of the most common serious chronic illness that plagues our population and many of our senior Hams. The American Diabetes Association is a non-profit organization helping with research, information and advocacy (www.diabetes.org). Our local chapter raises in excess of \$130,000 with the annual Tour de Cure. This fundraising bicycle ride has multiple routes ranging from 25 to 100 miles. Each year, the Chesapeake Amateur Radio Service supports the 30 and 50-mile routes within the City of Chesapeake.

April 17, 2004 started clear and calm which was reassuring since the author with the help of his brother-in-law had placed a 20-foot mast with a 7 ft vertical dual band antenna and a 102 ft G5RV and outdoor autotuner on the roof of Hickory School. The anchor points were plenty sturdy, but a few more guys would have been necessary if a typical spring thunderstorm had rolled thru. The top of the mast was about 50 feet off the ground and the ladder line for the G5RV was held away from any metal surfaces but not even close to the ideal vertical orientation for ideal propagation. At least the wire antenna was oriented east west favoring the desired north south propagation to hit Manteo, the end of the 100-mile route.

In a race to get everything done before the sun went down, I couldn't get the inside station set up the night before. So I was running around frantically to get wire strung when Sonny, K4WYS arrived. "So who was the monkey?" he asked. Actually, I was born in the Year of the Monkey, but my brother-in-law works for a roofing company (believe it or not). Sonny helped with wiring up the LDG RT11 remote box and the antenna feed lines. Between 0600 and 0700, others arrived, John and Mary

Lee, K0IBS, and KF4HFJ, Rich (WA4BUE) and his wife Harriet (Tour de Cure Site Coordinator), Paul KF4ZAB, Phil WB3IEC, Steve KI4EIN, Ray and Mary Lou K4CRH and K4MLH, Ruth KB4LIF, Dee Dee KI4DNN and Rick KC4RIC. But it was obvious that their interests were in the wonderful breakfast provided by Shoney's for the volunteers. I managed to mount the 20 foot mast and J-pole on the side of my truck and I was ready to go.

With full bellies, all Hams made their way to their assignments and were in the clear before the bicyclists left the start line. It turned out to be a beautiful day to be outdoors. Everything went smoothly although from the NCS location, a few Hams seemed to have spent a little time daydreaming. We had to report to animal control one unfortunate beagle that was struck by a car not related to the event, a few riders with minor problems and pickups. Bobby, WA4JRC was standing by early for any HF relays. All operators did their part and the event was a success.

The G5RV worked well early in the a.m. but later in the morning we could not reach Manteo. This may have been due to the band conditions, but also the Manteo group was using a vertical, which usually does not work as well for short skip contacts. Al WA4TCJ, using his 2-meter boomer was able to hit the 146.970 repeater so we had constant contact with the Virginia Beach group, who were supporting the North Carolina side of the 100 mile route. With 2 VHF/UHF and 1 HF rigs and supporting cabling and masts and antennas, it was an impressive NCS station.

Lunch was also provided. What more could you ask for? ...two good meals, a nice day, radio time and all to help a worthy cause! With 4 other people helping, take down of all the antennas was much faster! Thanks to all who helped. 73 see you next year.

Leo
KG4PWC

LOCAL NETS

SKYWARN NET Fridays 1900 hours.	146.820 MHz
CARS 10 Meter Net 2000 hours on Mondays CARS doesn't meet	28.400 MHz
Hampton Roads Public Service Net Mon-Sat 2100 hours	146.970 MHz
VBARC 10 Meter Net 2000 hours on Thursdays VBARC doesn't meet	28.400 MHz
Portsmouth "RagChew" Net Monday & Wednesday 19:30 hours	146.850 Mhz
Portsmouth Amateur Radio Emergency Services Net Fridays 1930 hours	146.850 MHz

Too Many Cooks Can Spoil the Broth?

