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WORLDRADIO

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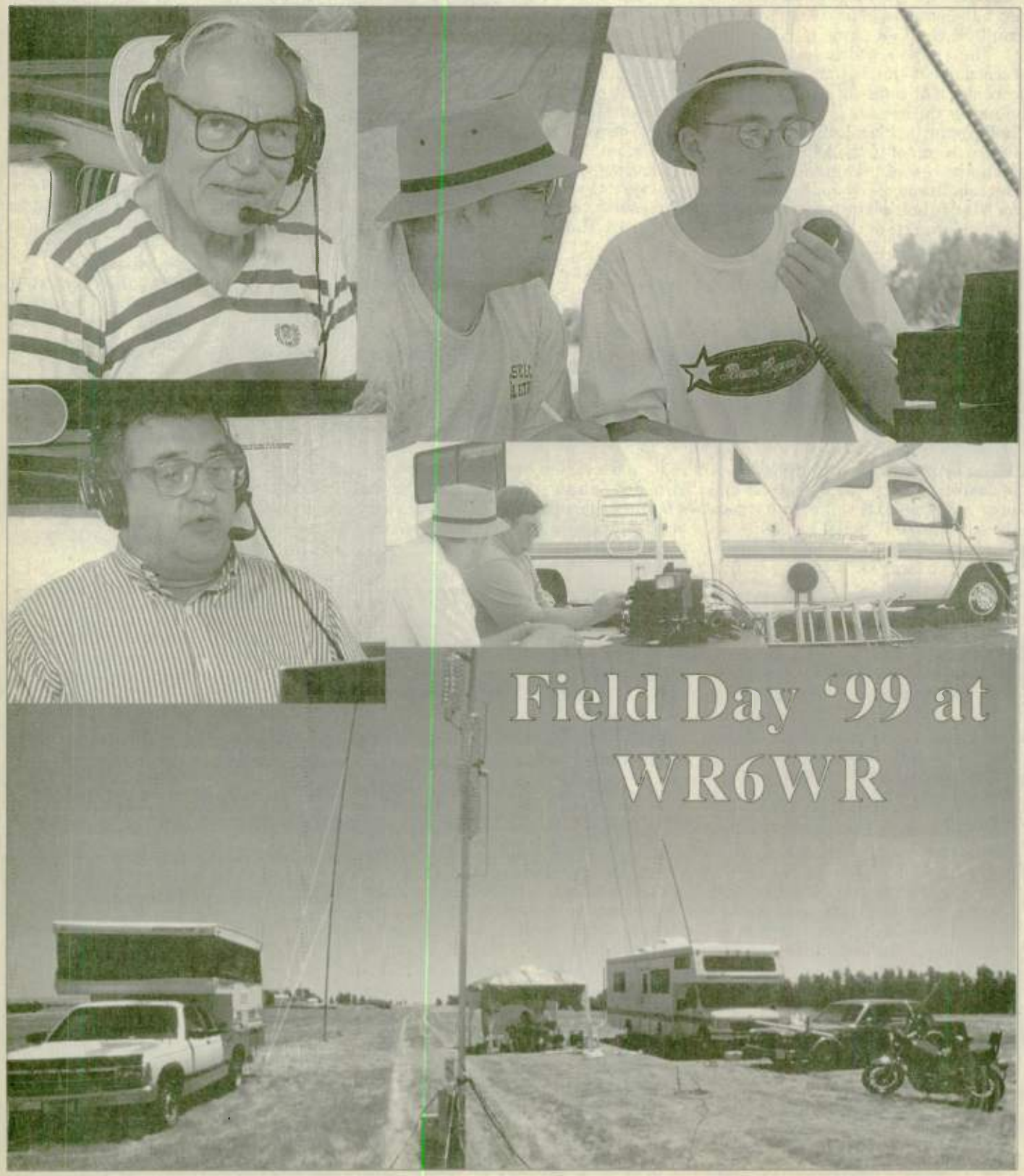

Field Day '99 at WR6WR

Multiple call sign holders could be fined

The FCC's Riley Hollingsworth, K4ZDH, says the Commission may have to resort to fines to curb the practice of hoarding multiple club call signs.

"The reason we're concerned about this is that we consider it an abuse of our licensing processes," said Hollingsworth, a legal adviser for enforcement in the FCC's Compliance and Information Bureau. "If somebody applies for 30 or 40 licenses over time, it really overloads the staff." Hollingsworth pointed out that the call signs often must be typed in manually. If we have continued abuse, we're going to have to levy some forfeitures, which we have done in the past for abuse of Commission processes. With short staff and budget considerations, we just can't let things like this go on," he said.

Earlier this month, a ham listed as the trustee for more than three dozen club station call signs agreed to give up all but one of them. Motoaki Uotome, JA1GZV, who also holds a U.S. Extra license as W9BO, apparently was the trustee of 41 club station call signs. Last month, the FCC set aside 14 recently granted club station call signs and 12 recently granted club vanity call signs he held and asked Uotome to justify the grants.

The U.S. is not the only country in which Uotome has collected a call sign. An Internet search indicates he also holds one or more Amateur Radio call signs in Australia, Chile, and Uruguay.

Hollingsworth concedes that the FCC rules do not specify an upper limit to the number of call signs an individual may hold, but says "the underpinning of the rules is common sense." He recommended that multiple call sign holders should seriously consider turning in their excess grants before they hear from the FCC, "because we will be pursuing them."

News of the cases already has had an impact. "We're had several others come in on a voluntary basis and turn their excess number in," Hollingsworth said.

The FCC also says that former holders of multiple call signs reclaimed by the FCC may not reapply for any of them under the former holder exception to the two-year waiting period. Additionally, the FCC does not plan to allow relatives claim them in the future as relatives of deceased former holders because the current holders do not qualify as legitimate license grantees. — *FCC, ARRL, Newsline*

FCC says Hams next in line for ULS

The FCC says the Amateur Service is the next in line to be converted to the Universal Licensing System. Amateur Radio is scheduled for ULS "deployment" in August. Most of the remaining wireless services will be converted from their old licensing systems to ULS in phases during the remainder of 1999.

The FCC has adopted a Report and Order to enable public access to application and licensing information in the ULS via the Internet. The FCC says its decision will "significantly enhance the ability of the public to access public record information regarding wireless licensees, at a reduced cost."

The Universal Licensing System will replace the venerable Form 610 series with a new, inclusive electronic document known as Form 605. It also will incorporate the vanity call sign program. The ULS will permit amateurs to file applications, modifications or renewals via the Internet. Individual amateurs will not be required to file electronically, however. So far, nearly 6,000 amateurs have registered with the ULS.— *ARRL Letter*

No changes to Amateur Radio examination questions

The National Conference of Volunteer Examiner Coordinators will not issue new Amateur test questions for the foreseeable future.

The NCVEC is the volunteer group that oversees the Amateur Radio test question pools for all examinations. Last fall its Question Pool Committee announced that all updates were being put on hold until after the FCC acts on restructuring the U.S. Amateur Radio Service. That has not happened yet, so the committee has been forced to put everything on the back burner until the FCC acts.

The Advanced class question pool scheduled to expire at midnight on 30 June will not change. The current examination questions and study materials are valid until further notice.

The NCVEC will not be able to begin revising the questions until the FCC announces its restructuring plan. When that will be announced, nobody is quite sure. — *Newsline*

Japan to South Dakota on 6 Meters

It may or may not be a new record, but two amateurs in one of the most sought after gridsquares in the U.S. have worked Japan on 6 Meters.

The Grid Square in question EN13LM. It is located in Parker South Dakota and is the station location of Arliss Thompson, W7XU and his wife Holly, NØQJM. And it was at about 0245U on 19 June that their odyssey of several trans-Pacific contacts began.

As Arliss reported over the W6YX VHF Reflector, he heard the KL7FZ 6-meter beacon in Alaska. This indicated that the band was open to the West so he called CQ on 50.110 MHz. Almost immediately he was answered by JA4MBM and they exchanged 5-3 reports.

W7XU says that he continued to hear bursts from other Japanese stations including JH6VXP, but it was not until 0005U that he contacted JH6NKZ.

But the contacts did not end there. Arliss says that Holly also worked JH6NKZ at 0008 and JA4MBM at 0015U. By the time Holly contacted JA4MBM, he was up to signal strength 5-4. This was the strongest signal heard from Japan at any point during the opening and also the last J A signal heard by Arliss and Holly.

Arliss says that while he has worked Europe on 6 Meters but this is the first time he has contacted with Japan on the 'magic band.' He says that at about 6000 miles, it's close to 2000 miles more distant than Europe from his South Dakota QTH. — *Newsline*

Five retests ordered

The FCC has ordered five more amateurs to sit for re-examinations or lose their licenses. Those being retested this time are from Vermont, Florida and northern California and represent the entire range of license holders from Technician through Extra. The amateurs in Florida and California were given until 30 July to re-take their tests at an FCC Office. The Vermont amateur has until 30 August to re-take his exam in front of ARRL VE team. — *FCC, Newsline*

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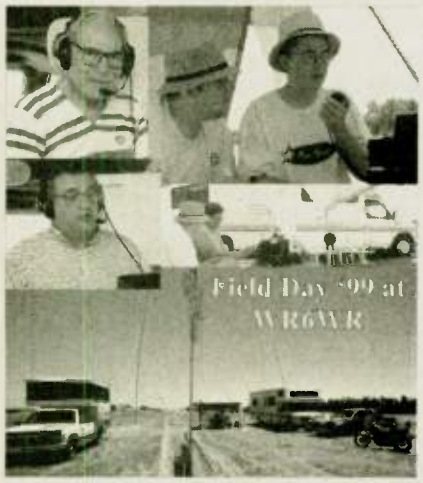

On the cover

One of the most antici — pated events of the year is Field Day. This year the Worldradio Staff ARC doubled its effort. Our stories are on pages 18 and 19, and we'd like to print yours too. Send it to us! (photographs too.)

The Road Not Taken

A road race covering lots of mountainous terrain in the middle of the night is the perfect setting for Hams suffering from insomnia.
— **page 6.**

Langkawi

Our featured DXpedition goes to one of the most sought after IOTA islands in South East Asia.
— **page 20.**

WORLDRADIO
August 1999 Year 29, Issue 2

Features

Departments

Next month: Club Huddle, County Hunter, FM, Repeaters & VHF, MARS, Old-time Radio, QCWA and RFI & You.

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Editor's Log

Once again, we have a long list of astute individuals who have seen the light! These outstanding Amateur Radio operators have joined the ever-growing list of those who have become Lifetime subscribers to ***Worldradio***.

- **John R. Suker, WW1R**
  Rutland, VT
- **James E. Harding, Sr., K3DRJ**
  La Plata, MD
- **Paul H. Hartman, K4FAF**
  Pelzer, SC
- **Merle L. Olmsted, AA4QE**
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- **Paul H. Lilly, K4STE**
  Wright Patterson AFB, OH
- **Alan K. Wilson, MD, KA5WGL**
  Crossett, AR
- **Michael S. Mitchell, W6RW**
  Rancho Cucamonga, CA
- **Annette Nicholson, N7SG**
  Sealrock, OR

Notice that our new Lifetime subscribers are from throughout this great country of ours? What is their motivation in becoming Lifers? They know a good deal when they see it! And besides, ***Worldradio*** is the only magazine for Amateur Radio operators that will tell it like it is! So, go forth, our new Lifers, spread the truth amongst the non-believers! Let the world know — ***Worldradio*** is the ONLY magazine you need to read.

•

New Zealand has got to be the whacko capital of the world. A few years ago, ORACLE, the anti-CW group started there, and guess what? A brand new group calling themselves the New Zealand Association of Radio Transmitters (transmitters have their own club??) or NZART has approached New Zealand's Amateur Radio Society with a new idea for testing prospective Hams. In a nutshell, they want ONE theory test, and ONE test on regulations. A prospective amateur would be granted a license based on his score on each test. Nothing new, right? Ha! They want a 50% score on the regulations and 30% score on the theory test as the minimum score to qualify for an "Entry grade" (previously called Novice) license. If the testee scores higher on the tests, he gets a higher grade of license. AND, they want to eliminate ALL code tests.

After 25 QSOs with 25 different stations, the Entry and Technician grades would qualify for additional all-mode operation between 21.100-21.200 and 28.100-28.600 MHz. With a 50% passing grade on the theory examination, plus completion of 25 CW contacts, an applicant may apply for the "General" grade, and have full privileges.

Not specified is how the CW contacts would be made. ITU regulations require the ability to copy by ear and transcribe by hand. Would they be allowed to use a PC to handle their contacts? We know computers are now capable of sending and receiving CW with no problem.

Shall we look at this in a different light? Suppose your local Police Department was looking for new recruits. A passing score on the "How to be a Police Officer" test would be 50%, but the prospective Officer would also have to pass a test on the law. A 30% score would qualify the applicant to become a Police Officer. But, if the same applicant can pass the the same tests with a higher score, he or she could be a Sergeant. A higher score? Lieutenant or Captain. The highest score? Chief of Police! Imagine the savings potential here, folks! We taxpayers would not have to pay for an Academy!