Fortunately, HAMS despite their moniker don't have to make broth. But Shack Day April 10, 2004 was a definite case of lots of cooks in a small space. The menu for the day was to construct an off set attenuator for Fox Hunting. The attenuator came pre-assembled on a small printed circuit board. The only requirement was to mount and attach 2 pairs of leads to a connector(s) of your choice. The original plan was to mount them in electrical conduit connector boxes, which would attach directly to a Tape-Measure Beam antenna.

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ARRL NEWS BULLETINS

UTILITY DRAWS "LINE IN THE SAND" ON BPL INTERFERENCE ABATEMENT

In an e-mail this week to the FCC, an electric utility testing Broadband over power line (BPL) systems in the Raleigh, North Carolina, area has drawn a virtual line in the sand on how far it plans to go to mitigate interference to Amateur Radio.

Responding this week to the FCC about BPL interference complaints from hams, Progress Energy Corp (PEC) told the FCC that his company has eliminated any harmful interference from its BPL trial site and now complies with FCC rules.

"It is PEC's position and interpretation of the FCC's rules with regard to 'harmful interference' that any interference that may still exist is not 'harmful' as that term is defined by the FCC's rules," Len Anthony, PEC's attorney for regulatory affairs, told James Burtle, chief of the FCC's Experimental License Branch. "This level of interference does not seriously degrade ham radio operation or transmissions or cause repeated interruptions." Some, but not all, of PEC's BPL field trials are covered by an FCC Part 5 experimental license.

The FCC defines as "harmful" any interference that "seriously degrades, obstructs or repeatedly interrupts a radiocommunication service operating in accordance with the Radio Regulations."

Anthony claimed that since PEC can modify its Amperion BPL system to totally eliminate interference to fixed stations, "the only impact of any kind upon ham operations is upon mobile operators." PEC concluded that since BPL interference to mobiles would be "very short lived," the Company is not causing harmful interference and is in "full compliance" with FCC Part 15 rules.

ARRL North Carolina Public Information Officer Gary Pearce, KN4AQ, suggests PEC has a bit more work to do. He is among local amateurs closely monitoring BPL deployment in the test zones and cooperating with PEC And Amperion to work out any interference issues. Pearce says interference remains on the top end of 20 meters in an overhead-line field trial neighborhood where PEC recently had tweaked its system.

"Nothing had changed," he told ARRL after visiting the

neighborhood in the wake of Anthony's e-mail. "They were still covering up the top end of the 20-meter band." Interference to 17 and 12 meters had been notched out, but beyond that, BPL interference persisted from 14.290 to nearly 17 MHz, he said, and "fringe" carriers still encroached some 100 kHz into the bottom of 15 meters. Interference had not been mitigated at all in neighborhoods with underground power service, he said.

Progress Energy has been operating its "Phase II" trial in three neighborhoods south of Raleigh since early January. The area, in Wake County, is largely rural or lightly settled.

No hams live in the underground-wired neighborhood, so none complained, Pearce said. The handful of BPL interference complaints eventually lodged with the FCC came from amateurs living closer to the overhead-wired neighborhood, and some were from mobile operators.

Pearce said PEC's stance regarding mobile stations "sets a new bar" in interpreting harmful interference. "Hams have never been asked to Accept that level of interference before," he said, noting that mobiles driving by a power line can hear the signal for "a mile or so."

The ARRL's BPL strategy calls for the League to seek a radiated emission limit sufficient to protect the estimated 70,000 Amateur Radio mobile stations in the US. ARRL field observations using typical amateur equipment have documented BPL interference to mobile stations located hundreds of meters from BPL interference sources.

Pearce says the North Carolina hams will respond to Progress Energy and the FCC to disagree with its interpretation of "harmful interference" and its conclusion regarding interference to mobiles.

While he maintains that controlling BPL in a small trial area like his should not be that difficult, "having BPL buzzing across all the power lines in a large city is another story entirely, and that's what we're worried about."

ARRL CEO David Sumner framed the situation another way. "If BPL emissions block weak signals that otherwise would be usable, that is harmful interference and they must remedy it," he

Continued on page 6

SKYWARN SPRING TOPIC

THUNDERSTORMS

Thunderstorms cause an average of 70 fatalities and 1500 injuries each year through the tornadoes that they spawn. They often produce wind speeds in excess of 250 mph and can be one mile wide and stay on the ground over 50 miles. Tornadoes are not the only cause of death from a thunderstorm – lightning causes an average of 80 fatalities and 300 injuries each year. They occur with all thunderstorms. Since strong winds from a thunderstorm can exceed 100 mph, they can cause damage equal to a tornado. These winds are especially dangerous to aviation. Flash flooding is the #1 cause of deaths associated with thunderstorms...more than 140 fatalities each year. Hail causes more than \$1 billion in crop and property damage each year.

Although thunderstorms affect relatively small areas when compared with hurricanes and winter storms, ALL thunderstorms are dangerous! The typical thunderstorm is 15 miles in diameter and lasts an average of 30 minutes. Of the estimated 100,000 thunderstorms that occur each year in the United States, about 10 percent are classified as severe.

The National Weather Service considers a thunderstorm severe if it produces hail at least ¾ inch in diameter, winds of 58 mph or stronger or a tornado. ALL of these must be reported.

*** HOW FAR AWAY IS THE THUNDERSTORM?***

- Count the number of seconds between a flash of lightning and the next clap of thunder.
- Divide this number by 5 to determine the distance to the lightning in miles.

30/30 Lightning Safety Rule

Go indoors if, after seeing lightning, you cannot count to 30 before hearing thunder. Stay indoors for 30 minutes after hearing the last clap of thunder.

Lightning Myths

- If it is not raining, then there is no danger from lightning.
- The rubber soles of shoes or rubber tires on a car will protect you from being struck by lightning.
- People struck by lightning carry an electrical charge and should not be touched.
- "Heat Lightning" occurs after very hot summer days and poses no threat.

Too many cooks. Continued from Page 3

However, even with the mounting there is room for variation, you can mount 1 or 2 connectors, a switch or mount the box as part of the boom or at the end. Bill, WF4R resident electronic guru came up with a clever mounting solution with the wire running through the boom and the sole BNC connector on the end cap.



Ron, Dee Dee's (KI4DNN) XYL was busy soldering leads to the boards. Never having done this before, I was amazed that he was able to connect the leads without the aid of the magnifying lamp. With 12 boards to attach leads, there was plenty of opportunity for practice. With the reassurance that with the temperature-controlled iron, it was difficult to damage the board itself, Ron soon got proficient in getting a solid connection. We only had one moment of panic when a trace was mistaken as solder splatter and was almost cut by yours truly.

After fashioning a crude template for a 3-hole box, Ruth KB4LIF and Steve KI4EIN, set about the task of drilling the holes. Performing quality control and OSHA safety oversight were Sonny, K4WYS and Barry W3AFH. There was no mistaking the fact that these were "Hand Made". Fortunately for the assembly crew, the end of shift whistle blew, halting the manufacturing process. At least these parts don't have to be stored in a refrigerator!

It was a fun morning. Unfortunately, other commitments (including Tour de Cure meeting and CW practice session) forced us to delay the planned Fox Hunt exercise. But with 11 people turning out, it was a busy kitchen. Until next time, "bon appetite!"

73
Chef Leo
KG4PWC

said. "Progress Energy has as much as admitted that they can't. The only thing left for them to do is to shut their system down and get back to their basic business of supplying electrical energy."

Additional information about BPL and Amateur Radio is on the ARRL Web site
<<http://www.arrl.org/bpl/>>.

Introduction to Soldering

Soldering is a basic skill, which is not difficult to learn and very useful even with today's miniaturized circuits. This article is a very brief overview. An excellent tutorial is the Vectronics Soldering Course Kit VEC 1500 K for \$29.95, which can be ordered from a variety of online sites including www.vectronics.com. The author found this kit to be very helpful. Another excellent online source is the tutorial on the Elecraft website, www.elecraft.com. There are several things to know, type of solder, type of solder irons, helpful accessories, types of circuit boards and some basic technique.