But seriously, is this the direction in which we want Amateur Radio to go? I don't think so. If we continue to lower standards, what is going to happen to our hobby? We will have more and more problems on the air, the various government agencies will start to get more and more complaints, and our allocations will eventually be taken away from the now out-of-control Amateur Radio operators. Am I being ridiculous?

Recently, a major telephone company on the East Coast gave a test looking for new applicants for entry level jobs. 90% did not pass the reading and writing portions of the test. What does this mean? The school systems all over the country have relaxed the standards for advancement over the last several years, and what happened? We now have a very large group of young adults who can't pass a reading and writing test!!! (Obviously, the test was much too difficult.)

Sure, let's reduce the code speed. It's going to happen, and we can't stop it. But we can stop any further erosion of the quality of Amateur Radio operators.

•

What is happening to Amateur Radio clubs? I keep hearing tales of declining membership and lack of interest from clubs all across the country.

Have we forgotten what Amateur Radio is all about? Friendship! Fun! Companionship! Comraderie! Where do you find all of these elements in one place? Your local radio club! Support them — get active! — *Rick, WF6O*

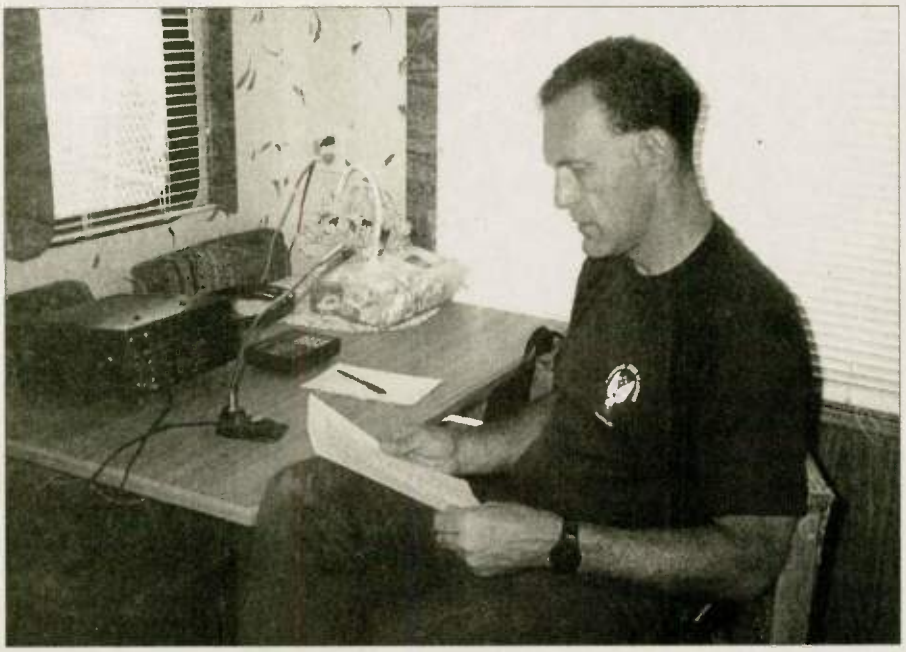
The Road Not Taken, '98

David Burch, KB7PPP and Todd Terp, KC7ZLN

For several years the McMinnville Amateur Radio Club (MARC)* and the Twisty Roads Rally Group** have joined in a project which has proved rewarding to both groups. TRRG produces a Time- Speed-Distance rally called *The Road Not Taken,* which is run overnight on the night of the full moon in August. Most of the course is gravel Forest Service roads in the Coast Range mountains of Oregon. Beginning in 1995, MARC has provided communications and participated in rally operation. Rally organizers were so impressed by the extra dimension added by Amateur Radio that two of them are now licensed and regular members of MARC.

The 1998 event was special because it was sanctioned as part of the National Touring Road Rally Competition by the Sports Car Club of America, the largest such event since 1992. This resulted in much wider participation than in the past from both the rally and nearby Ham communities. A rally of this size requires extensive planning, organization, and coordination, and work began at the first of the year to take care of permits, insurance, sponsorship, and all the other details that would ensure a smooth-running and pleasant experience.

Headquarters was located at the Spirit Mountain Casino in Grand Ronde, and a fifth-wheel RV loaned by Doug Cummins, KC7ZMU, was used as the main base station, with an auxiliary station maintained inside the casino where rally car checkpoint times were received and logged in on a computer. Three Hams kept busy at these locations. Because the course was so large and mountainous, simplex operation was limited, but headquarters could communicate with all stations through a single repeater.



Doug Cummins, KC7ZMU, checking the rollcall sheet at the Headquarters Station

On the course were checkpoint crews of two to three people including at least one Ham at each of the twenty-four checkpoints. Most checkpoint crews worked two positions during the night. Bob Wakehouse, KC7ZLP, "rally master," drove the pace car accompanied by Amanda Stowell, KC7HTQ. There were also two sweep cars following the last rally cars on the course: a fast sweep to officially close the checkpoints and direct the workers to their next assignment, and a slow sweep to provide emergency road service and first aid, which we were glad was never needed. There were a few flat tires, and one car did go off the road, but could still be driven. Two setup cars taking checkpoint crews to their stations were busy all night, and these also had Hams to keep headquarters and rally officials informed. In all, twenty-six Hams participated in the event.

Time-Speed-Distance rallies appeal to people who enjoy precision. It is important to understand that the rally is not a race; indeed, the average speed for the whole course is just a little over 20 mph. Competitors are given a route book which contains explicit instructions for each part of the journey. The course is set up with precision, and care is taken to be consistently accurate with measurements. One very important part of setting the course is to assign speeds to each instruction. This involves driving at various speeds and finding a balance, knowing that there will be competitors who can drive quite fast on gravel and those who will be novices at such a task. Once the course is set it must be measured precisely. Measurements are made twice in thousandths of a mile to verify accuracy, although for the competitors' route books, the mileages are given and scored in hundredths. At this point in the course construction the distance and speed parts have been established, and all that remains is to set a start time, put in appropriate pauses for breaks and fuel stops, and calculate the ideal time of arrival at any given point on the course. Checkpoints are placed along the route which competitors must reach at an exact moment to score a perfect zero. Each hundredth of a minute early or late to a checkpoint results in one penalty point. So the trick is to stay on

Mary and Rich Olmstead, KC7TXF, advise headquarters that checkpoints are set and ready for rally cars.

course, travel at the given speeds and arrive at checkpoints exactly on time. What could be simpler!

The contestants in this year's "Road Not Taken" had several challenges offered to keep them working hard to stay on schedule. The checkpoint locations are not known to the contestants and the rallymasters make sure that they are always unexpected. In all, 24 checkpoints were met on the course. Several were around corners that hid them until there was little chance to adjust speed. One checkpoint was set up on a loop on which there was no checkpoint on first passage, but on the second pass, climbing a long hill, the checkpoint magically appeared. Another checkpoint was placed just over the crest of a steep hill. This is the job of the rallymasters: minimize the contestants' chance to do everything perfectly. Nevertheless, some came close. Scores varied from an amazing 39 points (that's only 22 seconds off in more than 11 hours driving) to totals in the 1,000-2,000 range. The lowest scores were those of seasoned rally teams whose cars are also equipped with computers which use information from the wheels to tell the driver how to adjust his speed to be on time.

Keeping track of the competitors over 225 miles of twisting, winding logging roads as well as the placement of checkpoint crews has always been a nightmare in most rallies. With the help of Amateur Radio it has become easier because the complete rally is tracked in real time, and safer because incidents can be handled as they arise. In this rally a near disaster was avoided when the pace car discovered that a paved six mile section of road had been graveled over, making it unsafe at the assigned speed of 32 mph. He was able to inform the preceding checkpoint crew by radio so they could pass on emergency instructions to the drivers as they came through.

Forty cars were registered, three were no-shows, and one suffered a blown radiator hose shortly after the rally began, although the crew, helped by a local Good Samaritan from the nearby town of Willamina, was able to make repairs in time to participate in the second half of the rally. Beginning at 6 p.m. in the beautiful clear evening of 08 August the rally cars were started from headquarters at two-minute intervals. The setup cars had started out an hour earlier, and the first two checkpoints were ready before the pace car reached the first one.

And so, the long night had begun. There were the usual number of unforeseen happenings — erroneous worker instructions which left a checkpoint crew unable to reach the point where a setup car was to make rendezvous, a mad dash back to headquarters to pick up a missing checkpoint indicator sign, an interaction with a Forest Service officer who had not been advised by the USFS Hebo Ranger District that the activity was scheduled. But good communication was possible over the entire course, and problems were quickly resolved. In general good net technique and manners were used by all participants, which helped a lot.

The last checkpoint was in place at 4:30 a.m., and the setup crews made their way back to headquarters. The first rally cars came in about an hour later, and by 7 a.m. the banquet hall was filled with weary drivers and checkpoint crews. Because times had been sent in by radio, final results were available before the last car was in, so there was no impatient shuffling of feet while waiting for that. The coffee, sweet rolls, and fruit were ready, and everybody was comparing stories of the midsummer night's adventures and declaring themselves ready to do it again next year!

CEPT agreement — In plain language

Operating in a number of countries outside the United States without a lot of red tape just got a whole lot easier, thanks to recent action by the European Conference of Postal and Telecommunications Administration (CEPT) to approve the FCC's application to participate in CEPT Recommendation T/R 61-01. In Europe, the CEPT license can be used in Austria, Belgium, Bosnia and Herzegovina, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France (including Corsica), Germany, Hungary, Iceland, Ireland, Italy, Latvia, Liechtenstein, Lithuania, Luxembourg, Monaco, the Netherlands, Norway, Portugal, Romania, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Turkey, and the U.K. (including Great Britain, Northern Ireland, the Channel Islands, and the Isle of Man).

There are also a few 'DX entities' that are separate dependencies of France that are included in the current CEPT list, namely Guadeloupe, Guyana, Martinique, St. Bartholomew, St. Pierre and Miquelon, St. Martin, and Reunion. The list is updated each time a new CEPT country accepts the terms of Recommendation T/R 61-01, so if a country you want to visit is not on the list, check with the FCC, the ARRL, (or CEPT at http://www.ero.dk) for changes.

The CEPT license can be used by all classes of U.S. amateurs EXCEPT Novice class licensees. In all of the participating countries, Technician Plus, General, Advanced, and Amateur Extra class amateurs have the same operating privileges as Class 1 operators in the 'host' country. Technician licensees can operate with Class 2 CEPT privileges. The basic difference is simple — Class 2 licensees are not allowed to operate on Ham bands below 30 MHz.

The CEPT operating privileges are for temporary visits, and are subject to the regulations of the country visited. In other words, an American amateur still has an obligation to get a regular host country license if establishing residence in that country. The other rules and restrictions on the use of the CEPT license are contained in Appendix I of CEPT Recommendation T/R 61-01, "General Conditions for the Issue of CEPT Radio Amateur Licenses." (NOTE: European amateurs should not take offense at the different spelling in quotes from the CEPT rules. I have changed some of the words to the 'American' spelling to keep my spellchecker software from going berserk).

The 'CEPT radio amateur license' is really a combination of documents. Under Appendix 1 of the CEPT rules, the minimum requirements for a CEPT license include:

a declaration according to which the holder is authorized to utilize his Amateur Radio station in accordance with this Recommendation in countries where the (Recommendation) applies;
the name and address of the holder;
the call sign;
the CEPT license class;
the validity;
the issuing authority.

According to the notice issued by the FCC, if you have a valid license issued by the FCC, to operate under the CEPT license, you must have in your possession three documents:

Your FCC operating license (which includes your name, address, call sign, and the issuing authority);

Proof of U.S. Citizenship (such as your passport or other document you must have to legally visit the host country); and a copy of the official Public Notice No. DA-99-1098, issued 07 June 1999 by the Federal Communications Commission.

A copy of the official notice entitled "Amateur Service Operation in CEPT Countries," is available by fax on demand (202/418-2830), on the internet

Amateur Radio Call Signs

The following is a list of FCC sequentially assigned call signs issued as of 01 June 1999. For more information about the sequential call sign system, see Fact Sheet PR5000 #206S or contact the FCC, 1270 Fairfield Rd, Gettysburg, PA 17325-7245; e-mail fccitd@fcc.gov.

District	Group A Extra	Group B Advanced	Group C Tech/Gen	Group D Novice
0	ABØIS	KIØQE	++	KCØFXZ
1	AA1UM	KE1LL	++	KB1EDI
2	AB2GF	KG2QU	++	KC2FET
3	AA3SL	KF3DH	++	KB3DWU
4	AF4OY	KV4AB	++	KG4DMA
5	AC5SU	KM5VG	++	KD5HIS
6	AD6IT	KR6BM	++	KF6WLQ
7	AC7BB	KK7TE	++	KD7FQP
8	AB8EF	KI8IQ	++	KC8MOS
9	AA9XE	KG9PT	++	KB9UUN
N. Mariana Is	NHØN	AHØBC	KHØHZ	WHØABM
Guam	++	AH2DK	KH2UF	WH2AOA
Hawaii	WH7B	AH6PT	KH7TY	WH6DFZ
American Samoa	AH8R	AH8AH	KH8DO	WH8ABI
Alaska	ALØN	AL7RM	KLØTE	WL7CVC
Virgin Islands	++	KP2CP	NP2KK	WP2AIK
Puerto Rico	WP3D	KP3BM	WP3DA	WP4NOP

++All call signs in this group have been issued in this district.

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CAUTION: You will notice that the notice is in English, French, and German. Be sure you print out the full notice in all three languages, both as a courtesy to any non-English-speaking officials you may have to show it to, and because the rules require you to have the notice in all three CEPT official languages.

So, you've got your FCC license (the wallet edition that you have neatly laminated in plastic to keep it dry on Field Day), and a copy of the FCC Notice, and your passport. You are ready to operate in Lithuania. Not quite. You are now legal to operate, but there are a few more details you need to add to your storehouse of CEPT license knowledge.

The most important information you have to find out about is the local rules. The CEPT license is not a license to use American FCC rules in Lithuania. The host country rules govern your actual operations, as well as a few general CEPT rules.

If you are a Tech Plus, General, Advanced, or Extra c lass amateur, using a Class 1 CEPT license, you can use all frequency bands allocated to the Amateur Service and Amateur Satellite Service authorized in the country you are visiting. If you are a Technician licensee using a Class 2 CEPT license, you can use all frequency bands allocated to the Amateur Service and Amateur Satellite Service above 30 MHz and authorized in the host country. Appendix 1 also has some general operating rules:

On request you must show your CEPT radio amateur license (all three documents) to the appropriate authorities in the country visited. Don't quibble about the 'appropriate authority' part. If a toll booth operator on the autobahn wants to see your CEPT license, fish it out.

The rules allow operation of a portable or mobile station, and define a 'portable' station' as "any station using mains electricity at a temporary location, e.g. a hotel or a camping site." The definition of mobile is restricted to mobile operations OTHER THAN airplanes, gliders, and balloons. Operating under a CEPT license aboard an aircraft is prohibited. Of course, you can also use "the station of a radio amateur holding a permanent license in the host country."

As a bona fide CEPT licensee, you must observe the provisions of the ITU Radio Regulations and any special regulations in force in the country visited. The CEPT Rules add that "any restrictions concerning national and local conditions of a technical nature or regarding the public authorities must be respected. Special attention should be paid to the difference in frequency allocations to the radio amateur services in the three ITU Regions." This last one is really important. Don't be calling "CQ 40 Meters" on 7.235 from Lithuania.

The rules require the use of a specific operating call sign modification. When transmitting in the visited country you must use your national call sign preceded by the CEPT call sign prefix and separated by either the character "/" (telegraphy) or the word "stroke" (telephony). For example, if I were using my CEPT license on 20-meter phone in Croatia, I would sign as "Nine Alpha Stroke Kilo Echo Three Victor Victor."

When operating portable or mobile, your call sign must ALSO be followed by the characters "/M" (telegraphy) or the word "mobile" (telephony). For a portable operation, your call sign must be followed by the characters "/P" (telegraphy) or the word "portable" (telephony). For example, if I were to fire up my mobile rig in Greece, I would identify as "Sierra Victor Stroke Kilo Echo Three Victor Victor Stroke Mobile." Depends on what you are doing; i.e., 'different strokes for different folks.'

There is one other odd provision in the regulation that states, "The CEPT license holder cannot request protection against harmful interference." I guess that means when you head for Europe, you don't need to take Riley Hollingsworth's phone number. The CEPT Recommendation also notes that it does not govern or relate to "the import and export of Amateur Radio equipment, which is subject only to relevant customs regulations." In other words, just cause you have a CEPT license in your possession does not mean that you can waltz into Austria with a couple IC-706's and a fishing rod case full of hamsticks without doing all the normal customs paperwork.

QST recently published their claim of the oldest active amateur in the U.S. Sorry _QST_, you missed Dewey Wilson, W7HF, 102 years old and still going strong.

Where have all the call signs gone?

Jim Kehler, KH2D

A call sign is an identity to an Amateur Radio operator and we all want a 'nice' call. In the 'good old days' (whenever that was...) you took a test, and then you checked a box on the 610 form if you wanted a new call sign. Call signs were issued in blocks assigned to call areas and license class. When the form got to the FCC, somebody keyed the information into the FCC computer and the computer spit out what your call sign was going to be, the next one in line, based on the call district of your address. You waited and you worried and you hoped that you wouldn't get something horrible that didn't have nice phonetics. That's how I got my call sign, KH2D. I checked the box on the 610 form, the guy sitting next to me at the test got KH2C and I got KH2D. Somebody keyed his 610 form into the FCC computer first, I guess. Way back when, in the 'very old days,' if you moved from one call district to another, you were required to change your call sign. Other Hams could tell where you were by your prefix. W3s were always in W3-land. And KH2s were always in Guam. That's the way it used to work. But not any more.

Now we have the Vanity Call Sign Program. You can choose your call sign if you want to pay the vanity fee, which I think is GREAT! Why should somebody get stuck with a horrible call sign they don't like? For example, a CW operator would never be happy with a call sign like KQ2QQQ. But other things regarding call signs have changed, too. We now have VE testing. Used to be, you had to go to an FCC office to take a test. Now a group of volunteer examiners, who are ordinary Hams, can administer a test. Anywhere. Remember that word. Anywhere. That's a key word for what's coming later. Most VE groups are honest. Some aren't, which is evidenced by the fact that some have been the target of FCC enforcement actions in the past.

So here we are in the 90s — we have the VE testing program, we have the Vanity Call Sign Program, and then somebody decided we needed Club Call Signs again. We used to have them too, long time ago. Now you roll what we have today — VE testing, Vanity Call Signs, and Club Call Signs all up in one big ball and what do you get? Well, you get: THE VE TESTING VANITY CALAMITY CLUB CALL SIGN SCAM PROGRAM!!

I have never actually participated in this new program, but I have been fortunate enough to be at a place that's a hotbed of activity, so I can tell you all about how this program works. Before the Vanity call sign program, back in the 80s, here on Guam, a few of our Ham friends were contesters who wanted to try contesting from Guam. Naturally nobody wanted to use a call sign like JA8RWU/KH2 for a contest — it's too long. Short calls in a contest are always a definite plus. So a few of our Japanese friends came to Guam, sat for the test, passed it, and decided to apply for an Extra class Guam call sign, which they would use when they contested here. Since the FCC computer requires a Guam zip code for a Guam call sign, and since a U.S. license requires a U.S. address, we volunteered the use of our addresses for our visiting friends. They came to Guam, they brought tons of antennas, radios, and amplifiers, they contested. They did very well. They sweated a lot carrying antennas and amplifiers, but they really got on the air.

Since then, things have really changed.

First we had planeloads of amateurs coming to Guam from Japan to take the VE tests. Why, we couldn't figure out, because they never operated here. Just took the test, and went back home. Guam, like any of the other islands with 2x1 call signs, has 104 call signs for Extra class calls. Of the first half of the Guam extra class calls to be issued, AH2A through KH2Z (52), about seven of them were originally issued to Japanese amateurs, all of whom operated from Guam. Of the second half of the Guam extra class call signs NH2A through WH2Z (52), only 5 are issued to amateurs who are known here in Guam. The other 47, or 90%, are issued to Hams in Japan, in the U.S., and in Europe — to amateurs nobody in Guam knows. So it seems as if Guam call signs are disappearing into thin air. Why? Lots of reasons.

First, a poorly administered VE program. There never was a rule that you had to be a U.S. citizen to hold a U.S. Amateur Radio license. I can understand that, that's fair. Sometimes people who are not U.S. citizens live in the U.S., and they should not be denied a license because of citizenship. We have Hams on Guam who have lived here for many years who are not U.S. citizens but are active Hams. The only requirement to obtain a U.S. license is to have a U.S. address, after you have passed the test, of course. There SHOULD HAVE been a rule that to give a VE testing session for a U.S. license, you had to be on U.S. soil or at a U.S. military base or U.S. Embassy. Unfortunately, there never was. I can't speak for Europe, or South America, or anywhere else that this scam is being run, because I don't know the details. I am using the Guam scenario as I am familiar with what has happened — not because I think it was invented here.

Anyway, we don't have Japanese amateurs coming to Guam to take exams any more. They don't need to. They now have enough Extra class amateurs who live in Japan, and who have applied to be VEs (just fill out the form send it in) that they now can give the U.S. tests in Japan. Great idea, saves a lot of travel time and airline ticket money. There never was a rule that you had to be a U.S. citizen to be a VE either. But then there's the problem of the U.S. address for the 610 form, right ? No, not really. Just pull an address out of the air and make sure it has a Guam zip code — you need that for a Guam call. How about the Guam QSL Bureau's address? That's got to be a good one, let's use it!! Sure, we'll probably never get the license, but we'll just wait a few months, and then write the FCC and apply for a change of address — don't have to change the call anymore. Or how about we just rent a P.O. box on Guam and let everybody use the SAME address? Sooner or later somebody will be going back down there and they can clean out the box.

Now why, you might ask, would amateurs who live in Japan or Europe and who have no intention of ever going to Guam to operate want a Guam call sign? Two reasons. One, souvenir. Two, international radio passport. The U.S. has reciprocal operating agreements with lots more places than Japan does, but with a U.S. license; BINGO, you get the picture.

When amateurs came here from other places, took the test, got a call sign, and operated from here, it really didn't bother me. That's what Amateur Radio licenses and call signs are for — to operate on the radio. When they started obtaining Guam calls for souvenirs and passports, it started to get me a little upset.

And it's not just Guam. Take a stroll through an online call book server sometime and look at the KHØ calls and see how many you can find that are issued to the local amateurs.

The Vanity club call scam program

The plot thickens. The mud gets much deeper. Now anybody with a U.S. license can fill out a form, send it to the FCC and get a CLUB call sign. And as soon as that ugly club call sign appears on one of the numerous lists of issued calls on the internet, then the individual who holds the club call can apply for a VANITY call. I don't think there's anything wrong with a club call sign — for a real club. And I don't think there is anything wrong with VANITY calls, I already told you that. A few years ago we started another Amateur Radio club on Guam, and we were thinking about getting a club call sign. Why? So we could use it on field day. Our club is a DX club — we are DXers and contesters. Maybe one day we'll do a multi-single and use our club call sign, and naturally, we are just as vain as anyone else, so I wanted to pick a 'nice' call for our club to use. So off to the internet I went. What call, said I, would work well in a contest? Oops, that's right. ALL of the Extra class Guam calls are gone. Well, no problem, KH2x2 won't be so bad. What's a good one to pick ? Ahhh, I said, having just returned from a contest at KH7R (former station of KH6XX) — I know! KH2XX!

When the vanity program first was put into place, I read somewhere about an amateur who applied for 40 club call signs, and 40 vanity call signs. Where else would something like that happen? Well, I found out where else when I looked up KH2XX on the QRZ online database — KH2XX, The A Team, 279 Gardenia Ave., Latte Heights, Guam 96923.

Gee whiz, somebody else already has the call I had picked for our club. "The A Team." That's a weird name for a club. Sounds like somebody's been watching too much TV. Something else is strange, I thought. Why? Because I know the address. Many evenings during my bachelor days when I first came to Guam I had enjoyed the home cooked meals of Mrs. KG6DX at that very address. The call was issued two months prior to my looking it up, and the address belonged to my friend, KG6DX, who had moved away from Guam THREE YEARS ago. Were the ghosts of Amateur Radio's past applying for club call signs from KG6DX's old house? A little more investigating, with the use of the online call book showed that the ghost of radio's past not only had a club in Guam, but he has about ten or so OTHER club call signs from Hawaii, the U.S. mainland, and Alaska. And guess what? The ghost doesn't live on Guam, the ghost doesn't live in Hawaii, the ghost lives in Japan!

Some amateurs collect telegraph keys, some collect QSL cards and some collect stamps. And I guess some other Hams collect U.S. call signs. I run the KH2 QSL bureau, and I've never seen any cards for KH2XX in the incoming stuff, so I doubt the ghost has been doing much DXing with his new club call. He doesn't have any envelopes on file either, so I guess he isn't planning on doing much DXing with his new club call either. Why does the ghost need TEN U.S. club calls to go with his other U.S. calls? How many calls can you use at one time ?

So what's up here?

We must remember that the ghost is not a criminal. He has done nothing illegal. He has simply taken advantage of a very poorly implemented system. And he's not the Lone Ranger, by any means. Is the ghost someone who is worried that a crazy dictator in the Middle East will nuke the U.S. and destroy all the good call signs ? I don't think so. I think he's like the guy in California with 40 club calls — he's just a little nuts. But because of the ghost, legitimate Amateur Radio clubs on Guam, Hawaii, Alaska, and the U.S. mainland have fewer vanity call signs to choose from. Because of the ghost, legitimate U.S. amateurs who live on Guam, Hawaii, Alaska, and the U.S. mainland have fewer vanity call signs to chose from because the ghost is busy collecting club call signs and the FCC is so busy collecting vanity fees they aren't paying attention to what they are doing. The ghost has his hand in the candy jar, and the FCC has their back turned.

And as I said before, the ghost isn't the Lone Ranger. I've sent a bunch of licenses back to the FCC that came to the QSL bureau in Guam. What better

P.O. box number to use for a Guam license than the Guam QSL bureau? Just wait a while and then tell the FCC, "My license must have gotten lost in the mail, but I changed my address anyway, so send the new one here."