Solder is a mixture of tin and lead. Tin melts at 450F and lead melts at 621F. Combine the two together and the melting point drops below 400F. Common ratios of tin to lead are 60% tin and 40% lead (60/40) and 63% tin and 37% lead (63/37). The 63/37 has a slightly lower melting point but hardens much more quickly than 60/40. 63/37 is more expensive but definitely makes mounting parts on a crowded board or tiny parts such as SMT (surface mount technology) much easier. Silver containing solder has a higher melting point, which makes for a more secure joint but can make removal much more difficult. Flux helps clean the metal surface allowing the solder to flow and adhere better. Rosin is the most common flux, and all soldering done by Hams should use rosin core. Even soldering copper J-poles is easier with rosin core. Do not use any other forms of flux. Non-rosin flux can damage boards! Finally use small diameter solder for electronics. Typically around 0.20 inch diameter works well. For copper pipe, a larger diameter rosin core solder can be used.

At the temperatures used for soldering, lead vapor is not a concern. However, lead can be ingested by transfer from the fingertips to food or to cigarettes. Wash your hands after handling solder. Total lead exposure is cumulative but for the hobbyist, exposure is much lower than in a factory setting.

A 30-40 watt soldering iron can be used, but if you plan to do soldering regularly, consider a temperature controlled iron. Rapid but controlled heat transfer to both surfaces (wire or component and board) is the

key to success. A tip that is chisel shaped is preferable to a cone tip. Good irons have chrome electroplated to the tip to help preserve the tip. All iron tips should be cleaned with a wet sponge and not with an abrasive. Heavier trigger activated irons can be used, but get one in the 100-140 watt range.

Useful accessories are a solder sucker (hand vacuum pump for desoldering), copper braid for desoldering, a hobby vise, magnifying lamp, liquid flux, a metal pick, needle nose pliers and flush cutting cutters. To desolder a component, spread flux on the site, heat the site (component lead and board) and wick up the solder either with the pump or braid).

Circuit boards may be double sided, single sided or double sided with plated through holes. Usual convention is to solder on the opposite side of the component. Plated through holes will take more solder than single sided boards to make a solid connection.

Prior to installing any components, bend wire leads with needle nose pliers so that the component will slide through the holes with the component located as close to the board surface as possible. After passing the leads through the holes, bend the leads outwards to help hold the component in place. If possible bend the leads so that accidental spillage of solder does not cause a short between traces. If you trim some of the lead wire prior to soldering, there will be less wire to heat. Finally trim off any excess wire and solder, scrape off any excess rosin.

The most important technique for soldering is heating both surfaces adequately. If you heat only the component, solder will stick to the lead wire but not to the board. If you only heat the board, you will see a donut of solder around the component wire but again the wire will not be attached to the board. Both cases are called cold solder joints. By touching the solder iron to both the hole and wire at the same time for several seconds, solder will flow and coat both surfaces.

With practice, you will be soldering with confidence and like a pro. One of the most satisfying feelings of accomplishment occurs when you are on the air using something that you have built or modified.

73
Leo
KG4PWC

Gloucester County Fox Hunt

Keith Ainsley, KG4ZXX

Sunday, April 25, 2004 was a beautiful day for a fox hunt. The Middle Peninsula Amateur Radio Club was having their monthly fox hunt in Gloucester County. So I decided to dust off my tape measure yagi and see what it was like to be on an actual hunt.