Another one of my favorites is the Guam Contest Club. All the members live in Japan, but they actually do come to Guam to contest, once in a while. They all have Guam call signs, but what the heck, they do operate here. But that wasn't good enough. They had to go get another Guam Extra class call for their club. Not because they needed it — it was just so easy to get. So one more kid will grow up on Guam and get involved in Amateur Radio, make it to extra class, and will have to take WH2ABCD for a call sign. I asked these guys one time if GUAM Hams could join the 'club.' All I got was silly grins.

The U.S. is probably the ONLY country in the world allowing Amateur Radio licenses to be passed out all over the world and allows Hams in any country, regardless of their location or citizenship, to administer tests for U.S. licenses. So what happens? People are people, so they abuse the system.

What can we do about it?

Let's start with the VE problem. I don't see any reason why a test for a U.S. amateur license should be conducted in Europe, or in Japan, or in the Philippines, unless it's conducted at a U.S. Embassy or at a U.S. military base so that U.S. citizens who are stationed in foreign countries can obtain a U.S. license, do you? Earlier I mentioned that some VE teams have been the subject of enforcement actions by the FCC because of questionable testing procedures. Does the FCC have any enforcement authority in Europe, Japan, or the Philippines against possible infractions of VE testing by foreign nationals? I seriously doubt it. Is there any reason why U.S. amateurs who volunteer as VEs should be subject to enforcement actions and foreign Hams with U.S. licenses administering tests in foreign countries should not? Yes, America is the land of the free and the home of the brave, but let's get realistic here. Can I take a driving test for my New Jersey drivers license in Tokyo? Can I take a test for my Japanese or my German Amateur Radio license on Guam?

So make a rule, FCC. VE tests for U.S. licenses must be given on U.S. soil. I wouldn't even think we would be stretching things too much if we made another rule that VEs had to be U.S. citizens. After all, we are talking about U.S. amateur licenses, right? The intention of the VE program was to save the FCC some money. Was it also the intention of the VE program to provide the world with souvenir U.S. call signs?

Every time I go to the bank, they ask me for my Social Security number. Every time I renew my driver's license they ask me for my SS number. The FCC is asking for SS numbers for commercial radio licenses; why are they not asking for SS numbers for amateur licenses? Don't 99% of the people who live in the U.S. (and who would operate an Amateur Radio in the U.S.) have a Social Security number ? Maybe I'm nuts, but seems to me they would have. Sure, for any rule, there is an exception. There may be foreign amateurs who work at an embassy in the U.S., there may be foreign amateurs who live and work in the U.S. and don't have a Social Security number. In that case, the FCC is going to have to come up with a system for verifying the fact that people REALLY are in the U.S. if they want a license. Couldn't be that many of them, I would imagine, and most people who are non-U.S. citizens and are living in the U.S., have some form of official U.S. government paperwork to prove it, like an Alien Registration card, a visa, etc.

And then there's the club call sign thing. How do we fix that ? Well, first we wake up the FCC. "Hey, FCC. You have a computer — USE IT!!" When the same guy with the same call and the same address applies for the sixth or seventh club call, doesn't that indicate there just might be something stinky going on? The rules say that in order to apply for a club call you must have a legitimate club with four members. Does the FCC ask for the list of members or anything to PROVE that the club is legitimate? Why, no. All amateurs are sterling, upstanding, honest people. No Ham would apply for a club call for a non-existent club, so they just give one to anybody who asks for one. Wonderful system. Might work in Utopia, but sure doesn't seem to work too good in the U.S. of A. Was the intention of the club call program to provide people with as many call signs as they would like to collect? Was the intention of the club call sign program to provide U.S. club calls to amateurs who live in Japan just in case they ever come to the U.S. to use them, or was it the intention of the club call program to provide legitimate Amateur Radio clubs in the U.S. with club calls? Or maybe the intention of the club call program was to see who would spend the most money on vanity calls?

Let's not forget reciprocal licenses. The FCC can get rid of them, save a few bucks. Nobody uses them anyway, they just get a U.S. license.

Now the ARRL is taking about reassigning 'unused' calls in the Pacific, like KH1, KH4 and KH5. Nobody ever goes there, so let's use them for Guam and Hawaii. That's a great idea, if it wasn't for the fact that the call sign collectors, the vanity scammers, and the foreign amateurs with lousy U.S. souvenir calls will scoop them up a whole lot faster than anybody on Guam or Hawaii can study and pass an Extra class exam.

I think the vanity call program, the VE testing program, and the club call program need just a bit of fine tuning. I've already written the ARRL and the FCC and told them about it. Since the ARRL came up with this goofy idea to give Guam KH1 calls, I'm fired up again and I'm going to keep writing. I'd suggest you do the same. I've been yelling about this for a long time. Nobody listens. Maybe if we all start yelling, somebody will listen. I hope so. If not, your grandkid's call sign might be W3AFRSTMX.

I haven't decided what to do about a club call for our (real) Amateur Radio club here on Guam. I think I'll wait until everything is gone and they start issuing 2x4 calls. Then I'll scoop up WH2HHHH. Great phonetics. Whiskey Hotel Two Hello Hello Hello Hello. We could drive people nuts with all those dits in a CW contest. Or, maybe I'll just wait for 2x7s and get WH2HAMCLUB — infinite possibilities with the Vanity Call Sign Program!

Peter's logbook

— A testament to the Amateur Radio spirit

Ken Neubeck, WB2AMU

The impact of the Amateur Radio hobby on any individual who participates in it can be measured in some rather concrete ways. One of the more obvious ways is through the station logbook where on-the-air activity is recorded for that particular Ham.

Though many amateurs have gone the route of computer logging methods, there is something that is down-to-earth and personal about a logbook that is filled out by the operator's own hand. There was one logbook that I came across recently that was of particular interest — a thirty-year-old ARRL 50-cent grey logbook that contained the on-the-air activities of Peter, WN2NOI, from Patchogue, Long Island. There are only four entries in the logbook; two CQ entries and two QSOs entered, one with WN2HSQ in May 1970 and one with WA2IMC in June 1970. All entries are written with a shaky hand, and they represent the entire on-the-air activities during the Amateur Radio career of WN2NOI, prior to his death in the same year. As one learns the details of this story as to how this operator got on the air, each scrawled letter spells volumes in testifying to Peter's Amateur Radio spirit.

Peter was afflicted with polio before the Salk vaccine was developed in the 1950s and Ham radio would be a great window to the world for him. He contracted polio when he went swimming in a pond with another boy. Both boys contracted polio but while the other boy recovered, Peter did not and his condition deteriorated over the years. His body became so weakened by the disease that he had to be confined to a wheelchair and he had limited use of his hands. He was confined to his house and received home tutoring to finish high school.

Peter had heard about the Amateur Radio hobby from neighbors and wanted to get his license and be on the air in the worst way. At the time in his neighborhood there were two Hams, Joe Nehm, WN2HSQ (now W1JN), and Mike St. Angelo, WA2IMC (now N2MS). They were alerted to Peter's situation through other people in the neighborhood and set out to be his Elmers in helping him achieve his quest of an Amateur Radio license. Peter was about ten years older than Joe and Mike and they were both in their final year of high school. He had asked them to help him get started on the air so he could enjoy a hobby that would help make the days go by easier for him. Peter had bought an old crystal-controlled Heathkit DX 40 from another neighbor (callsign not remembered) who also helped set up a forty-meter dipole.

Joe and Mike worked with Peter in pursuit of a Novice license in their spare time after high school. Peter studied the theory and was able to copy the required five words a minute. Mike administered the Novice test to Peter and he passed and within a month, he received his ticket with the callsign WN2NOI in early 1970. This was a major milestone in Peter's life as he had achieved his quest in becoming a Ham radio operator.

Unfortunately, Peter's physical condition was worsening. He was very weak. Nevertheless, he was able to make his first Amateur Radio QSO on 7.160 MHz with Joe, WN2HSQ, on CW. Joe was only three blocks away, so signals on both ends were easily 599. Peter's speed was slow and his fist was shaky. Despite the short distance, it was a major milestone for Peter as he got on the air! He called CQ on two different days prior to making a contact with Mike, WA2IMC. The time that passed between Peter's first QSO and second QSO was over a month, so one could see that Peter was only occasionally well enough to get on the air.

After Peter's QSO with Mike, his condition got to the point where he would have to have full time care in a nursing home. To add insult to injury, the administration at the nursing home would not let Peter take his DX 40 to the home, so he would be deprived of the Amateur Radio hobby in his final days. They gave some lame excuse about the radio taking up too much power (the nursing home claimed they had old wiring) for him to have a radio in the home, not even for listening. It seems the nursing profession would deny someone who is dying his last pleasure in life. Where is the comfort that should be given to the ill? Of course, the nursing home's argument was bogus and it points out the need for more effort in educating the public. In the fall of 1970, Peter died.

After his death, Peter's father offered the DX 40 to Joe and he bought it. He also received Peter's old log, which I saw years later in Joe's attic while he was cleaning out. It was poignant to see the four scrawled entries in the logbook that represented Peter's entire Amateur Radio career. Yet, a Ham radio career should not only be measured by the number of entries in a logbook but also the effort that it may have taken that particular Ham to get on the air. In viewing Peter's situation, it could be seen that his effort to get on the air was considerable.

All Hams can learn something from Peter's accomplishment and from his courage. There are many other cases like Peter, some of them documented, some of them not. Kudos should go to both the Ham and to the Elmers who help. There have been some documented cases in Amateur Radio magazines where the story is told in such a way that it can sometimes get to the point of self-congratulation. We need to guard against this and recognize that the art of Elmering goes with the territory of being an amateur and the real rewards are seen in the results.

Please be cognizant of those people who cannot get out of the house too easily and would benefit from this great hobby. Start off with a simple activity such as short wave listening on the Amateur Radio bands and move from there in the process of working towards a license. Wouldn't it be something if more people had the same spirit as Peter?

"Thanks" — *the correct way*

Charles Brumley, KB2E

Two of the many side benefits of working DX on the HF bands have been, for me, increased geographical knowledge, and gaining a tiny smattering of foreign languages.

Among my recent QSL cards "on the wall" are ones from Moldova, Guadeloupe, Ceuta, Gambia, and Suriname. Laugh if you will, but I was almost completely ignorant of where these places were until I worked them. I knew, for instance, Gambia is somewhere in Africa, but all these contacts sent me running for the atlas to pinpoint their locations. (I've seen the results of recent international geography tests in which many kids couldn't properly place North America on a map, so I don't feel too bad.)

But perhaps even more fun has been learning to say "thanks" in 17 languages. I bought a book — "*The International Dictionary, the Words You Need in 21 Languages*," by H.L.Ouseg. Three of the languages — Russian, Serbian, and Ukrainian, use the Cyrillic alphabet; I "don't want to go there" yet, as teenagers say. So, with English being the 21st language, my list of foreign languages totals 17.

Working CW, the fact I don't have to pronounce the words is a big plus. That's the good news. The bad news is that sometimes foreign amateurs are so pleased to hear a word in their own language they assume you speak it, and switch completely to their own language! I have invited this disaster by using more than "thanks" in French, and can usually muddle through a whole QSO in that language. But in other languages "thanks" is pretty much my limit.

So when I got fully "embraced" in Czech, and then Polish — Katie, bar the door! In the two cases when this happened, however, the two Hams had excellent English and bailed me out. The Czech ham also taught me "ahoj," a greeting which serves, I think, as both hello and goodbye.

The Polish amateur sent me scurrying mid-QSO to my book for the phrases "ate logo" (so long) and "boa noite" (good night.) Other times sending "obrigado" to Hams in Brazil hard-wired it into my head that Portuguese is the main language there.

Think for a moment how lucky we are that English is the universal language of Amateur Radio. When a foreign Ham apologizes to me for his poor English, I can always say with complete honesty his English is better than my ability in his language. And using a word or two in the other fellow's language often gives him the confidence to keep going, in English, beyond RST, QTH. and his name. I have never felt, "Oh, this guy's English is terrible."

I will admit to an occasional blunder, funny in hindsight, but embarrassing, too. Working a station in Slovenia, whose prefix was S57, I was "hearing" SH7, which would be Sweden. What the Slovenian amateur thought of repeated use of "tack" — Swedish for thanks — who knows? How long should it take for it to dawn on me that Ivan from Slovgeradec is, one wrong dit notwithstanding, not your average Swedish contact? (The time I convinced myself I was in QSO with a nearby visiting French amateur in Martini, QUE — instead of Martinique — well, I don't want to go there!) Who knows, maybe the Slovenian had been "tack-ed" before.

I'll probably make more blunders. One I worry about is mixing up countries in the Mid-East and sending a word in the language of my contact's enemies. If that happens, I hope I'm forgiven. In the meantime I'm going to keep at it.

My list for "thanks," coded by country prefix:

OKA-OLZ	CZECH: DEKUJI;DIKY AHOJ=BELLO
OUA-OZZ	DANISH: TAK
PAA-PIZ	DUTCH: DANKUPANK JE
OFA-OJZ	FINNISH: KIITOS
FAA-FZZ	FRENCH:MERCI
DAA-DRZ	GERMAN:DANKE
HAA-HAZ	HUNGARIAN: KOSZONOM
IAA-IZZ	ITALIAN: GRAZIE
9AA-9AZ	CROATIAN: HVALA
LAA-LNZ	NORWEGIAN: TAKK
SNA-SRZ	POLISH: DZIEKUJE
PPA-PYZ	PORTUGUESE: OBRIGADO
YOA-YRZ	RUMANIAN: MULTUMESC
OMA-OMZ	SLOVAK: D'AKUJEM
EAA-EHZ	SPANISH: GRACIAS
SAA-SMZ	SWEDISH: TACK
TAA-TCZ	TURKISH: TESEKKUR, EDERIM

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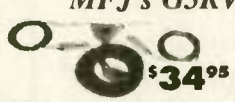

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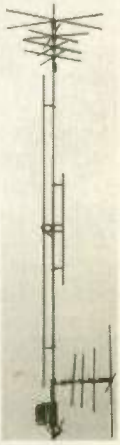

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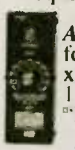

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My First Field Day

Ashley Guy, KF6SXE

Unlike the rest of the ***Worldradio*** staff I did not become involved with the magazine because of a background in Amateur Radio, but rather one in graphic design. I was persuaded to take the test in August of 1998 and was issued the call KF6SXE a month later. Despite a constant effort on Rick's part, I was very reluctant to become involved in Amateur Radio. What I needed was some hands on experience at Field Day.

It was my job to find us a location. My dad owns twenty acres across the street from ***Worldradio***'s previous Field Day site, located in Wilton, CA, and we were able to set up camp on his private airstrip. Care was taken to insure that any incoming airplanes would see us. Set up involved putting up several antennas, including a 20M dipole strung from a 50ft mast, and a canopy for our outdoor station. We ran two stations, one inside the RV on 20, 40 and 80 Meters, and the other outside on 6, 10 and 15 Meters.

Norm Brooks, K6FO, helping Ashley Guy, KF6SXE, polish his pile-up techniques.

I started off on Saturday with 15M and was able to make a number of contacts. Three hours into it our logging computer died. We managed to write down the contacts we had done and finished the event logging the old-fashioned way. We had other problems as well but I guess that's always to be expected on something like this. I finally gave up the station for a bit so my brother, Clayton Guy, KF6SXD, could give it a try.

Armond suggested I try 40M, and I'm glad he did. I found the "hunting" style of making the QSO to be a little intimidating initially due to the large number of operators on the band. I found a clear frequency and after just two calls of "CQ Field Day, CQ Field Day, Whiskey Romeo Six Whiskey Romeo," I had a contact, and another, and another. Soon my confidence was bolstered and I had no problems getting into the pile-ups.

Later in the evening Peter Onnigian, W6QEU, arrived and we finished construction of his balloon antenna. The antenna consisted of four elevated radials and a 1/2-wavelength vertical supported by a 4ft-diameter Helium weather balloon. This antenna was terrific. (Keep your eyes on the website for an upcoming story about this antenna!)

The operating schedule was made and I had the graveyard shift from 1-4:30a.m. Even though I was unable to get any sleep before my shift, I soon forgot about my fatique when I experienced the magic sounds of 40M in the evening. I heard voices from all over the East coast and was amazed at how clear I could hear them.

11:00 arrived quickly and we took everything down and cleaned up camp. Talk of next year's field day was already going on. I think we should have a Field Week! It was the most fun I've had in a long time.

After all is said and done, I am now more excited than ever about Ham radio and am already thinking about how to get more people involved. I plan on upgrading soon so I can participate in even more contests. I can't wait till Field Day 2000.

Glen Rudesill, KF6OBS, handles the logging while Rick McCusker, WF6O, works CW contacts.

Field Day at WR6WR

Rick McCusker, WF6O

Well, fellow amateurs, another Field Day has passed into the heat of the afternoon. But this year was better than previous years for the Worldradio Staff ARC.

We ventured out to Wilton, California, at almost the same location as last year. Due to terrain features, we weren't able to put up our 500 ft. "V-beam" this year. All we could muster was several dipoles and a Butternut vertical. We were able to add a new balloon-supported antenna on 40 and 80 Meters to the collection of antennas.

The newest feature of our efforts was the addition of our two newest Hams, Ashley, KF6SXE, and Clayton Guy, KF6SXD, to our efforts. We also added another station to go into the 2A category. These two young men, assisted by Armond Noble, N6WR, Glen Rudesill, KF6OBS, and Rick McCusker, WF6O, did quite a few hours on 10. 15 and 20 Meters. Rick did some CW on 20 and 15 Meters.

Armond, N6WR, Pete Onnigian, W6QEU, Ashley, KF6SXE and Rick, WF6O, ran up the score on 40 Meters SSB. John Minke, III, N6JM put in a couple of hours banging out CQ on 40 Meters CW.

Was it perfect? No, it wouldn't be Field Day unless some problems reared their ugly heads. Rick's computer died three hours into the effort. and the 20,

Pete Onnigian, W6QEU, perfecting his balloon-supported antenna.

15, and 10-meter station log was done the old fashioned way — on paper! (How many of you still do that???) Not only did his computer die, he made it 3/4's of the way to the site and remembered his power cord for the FT-847 was laying on the floor of the shack at home. But he made it and got the rig set up three minutes before the opening bell.

What was really impressive was the number of comments we received from our readers. Many of you recognized the call sign of WR6WR and you said, "Great magazine" or "I'm a Lifetime subscriber." All we can say is, Thank You, Thank You, Thank You for your positive feedback.

So now it's your turn. Send us your Field Day story! (Photographs, too!). We want to hear about your efforts. What went wrong? When we share our stories, we can all improve.

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Langkawi AS-058 holiday soirée

Johnny Melville, G3LIV

During the winter months of 1997 thoughts turned to holidays and where I could play radio at the same time. 1995 had seen two weeks in Cyprus with a TS 50 and a quarter-wave vertical for 20 Meters and it was great fun. Just grab your CEPT, ask the hotel if it's OK and away you go. Yes, it really is as easy as that.

However, thoughts on the Far East and places outside the CEPT license area seemed to draw my interest. In 1994 I vacationed in Thailand, Penang, and Bali but without a radio. This time I thought I'd go for it. Would it be Singapore, Thailand or Malaysia? A check with the XYL on dates and June was decided on, and mention of taking a rig (I have an FT900CAT) brought a favorable comment. I started in late December with letters to the authorities in 9V1-9M2 and the Radio Amateur Society of Thailand (no license authority listed in RSGB info).

As I had not read any magazine articles on obtaining a license for the Far East, various phone calls were made in the UK. Not a lot of information was gained from this avenue, until I managed to contact Ray Gerrard, G3NOM. He was a great help from day one.

Although I had not settled on which countries to visit, a quick look at the wanted island list in the IOTA Directory led me to Langkawi, AS-058 in Malaysia and Phuket, AS-053 in Thailand. This was where Ray really excelled. He had a spare copy of the Malaysian license application form. This was mailed to me and now the hunt started. I should state here that the application form did arrive from the Malaysian authorities but not until some time in February, taking about eight weeks or so. If you are only thinking about going, but have not decided on dates, get your request in for your application paperwork. I have been informed that it is possible to present the paperwork personally at the center and have it dealt with in a couple of days.

Langkawi comprises a group of 99 tropical islands lying off the north-western coast of Peninsular Malaysia. The main island is known as Pulau Langkawi. The exact position of the group is 05.5-06.5N 99-100E. For IOTA it's AS-058 Perlis/Kedah State Group. It is located north of the Island of Pinang and south of the island of Phuket in Thailand. This group of islands is blessed with an intriguing heritage of fabulous myths and legends of ogres and gigantic birds, warriors and fairy princesses, battles and romance. With a geological history dating back 500 million years, the islands contain unique rock formations that stir the imagination and baffle the mind.

Wouldn't any Ham be proud to hang this outstanding QSL card on the wall of the shack? It's one of our favorites.

The complete paperwork package required by the authorities consisted of the application form, full equipment information, serial numbers, power, modes, bands, copy of current UK license, copy of main passport pages, completion of wireless security declaration signed and witnessed by a solicitor. (This is a form of affidavit and requires a sworn statement with Bible in hand) You also need two character references (now you find out who your friends are) and a sketch of antennas to be used. All this has to be bundled up and sent to the authorities in KL.

Was this the first step by Malaysian officials to discourage the faint-hearted? Geordies are made of sterner stuff (Geordies is the local term for the inhabitance of Newcastle-upon-Tyne). At this point Ray saved the day once again. He told me he was going on the 9MØC expedition to Layang Layang and asked if would I like him to deal with my application while in KL enroute? Not one to look a gift horse in the mouth, his offer was immediately accepted and everything was mailed to his UK address.

It was now late January 1998 and the weeks went by at an alarming rate. A reply from 9V1 Singapore said, "We regret to inform you that we do not issue a license to foreigners to operate amateur station while they are in Singapore for a short period, one must be resident for a minimum of three months before making an application." I had inquired in my letter if it was permissible to land at customs with a rig in the bag. However this was not answered, so I ruled out Singapore.

I then received a letter from Thida, the General Secretary of the Thailand Radio Society in Bangkok. It wasn't good news, pointing out that, much like Singapore, a minimum period must be completed before a license would be issued. You also need a separate piece of paper to give you permission as to where you may transmit from. Thida also indicated that it was not in one's best interest to have equipment in your ownership without declaring it to customs. I was told you can leave it with them and recollect when leaving the country. I decided not to put this to the test.

At this time I received an e-mail from G3NOM to let me know that the Ma-

laysian license was OK, and I could plan ahead for 9M2/G3LIV from Langkawi AS-058. Now I had a problem, I was to land at KL, have four days to get over the near 24 hours travelling from Newcastle, then on to Langkawi for 10 days. No problem so far, however, how do I get to land in Phuket, Thailand with an FT900 in my flight bag and no license? I had also decided to break the trip home from Thailand by stopping for six days in Dubai. As I had made no inquires regarding Amateur Radio there, I did not know the lay of the land.

Ray, G3NOM, riding to the rescue again, happens to be the holder of the HB9DX FT900 owned by the RSGB IOTA bunch. Would I like to collect it in KL, take it to Langkawi, have my 10 days on the island and just return it, and go on my way to Phuket? What an excellent idea! This was agreed upon and because Ray was in the UK again the IOTA rig was temporarily located with Zainal Zalnudin, 9M2ZA, in KL. After a bit of e-mail shuffling, all of the details were arranged for the pickup. But there was one more small problem. In the heat of all the moving between London/Bangkok/ KL/ and the Spratly 9MØC location, Ray had left the receipt for my successful application for 9M2 license in his Bangkok flat and he was in the UK.

My original hope had been that some weeks before I was to fly out, the license would be mailed from the authorities to my home QTH. I e-mailed the office handling the license explaining that the receipt was in Bangkok and I had no way of getting it to confirm the receipt number and could they indicate that the license would be dispatched in due course? Three weeks went by with no reply. I then faxed a copy of the e-mail with an urgent heading, but still no reply and I was leaving in five days!

Ray remained quite calm during this period (indicating his vast experience in these matters) and pointed out to me that he never really expected a reply, and in a very cool manner suggested that I just call at the office and pick it up. So that was the decision as I left UK. I thought I should pick up the paperwork before I got a taxi to Zainal for the rig. The taxi dropped me off at the office, I gave my name to the young lady behind the counter, expecting a list of questions. All she said was, "Yes, Mr. Melvin, license for Langkawi. Have a nice holiday," and handed me an envelope.

I was back on the pavement in less than five minutes with my LICENSE. I hopped into a very cheap taxi and returned to my hotel, totally forgetting I had intended to purchase a number of application forms to be located with the RSGB so as to shorten the waiting period for pilgrims who may follow in my footsteps.

Johnny Melville, 9M2/G3LIV, knocking out some CW contacts.

I made a quick phone call to 9M2ZA and off we went in a taxi to pick up the Yaesu FT900AT and other bits and pieces. His home was found with no problem. It was very nice with a mass of jungle-type greenery around it and a mast at about 20 meters with a Tribander on top.

Zainal and I had exchanged some e-mails and one surprise that came up 10 days before I left was that there was no power supply located with the rig. I had a switching power supply so I took it with me. Keith Kerr, GM4YXI, had been using the rig the previous month and had left 25 meters of coax with a PL259 on one end.

The antennas I was taking needed double-ended PL259 cable so it was necessary for me to carry the tools to add the connector. In the layover I had in 5B4 I had devised a quarter-wave ground plane for 20 Meters. This antenna broke down into 28-inch lengths, which fit diagonally in my suit case. I had also made a dual band 20/17-meter dipole. While making this I had no luck getting standard figure 8 cable to work as the elements. As soon as I made the dual dipole out of 300-ohm black ladder line it worked as I had expected and I could switch between either band with under 2.1 SWR across both bands with just the one coax feed. This became my main antenna at Langkawi. Because of the heavy rainfall in the wet season the roofs tend to extend over the balconies. This did not allow me to erect the vertical from either balcony during my stay.