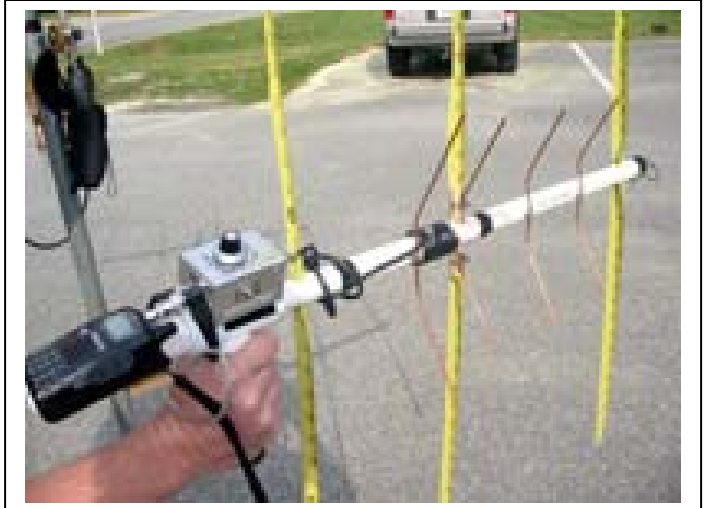
I learned that I still have lots to learn about this sport. The Gloucester Hams have a combination mobile and foot fox hunt. There were plenty of compass bearings and maps to be found.

I also noticed that there were as many antenna configurations as there are hams and radios. I saw variations of the tape measure yagi's, I saw small quad antennas and doplar units in use as well.

All in all I had a very enjoyable time with this group of fine fox hunters. I learned that I have lots to learn but that didn't matter. I enjoyed trying to find the fox. I learned from this experience that an attenuator is a must. I also noticed several antenna configurations that were a combination 2 meter and 70cm for using the 3rd harmonic.

To Mark, N1LO and the rest of the group I enjoyed myself a lot and look forward to coming to more of your events. Here are some pictures that I captured of the different antenna setups. I thought you would enjoy viewing these since we are getting the Fox Hunt bug here on the Southside.

73's



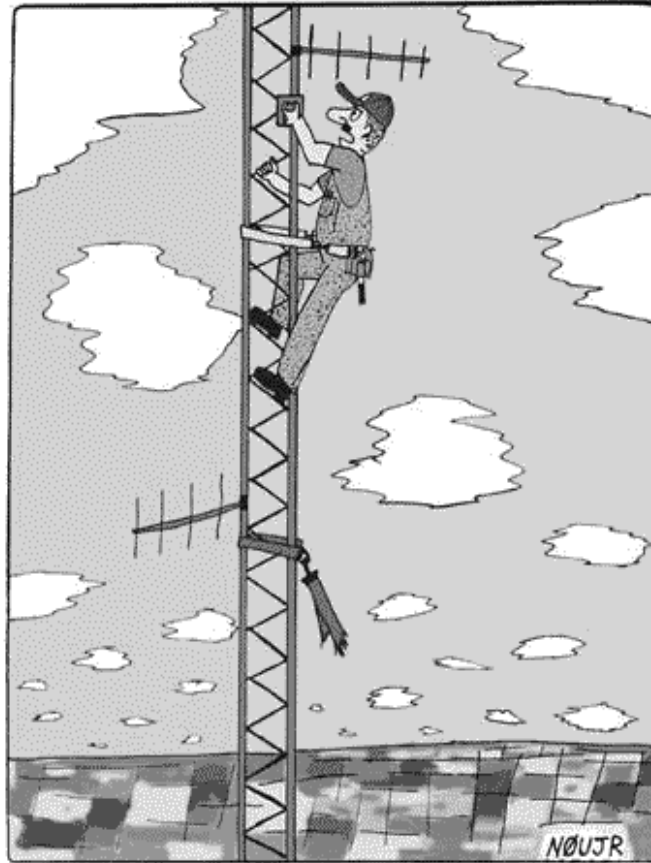
More antenna pictures next page.



I do not have all the amateur's names that were involved in this fox hunt. However, thanks goes out to Mark, N1LO and Ed, AT4GO, the club president.

The Middle Peninsula Amateur Radio Club has a fox hunt every 3rd or 4th Sunday of the month. Listen to 145.370 for announcements of the next hunt.
73's

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"So Bob...why did your ex-wife give you a new climbing belt for Christmas?"

The Spectrum

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