I had written to the hotel prior to arriving and mentioned my requirements. You know the standard ones; a room in the upper floors with access to the roof, as well as palm trees about 60 feet high, 40 feet from my balcony and 50 feet apart, in the clear with a member of the

Johnny and Nerio, HSØ/IK4MRH, finally had the opportunity to get together at Nerio's QTH in Thailand.

staff who is trained as a steeplejack (or even jill.) To my surprise, they had located me in a suite of rooms with two balconies at no extra charge. There were trees outside which allowed me to locate the dipole in a flat top position. I found after some playing around that I was doing better when it was situated as an inverted V.

Operating in this area of the world seemed totally different to my previous experiences. In my location there was virtually no propagation during the day. The 20/17/15-meter bands were not useable until around 2200 local time, eight hours ahead of UTC. 80 and 40 Meters were just a blur of static. While I was in 5B4, I just had to drop the key and within minutes I would have a pileup calling. Now it seemed to be different. Conditions were pretty poor for the duration of the stay.

I was to be there 10 nights. The first day was spent unpacking. Three of the next few days had electrical storms from late evening to early morning and it would have been a waste of time to even fire the rig up. It was also noted that the power voltage was obviously below UK standards and my power supply would only power the FT900 to about 60 Watts before closing down. Most of the operating was after 2200, when the band had been open for about 45 minutes. Then the band would just die with only one or two stations audible, then after an hour or so come to life again. Lots of CQs did not seem to attract a lot of interest and this from 9M2 in AS-058.

Over the period of operation some 800 contacts were made, my key speed went up, as did my direct logging into the logbook. My wife had insisted that I take at least one extra pair of socks and underpants in my suitcase, so I didn't have room to take a computer for logging.

Most stations were in Europe, some Gs and the odd W but lots of JAs and the like. Interestingly enough a W6 or 7 would call with a good signal and I thought, "OK now for a W pileup" but no luck. There would be two or three then no more, yet I was getting good reports. I had a number of QSOs with John GM4DKO/DU3. He was working out there for 18 months and over the days I could hear him calling CQ and not getting many takers. It made me feel better, hi. The first G to be worked was G3JDT followed by G3LVP, but Gs counted for only about 2% of the contacts.

It was nice to be called by a KH2 and an XE, both all-time new ones for me. Pity they don't count for my G DXCC.

The last night was packup time so no operating, we were leaving at 0330 for the return flight to KL. As my arrival there was in the middle of the rush hour and I could not make it to Zainal's to return the rig, he agreed to come to the airport.

We were now off to Phuket in Thailand — no rig, nice island, and my room was over a sea water lagoon which was crying out for an antenna. But no license! I had a few weeks prior worked Nerio HSØ/IK4MRH on 15-meter SSB and had arranged to meet him while on the island. A call to him resulted in him picking us up, and heading for the hills where his home is situated. Nerio is a big, friendly Italian gentleman. There is a nice 55-foot tower with a 4-element beam on the top. He runs a TS-850 which looks quite old but it turns out that the problem is condensation on the metalwork which rusts very quickly. One thing that was obvious was the hand-engraved customs numbers spread right across the top of the front panel. He was running a linear amplifier until quite recently. He had left it on by mistake on 40 where it was picked up by the audio amp in the local mosque. The authorities were at his QTH the next day. The amplifier is now in the bedroom closet. Better safe than sorry is the motto. Nerio mentioned that there were only 100 HF licenses in Thailand. The visit was another welcoming side to Amateur Radio.

Would I do it again? Of course I would! It's unbelievable the thrill when the world wants YOU, an ordinary G. If you are interested in trying to operate from Malaysia, the address for the licensing authority is:

Jabatan Telekomunikasi Malaysia, Kementerian Tenaga, Telekom Dan Pos, Wisma Damansara, Jalan Semantan, 50668 Kuala Lumpur; Tel: 603-2556687; Fax: 603-2530508; E-mail: jtmhq@tm.net.my.

Ask for form number CPC-1-05-01. License will only be allocated for three months and cost is about $5.00.

There is also an office in Pinang, Jabatan Telekom Malaysia, 1st floor, Bangunan Tuanhu Syed Putra, Leboh Downing, 10300 Pulau Pinang; Tel: 04-2611987.

One final final — thank you Ray, G3NOM, without whose help this trip would not have been possible. Thanks to Yaesu for sponsoring my QSL cards and supplying the logs, may their valued input to IOTA continue. Good luck and give it a try — it's great fun.

Worldradio

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A trilogy J. R. R. Tolken would envy. *Elbert Weinstein*

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The little things

Steve Seegmiller, AC6OJ

Amazing how it's the little things that have such a big impact on the path we choose to follow.

I made a decision to put a dual band radio in my car, rather than carry the HT on occasion, as I have been doing. Although some of you are quite gifted and would put the radio in yourself, I decided to seek out the skills of an experienced installer.

My first action was to drive about 45 miles to the closest Ham radio store. I arrived to find all three sales people busy. No problem, I'll look around. One finished a private conversation with her friend and inquired whether she might be of help. I told her of my decision to buy a radio and that I was there to discuss the installation.

Truth was, I was driving a rental, as my car was in the shop. I wanted to get a picture in my mind of how and where the radio would be installed, think about it, then come back in a week or so and do it.

She didn't have an answer and took me to another salesperson. He didn't have an answer, either, and said I should take it to someone who knew what he was doing.

Although this was a good answer, it did me no good. Neither person offered any names of people to call. It was as if I had entered a private club and neither wanted to tell me anything else until I was accepted, so I went home. Two days later, I called one of ***Worldradio***'s advertisers and ordered the radio. As long as the first people weren't interested in helping, I wasn't interested in buying. A little thing, subtley not making a person feel welcome cost them a sale, and I wasted a couple of hours driving over and back.

Now let's go back a few months, to a date shortly after arriving in my new community.

But first you should know, I'm grateful and sympathize with the people responsible for the numerous repeaters around our country. Thankfully, they have rather extraordinary commitments to invisible facilitators. In times of emergency, these caretakers help the world come together.

So I figured I'd join the local Amateur Radio Club and support a repeater with my dues. Finding other amateurs was easy. Finding their meeting site was easy. Finding a seat wasn't easy. This club had wonderful attendance, maybe 75 people. It looked like I had found the right club.

The meeting started nicely enough with minutes and all that stuff. Later it was announced that some board members had quit and then another board member stood and announced she was resigning. From there on, the meeting was a waste of my time. Finally I wrote my call sign on a new business card and gave it to the person sitting next to me. I told him I was interested in joining, and that I was a volunteer examiner willing to help with testing once in a while.

Several months have gone by and no one has called. Of course this is a little thing.

I have been busy in my work and in the other organizations I've joined. I chose to join the others because of my business and because their members made sure I felt welcome. The contrast of feeling welcome and being ignored has been most interesting.

Yes, I could have asked for referrals to qualified installers. Yes, I could have lingered in conversation. But the fact is, I didn't.

Yes, I could have called the club president the day after the meeting and repeated the willingness to join. Yes, my card might have been lost. Yes, I could have gone to other meetings. But the fact is, I didn't.

I would hope each of you remembers that the new guy/gal in your store or at your meeting just might be interested. Some of us are quite busy in our lives and put off returning to places we don't feel welcome.

O.K., so where is the upside, the redemption, the salvation? I've got to tell you, I'm not sure, but it's obvious the store lost a sale and that is not recoverable. By the time you read this, my infamous call sign will have been heard on local repeaters. In time I'll be meeting other Hams and with that will come friendships.

Isn't Amateur Radio about friendships; building friends and relationships with people all around the world and around the community? Isn't it about helping people when cell phones don't function? Isn't it about filling in the gaps to connect the world? Soon I will close the gap with one of the local clubs, but not with the store. Little things, but real.

Club call sign abuse

The July issue of ***Worldradio*** and author Rick McCusker, WF6O, rightly pointed out there may be some abuses in the club call sign program administrated by the FCC. I also have experience with a person who, under the vanity call program, was apparently determined to lock up every available Extra class format U.S. call with a "JR" suffix, (along with several others), doing so under the guise of a club. When we had occasion to meet, he complained to me that I had "his" call!

But the ***Worldradio*** coverage on this issue lacks balance in not citing instances where it may be appropriate for a legitimate club to hold multiple calls. I am a member of such an organization. We operate a linked packet system with user ports serving a large geographic area. Anyone who uses Kantronics TNCs knows they use multiple call sign iterations for functions such as mailbox, node, etc. Units in networking node operation use even more. Applying a personal call sign to those units could create call sign conflicts in the network when the holder of that call is actively on the air, so a club call for each node site seemed to be the perfect solution and it has worked well.

Likewise, operators of linked repeater systems may find it useful to have unique club calls issued for those installations. In fact, the FCC issued unique repeater calls several years ago. What was a good idea then remains a good idea now.

Finally, APRS packet digipeaters are a worthy club project and again, a good application for club calls, particularly when multiple digis are constructed. APRS network operations tend to occur on the same frequency in the U.S. and Canada.

There are two sides to every story. This letter is an attempt to defuse those who may be quick to condemn any legitimate club that holds more than one call sign.

Jeff Reinhardt, AA6JR
Aoura Hills, CA

(Ed. Well said, Jeff. I agree with you on your views that multiple club calls may be necessary for some functions in Amateur Radio. Many, many clubs serve a legitimate function using multiple calls, and they do it well. But there are those who abuse the system, and use it to their own advantage. The purpose of my actions and story were to draw attention to those few actively engaged in abusing the club call sign system, similar to the individual who accused you of having "his" call. Those clubs that cannot show a legitimate purpose for having multiple calls should not be allowed to keep them. — WF6O)

Antenna confusion

I read with great interest the article in your April 1999 issue written by Mr. Walter Maxwell, W2DU, entitled, *"Antenna confusion clarified"* Mr. Maxwell's article was written in response to the following statements: *"Antenna VSWR does reduce antenna gain. No question. If you feed an antenna with a 20:1 VSWR you will give up 7.41 dB of radiated power. VSWR results in a mismatch loss regardless of cable attenuation."* It was I who made these statements. They were made in June 1998 on the Towertalk reflector. My comments were written in response to a statement in which someone said that there would be no difference in power delivered to an antenna with a VSWR of 20.0:1 when compared to an antenna with a VSWR of 1.0:1.

My statements above regarding mismatch loss and those made by Walter Maxwell in his article are both correct, when all of our assumptions are clearly stated. Walt had the opportunity to state his assumptions in his article. I would like the opportunity to state mine.

My statements were made based upon my assumption that both antennas had the same level of forward or incident power arriving at their input terminals. This assumption was based upon my experience with certain military broadband HF transmitters where all reflected power is dissipated in a passive network. In these systems, there is generally no re-reflection mechanism to develop increased forward power as the antenna VSWR increases. With these transmitters, reflected power up to a level that would be created with a 3.0:1 — 3.5:1 VSWR can be safely dissipated. Generally, these transmitters reduce output power as VSWR increases and shut down completely at some point over a 3.0:1 VSWR. The difference in power delivered to antennas with differing VSWR is a direct function of the antenna's mismatch loss. With equivalent forward or incident power arriving at the antenna, an antenna with a 20:1 VSWR would radiate 7.41 dB less total power than an antenna with a 1.0:1 VSWR (assuming both antennas have equivalent radiation efficiency, etc.). It was clearly a mistake on my part to generalize this situation for Amateur Radio. It is also a mistake to generalize the case of an Amateur Radio communications situation.

Considering mismatch loss and reflection gain, I will state that it is incorrect to make the general statement that reflection gain mitigates or eliminates mismatch loss. Mismatch loss can always be used to quantify the amount of power delivered to an antenna as a function of the forward power

Letters to the Editor

arriving at the antenna terminals Reflection gain is a term that is used to describe the mechanism where the forward power delivered into a transmission line is increased due to the multiple reflection occuring at the output of a tuner, for example.

The total steady state power delivered to any antenna is simply a result of the total forward power arriving at the antenna terminals. In all cases, the amount of total power delivered to the antenna is still a function of the antenna's VSWR mismatch loss. In all practical situations, the total power delivered to an antenna can be found from the total power at the input to the transmission line connecting the antenna. The total power delivered to the antenna will be equal to the total forward power at the input to the transmission line minus the losses due to the one-way matched cable attenuation and the antenna's VSWR mismatch loss. In all practical situations, where there are always tuner and transmission line losses, more power will be delivered to an antenna with a 1.0:1 VSWR than to an antenna with a VSWR greater than 1.0:1.

Dr. Steven R. Best, VE9SRB

Thanks for the free copy

I just received my unsolicited free sample copy of ***Worldradio***. I'm subscribing after only reading half of the magazine or less! Reading your magazine is like a conversation with an old friend, a real pleasure! I just wish that I had seen your magazine sooner; I've missed a lot of good reading. Thanks for the sample copy!

Brad Witte, N9EHK
Auburn, IN

(Ed. — Such a nice letter, Brad. Thanks for becoming part of the **Worldradio** *family. And by now you should be enjoying the previous 12 issues I sent to you.)*

More on Quartzsite

I would like to add a few notes to Les Cobb's (W6TEE) two articles in the June ***Worldradio***. He barely scratched the surface on Amateur Radio activities in Quartzsite, AZ. (I spend about four months each winter there). In the past, we have used 146.52 as a full time circuit during the main part of the season and we have a nightly net on that frequency. My log shows 188 amateurs checked in one night in February 1997 and another 196 checked in one night in February 1998. It made for a long net on those nights, but it's part of the fun. Of course, the numbers were few in November, but increased until the peak in February and then tapered off. (I would be remiss if I failed to mention that the main shopping and activity area is approximately two miles long and a mile wide, so there's something for everyone).

A group of us formed the Quartzsite Repeater Association this past winter. We purchased a new repeater, and it's up and running on 145.500 MHz. It will be monitored in addition to 146.52 simplex. The auto-patch has standard * and #, a good thing for those needing emergency services. (No PL required).

The big show Pow-Wow, held the first week in February for many years will be held the last week in January next winter.

Hank Long, K7UOM
Grand Junction, CO

Proud to be a Ham

I have heard and seen many opinions both for and against being an Amateur Radio operator. I just want to say that I am proud to be a Ham! I wanted to chat with the late Barry Goldwater, K7UGA and King Hussein, JY1, but never got the opportunity to do so. Having been a Ham for 20 years, I spent the first several years on 2 Meters and HF CW. I have made lifelong friends on both and kept a CW schedule for at least 12 years with a friend I met on 2 Meters.

We need to introduce the fun and fascination of Amateur Radio to our children. When I was twelve years old, the fact that I could hear stations from around the world amazed me, much less chat with

other Hams on a dipole and a couple of hundred watts. In high school, I met a man who helped make my dreams come true. He was not only my teacher, and Elmer, but my friend as well.

While "surfing the net" I saw two things that saddened me deeply — a publication of nearly 40 years and the Amateur Radio station at the U.S. Capital have closed their doors. It was suggested that the internet has something to do with the decline in people getting their licenses, and it's probably true. I see the internet as an extension of the Amateur Radio hobby. One can find information about clubs, neighborhood Hams, shortwave broadcast stations and more. I believe our society has become accustomed to the fast pace of life and instant gratification. We are no longer willing to work on things that take up our valuable time.

Recently, my HF dipole started giving me high SWR. I am not able to repair or replace it by myself. Getting help is difficult these days, so I sit and listen until help is available.

A friend and I co-own the local 440 MHz repeater, but it's not used much. I guess cellular phones have replaced free autopatches for good.

A few years ago, our club tried to convince the local authorities of our usefulness in large disasters, but they weren't interested. I belonged to the local Red Cross chapter to assist if their "normal" mode of communications went down — our Hams seldom got a chance to demonstrate our communications capabilities.

I challenge the Amateur Radio operators worldwide — try to make a difference. Try to introduce Amateur Radio in the grade schools and high schools. Try to become involved in your communities ARES and Skywarn. Offer your services to the local police, EMS, Red Cross, etc. If your child shows an interest in your radio hobby, share the fun with them. Become a volunteer or Elmer to those people who express and interest in radio, whether it be the 2-meter or HF rig in the car. Whenever someone asks, "What's that radio?" be prepared to explain Amateur Radio to them.

Teach good operating procedures, and practice what you preach. Let's expand our quality as well as our quantity of new and existing hams. Teach the art of homebrewing or kit building to new Hams. A lot of people can't afford a new radio after obtaining their license. Building a kit, especially a CW transceiver may be just the thing to a kid on a budget trying to get on the air.

If we all operate with respect, consideration and good will toward our fellow operators, the bands that we operate on will be more enjoyable to use.

Remember, cellular telephones use repeaters and the internet uses telephone lines and electricty. If power and telephone lines go out, cellular telephones can't handle the overload of users. Our radios can operate in almost any emergency situation

Lee Groce, N4AAD
Yadkinville, NC

QSL Comments

Your comments in the July Editor's Log about QSLing really hit home. Although I have attained a few DX awards, it never ceases to amaze me why some operators will NOT QSL, even when SASEs, IRCs and greenstamps are sent. Nor will they reply via the bureau. Just one example I have over 220 countries confirmed, but I can't buy a card from Algeria even though I have worked several stations there. My cards were all sent with IRCs and/or greenstamps. I have also tried the bureau and alternate addresses in other countries given by the operators. Some of these stations are well-known and have been worked many times over the last decade. So far nothing from 7X-land has found my mailbox.

Another example: A few years ago, when my two sons were still preteen, I elmered both of them into getting Tech-Plus tickets. Both quickly learned the code with no problems. Once licensed, one of them, Michael, KE4UKT, spent a weekend working a 10-meter contest, during lousy band conditions. He managed to work about a half dozen "new" states for him. The next day, he dutifully sent out his QSL cards, all with SASEs. It's three years later and he is still waiting for a single reply. To make matters worse, he has hardly touched the HF rig since saying, "It isn't worth the bother trying to work DX when no one will send him a QSL card." This is a truly horrible way to try to encourage our youth to get involved in Amateur Radio.

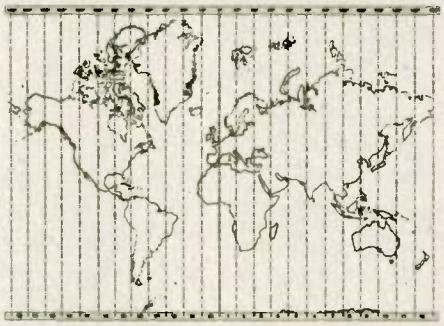
It is difficult for me to imagine why some active operators just will not QSL at all, especially when they are provided with SASEs. If someone can afford to buy a Ham rig, he can certainly afford to buy some inexpensive QSL cards.

Bottom line: It would be nice to see a published listing of chronic "Non-QSLers" published so people wouldn't waste their time sending these folks cards, SASEs, greenstamps, etc. But then again, I guess that would never happen due to possible legal issues.

So, what do we do?

I just keep trying. Maybe someday I will be able to add Algeria to my "worked" list.

Tom Mulvaney, KR4BD
Lexington, KY



Contact All Time Zones

To help commemorate 25 years of ***Worldradio,*** we announced an award known as "Contact All Time Zones" (CATZ).

• Rules

The start date for valid contacts is 01 July 1996 at 0000Z.

The world is divided into 24 time zones. Each time zone is 15 degrees wide. For the sake of this award, half-hourly zones and out-of-zone artificial time changes will be ignored.

This award is based on the true 15 degrees each, world map 24 time zones.

The applying station must have one (two-way) contact on Amateur Radio allocated frequencies with a station in each of the world's 24 time zones. Contact with one's own nation does not count.

The operator applying for the award must have made all 24 contacts from a location within the same country.

The award may be endorsed as the applicant wishes in regard to band and/or modes.

• Application

The applying radio operator must be in possession of 24 QSL cards, one from each of the time zones.

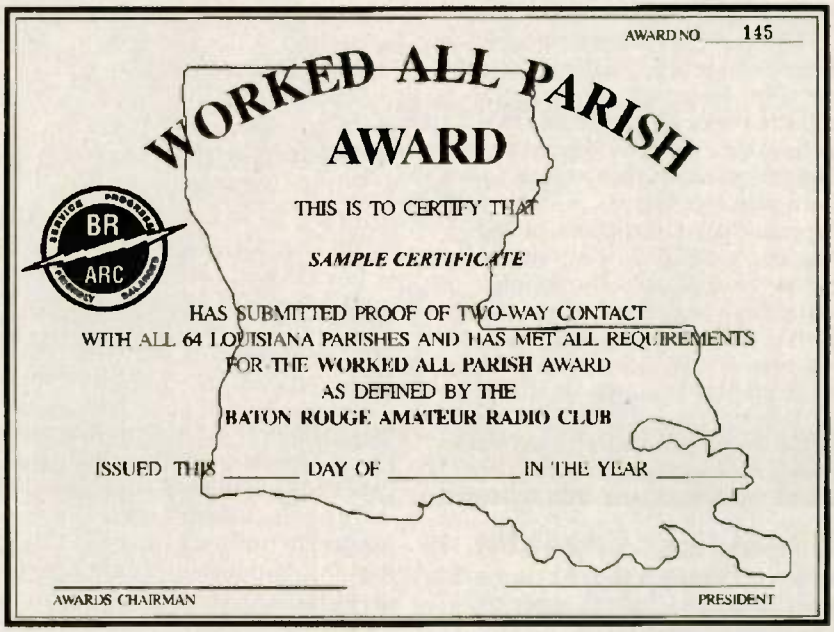
A list shall be made showing each contact's call sign, date, band, mode and the time zone starting with the prime meridian (0°) and moving eastward.

There is a fee of $5 to cover the cost and mailing of the 8 x 10 certificate (mailed unfolded).

It is not necessary to mail your QSL cards to ***Worldradio.*** Send a statement signed by two other licensed radio amateurs (General Class or above) that they have inspected and verified the required QSL cards.

Address applications to CATZ Award, ***Worldradio,*** 2120 28th St., Sacramento, CA 95818.

Recipients of the CATZ award will be announced in the ***Worldradio*** DX column.



Worked All Parishes Award

The Baton Rouge, Louisiana ARC is sponsoring a new award for those who work all 64 parishes in the state of Louisiana. Contacts can be made on 160-10 Meters, any mode. Only direct contacts will be accepted. No contacts made via repeater will be accepted; transponded satellite contacts will be accepted. Only contacts made on or after 01 September 1996 will count for this award.

Applicants must submit proof of contacts with all 64 parishes. Photocopies of QSL cards are acceptable as long as they are legible and there is no evidence of alteration. QSLs or photocopies must show the call sign of the station contacted, the parish where the contact was made, the date and time of the contact, and the band and emission used to make the contact. Cards will not be returned unless sufficient postage is included with the application.

All contacts must be made by the same individual using call signs assigned to him/her. If multiple call signs have been used, the applicant should state these and declare they were all assigned to him/her.

A $2 fee should be submitted with the application to cover the cost of mailing the certificate. Additional fees for the return postage of QSL cards should be included if return of the QSL cards is desired. These fees should be submitted in the form of check or money order only. Stamps will not be accepted; cash is discouraged. Decisions of the Awards committee will be final.

The Baton Rouge ARC Awards Committee reserves the right to modify these rules as necessary to more efficiently administer the award.

Applications may be sent to: Baton Rouge ARC, P.O. Box 4004, Baton Rouge, LA 70821.

Silent Keys

RAY PETIT, W7GHM

CLOVER inventor Ray Petit, W7GHM, died 13 June 1999 at his home in Oak Harbor, Washington. According to his close friend Ed Bixby, AKØX, Petit suffered a stroke in early March caused by a brain tumor that left him mostly paralyzed. Continuing growth of the tumor resulted in additional strokes that finally took his life.

Petit was well-known and respected within the Amateur Radio digital community. "Ray was a real gentleman and he will be missed," said *QST* Digital Dimensions Editor Stan Horzepa, WA1LOU. Petit had authored several articles for *QST* and *QEX* on CLOVER and coherent CW, among other topics. — *AKØX, WA1LOU, ARRL Letter*

ROBERT A. PAYNE, K1BFG

Retired Air Force Brigadier General Robert A. Payne, K1BFG, formerly of Suffield, Connecticut, died 30 April. A B-17 bomber pilot during World War II, Payne was shot down over Germany and spent two years as a prisoner of war. He later received the Air Medal, the Purple Heart, and other honors. Payne later served as base commander at Westover Air Force Base in Massachusetts in 1974. He later was employed in the Connecticut Department of Education as an education specialist. He was a member of the ARRL, QCWA, and several local clubs. — *W1DGJ, ARRL Letter*

DONALD STONER, W6TNS

The man who conceived Project OSCAR, Don Stoner, W6TNS, of Clearwater, Florida died 04 May. He was 67. Stoner had been in ill health for some time.

In 1960, Stoner, then living in Alta Loma, California, was the idea man behind Project OSCAR. Stoner outlined his concepts for an Amateur Radio space program in the February 1961 issue of *QST*. In his prophetic article, Stoner envisioned a two-phase project, the first to launch an orbiting VHF beacon transmitter into space, the second to launch an "orbital repeater." OSCAR 1 was launched 12 December 1961.

More recently, Stoner had become a guru for amateurs battling restrictive covenants to install antennas.

A Flint, MI, native, Stoner developed an early interest in electronics, according to longtime friend Merle Parten, K6DC. Stoner's father, Lew, was W8IMS. Don Stoner went on to enjoy financial success in the commercial world. He manufactured CB transceivers and later founded a company that developed systems to back up bank records and to telephone overdue accounts. He retired in 1989.

He served in several editorial capacities, including VHF editor, Novice editor, surplus columnist and semiconductor columnist — and as founder of the unsuccessful National Amateur Radio Association. Stoner also wrote the "In Theory" column in *CQ VHF* magazine in 1996 and 1997. — *ARRL Letter*

Special Events

HIRAM PERCY MAXIM, W1AW

The Antietam Radio Association will operate station W3CWC as a special event station to commemorate the 130th Anniversary of the Birth of ARRL Founder and Noted Inventor "Hiram Percy Maxim W1AW". W3CWC will operate 1600-0200Z from 28 August 1999-02 September 1999 close to the following suggested frequencies: 3.905, 7.230, 7.035, 14.250, 28.450, and 147.090 MHz. A colorful certificate will be offered to those who QSO W3CWC's special event and send QSL and Large S.A.S.E. to the Antietam Radio Association, P.O. Box 52, Hagerstown, MD 21740-0052 by a mailing deadline of 30 September 1999.

RADIOFESTXVIII, 04-07

Antique Radio Club of Illinois is having RadioFest XVIII, 04-07 August at Elgin Plaza Hotel in Elgin, Illinois. A vintage station will operate AM phone and SSB on 40, 20, 15 and 10-meter bands. Send a reception report along with a large SASE to ARCI, P.O. Box 1139, LaGrange, IL 60526 for a QSL certificate. For more info: http://members.aol.com/arci31280.arci.htm, or contact Art Bilski at 630/739-1060.

STEAM POWER

Kishwaukee ARC will be on the air as W9S commemorating the 43rd Northern Illinois Steam Power Show from 1300U 12 August to 1900U 15 August. Suggested frequencies are 7.108(cw), 7.235, 14.250, 28.390 MHz. For a certificate, send a QSL and 9 x 12 SASE to Bob Yurs, W9ICU, P.O. Box 341, Sycamore, IL 60178. email: w9icu@arrl.net Web: www.qsl.net/wa9cjn

MT. DAVIS EXPEDITION

The Somerset County ARC will hold its annual expedition to Mt. Davis, the highest point in Pennsylvania. They will operate with the club call K3SMT on the general portions of the 40 and 20-meter bands. Some CW operation is also possible. Operations will be 2100 Saturday, 14 August - 2300 Sunday, 15 August. Certificates will be available for a SASE mailed to K3SMT, 708 Casselman St., Confluence, PA 15424.

Station Appearance

*Send **Worldradio** a picture of your shack and the staff will choose a winner to receive a free one-year subscription to **Worldradio**! Stations will be judged by neatness (wires tucked away, etc.) and accessibility of equipment. Monetary value of equipment is not a consideration.*

John E. Gercken, KA9EPO

I am submitting this photo for the Station Appearance. I have been an amateur for 18 years. I started out SWLing in 1971 with an old Knight Kit regenerative receiver my brother built. As I learned more about radio through listening to the international broadcasters, I experimented with a lot of antennas and receivers while racking up my country and QSL count.

When the CB boom hit, I got into it pretty heavily (without illegal power) and learned a lot more about antennas, SWR, modulation and such. I got out of CB when I heard about Amateur Radio from my good friend, Earl Hendrickson, KU9T, of Gibson City, IL. He invited me to take a radio course and I passed the Novice test in May, 1979. I upgraded to General in 1983, and then to Advanced class in August 1986.

My station consists of a Kenwood TS-430S with the AT-250 automatic antenna tuner. HF antennas are a G5RV for 80-10M and a quarter-wave end-fed inverted-L for 160 Meters. Aids for CW work include a Daiwa AF-606K All Mode Active Filter (which I really like), an MFJ-484C Grandmaster Memory Keyer, and a Vibroplex Iambic Key. To aid in pulling out weak signals, I have the Palomar Transceiver Preamplifier. Under the 2-meter rig (Kenwood TM-241A) is a control box for switching between packet and voice at the flip of a switch. Below that, I have another control box for switching between modes used with the PK-232MBX and voice or CW. One switch toggles between feeding the mike input for voice or data, and the other switch toggles between using the computer and the key for CW. Also employed in the same box is a circuit which lets me record both sides of a QSO. It employs the use of the internal SPDT relay in the HF rig's Remote DIN port. To the right of the HF rig is a Heathkit HO-10 monitor scope which aids in tuning in RTTY signals.

The mike I use for HF is a Heil BM-10. I have a "remote box" under my desktop fastened to the sidewall via magnetic strips connected to the main control box so I don't have a bunch of wires laying on the desktop. The headset connects into this box and has provision for an extra set of headphones in case someone wants to help do logging during a contest. This setup makes for a lot less clutter and easier operation.

Beside the 2-meter rig, I have a 2-meter Tokyo Hy-Power 45/85 watt amplifier connected to a Larsen groundplane and/or a 4-element yagi.

I am also a McLean County ESDA member, and to keep on top of events in that area, I have a Radio Shack PRO-2030 80-channel scanner. On top of the disk file box is a weather monitor by Davis Instruments.

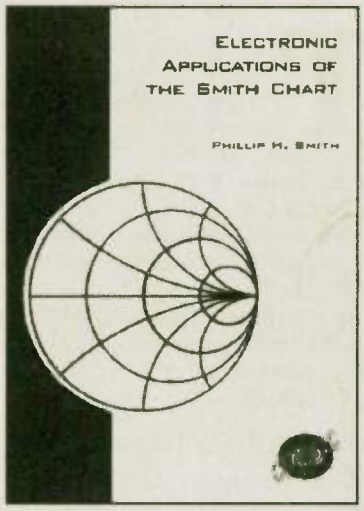
Last, but certainly not least is my AST Advantage 824 Pentium computer which I received from my wonderful wife, Barb. (I think she felt sorry for me, having used a big clunky 286 computer for several years.)

Outside the shack, on the other side of the wall, I have a car battery hooked up with a special charger which provides a monitored maintenance charge for emergency use. I have this system connected via 120 VAC relay to my radio system so that when the power goes out, the battery system automatically kicks in. I also have five 12VDC lights in the basement and Ham shack area which comes on automatically. Each of the lights can be shut off individually to conserve power if needed. When the power goes out here in the country, you can't see your hand in front of your face... especially if you are in the basement!

The Smith Chart

Electronic Applications of the Smith Chart

by Phillip H. Smith



This is an updated edition of the original, classic reference book by the legendary Smith Chart inventor himself. This book describes how the Smith Chart is used for designing lumped element and transmission line circuits and includes tutorial material on transmission line theory and behavior, circuit representation on the chart, matching networks, network transformations and broadband matching. It also includes a new chapter with example designs and a description of *winSMITH (see below).*

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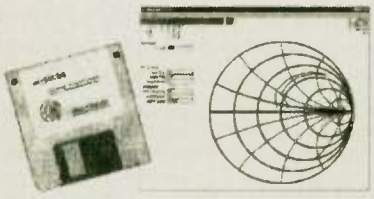

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DX World

John F.W. Minke III, N6JM

W-100-N

The following DXer successfully completed the requirements for our Worked 100 Nations Award during the month of May 1999:

552. Robert J. Parrish W9BP
All 40M CW 27 May 1999

Bob said all contacts were made since 18 March 1994 initially with the call W4OGL. Notice that I have endorsed this award for "All 40M CW," which means that Bob made all his contacts on 40 Meters using only CW. Who says CW is dead!

Annobon Island (3CØ)

Tony Galiana, EA5BY, announces a DXpedition to Annobon Island (AF-039) by the Lynx DX Group this coming September. The team will include Ramon, 3C1GS; Roberto, 3C1RV; Elmo Coll, EA5BYP; and Vicente Mira, EA5YN. All the necessary permits have been obtained, transportation arranged, and logistics have been put together for this rare location needed by many a deserving DXer.

The length of operation will be ten days on all bands, 2 through 160 Meters; CW, SSB and RTTY. Look for this one early September signing with the call 3CØR.

Republic of Somaliland (6O)

During the early part of May, Baldur Drobnica, DJ6SI, and Franz Langner, DJ9ZB, were signing 6OØX and 6O1Z, respectively, from Hargeiza, the capital city of Somaliland. Somaliland declared independence from Somalia back in 1991, but this has not been recognized by other countries. According to the *Ohio/Penn DX Bulletin* this is not enough to be granted a new entity to the DXCC list.

China (BY)

DX News Sheet reports that Chinese novice stations are now permitted to

operate on 15 Meters above 21.400 MHz. And these novice stations are also on CW between 21.100 and 21.150 MHz.

If you worked BT99WED during the month of June, that was a special event station celebrating World Environmental Day by the Nanjing Agricultural University Radio Club.

Svalbard (JW)

The Daily DX reports that a group of German operators will be active from Spitzbergen on Svalbard (EU-026) starting 09 August signing with JW/DF6VI and JW/DL4OCM for about six days. Their planned activity includes CW, SSB and RTTY on all bands, 10-160 Meters.

There was activity during the month of May from Bear Island (EU-027) by JW4CJA and JW9FJA, also part of Svalbard.

Market Reef (OJØ)

Dennis Motschenbacher, K7BV, arrived on Market Reef (EU-053) as planned and began operating as OJØ/K7BV about 1930 UTC on 25 May. Also on the reef with him was Seppo Sisatto, OH1VR, signing with OJØVR.

George Wagner, K5KG, notes that they completed their operation on 28 May with 6,000 contacts by OJØ/K7BV and 2,000 contacts by OJØVR. From there, they returned to Aland Islands (EU-002) where Dennis continued operating, including the WPX contest signing with OHØZ.

IOTA

Look for Glyn Jones, GWØANA, who will be signing with GB5FI from Flatholm Island (EU-124) from 27 August - 01 September. This will be an all mode, all band affair, conducted by his fellow club members of the Barry Amateur Radio Society.

Terry Mitchell, VE7TLL, and four other BC types plan to activate Dundas Island (NA-118) during the period 22-26 July signing with VE7ISL/P. During the IOTA contest they will use the call VD7D to celebrate the 225 anniversary of Juan Perez and his ship *Santiago* landing on the Queen Charlotte Islands in 1774. Note that Dundas Island is not part of the Charlottes.

The following IOTA operations provided acceptable validation material and have been accepted by the IOTA committee:

AF-043 TRØA/P	Banie Island	Mar 1999
EU-120 GØUIH/P	Holy Island	Aug 1998
EU-120 G3XFA/P	Holy Island	Aug 1998
OC-138 VK4CAY	Thursday Island	Apr 1999
OC-172 VK4CAY	Fitzroy Island	Mar 1999
OC-227 VK4CAY	Mornington Island	Mar 1999
OC-228 VK4CAY/5	Granite Island	Apr 1999
OC-228 VK5AFZ/P	Granite Island	Apr 1999
OC-228 VK5BIT/P	Granite Island	Apr 1999
SA-007 HK3JJH/ØM	Malpelo Island	Mar/Apr 1999
SA-084 HK3JJH/4	Cacagual Island	Mar 1999

Here is a large selection of IOTA activity during the month of May. How many of these did you work?

AF-045 6V1A	Goree Island	01-02 May
AF-082 3C2JJ	Corisco Island	22-27 May
AN-006 EM1U	Biscou Islands	12-26 May
AN-015 8J1RL	Ongul Island	08-20 May
AS-005 RAØBY	Dickson Island	13-24 May
AS-005 RØ/US3IU	Dickson Island	16 May
AS-005 RAØBK	Dickson Island	22-29 May
AS-008 JL1UXH/1	Izu Archipelago	02 May
AS-008 JQ1SUO/1	Izu Archipelago	03 May
AS-015 9M2VZ	Pinang Island	10 May
AS-015 9M2KT	Pinang Island	30 May
AS-015 9M2TO	Pinang Island	11-20 May
AS-017 7J6CCU	Okinawa Island	07 May
AS-017 7J6CCO	Okinawa Island	31 May
AS-017 JS6PXB	Okinawa Island	08-22 May
AS-024 JS6LIH	Taketomi Island	24 May
AS-024 JR6USF	Ishigaki Island	09 May
AS-024 JS6PMR	Yonaguni Island	12-21 May
AS-028 UAØQBA	Kotelny Island	11-23 May
AS-028 UAØQMU	Kotelny Island	04-27 May
AS-037 JM1PXG/6	Koshiki Islands	09 May
AS-038 UAØKCL/Ø	E. Siberian Sea Coast	26 May
AS-040 JH6TYD	Goto Island	07-22 May
AS-040 JA6BZI/6	Goto Island	01 May
AS-040 JA6LCJ/6	Goto Island	01 May
AS-041 JA4CIW	Oki Archipelago	16 May
AS-045 HL5FUA	Ullang Island	05 May
AS-047 JR8GZU/6	Daito Island	02 May
AS-049 JL6UBM/6	Tokara Archipelago	02-04 May
AS-049 JI3DST/6	Tokara Island	01-03 May
AS-049 JF6WTY/6	Tokara Archipelago	02-03 May
AS-053 HSØ/IK4MRH	Phuket Island	03-16 May
AS-056 JA4PXE/6	Danjo Archipelago	02-03 May
AS-073 9M2TO/P	Terengganu/Kelantan	01-03 May
AS-075 XX9TRR	Taipa Island	04-15 May
AS-079 JA5CKD/6	Miyako Island	01-31 May
AS-083 RA9LI/9	Belyy Island	01-31 May
AS-083 UAØQJG/9	Belyy Island	15-27 May
AS-097 9M2/GM4YXI	Besar Island	14-16 May
AS-099 YMØS	Bozaada Island	08-13 May
AS-103 BV9AAC	Peng Hu Island	02-07 May
AS-103 BV9AYA	Peng Hu Island	18 May
AS-117 JA4PXE/4	Jasiro Island	15-16 May
AS-117 JN4CIW	Oki Island	15 May
AS-122 HLØIHQ/2	Paengnyong Is.	21-23 May
AS-141 BI5D	Dongtou Island	01-02 May

EU-008 2S5VG/P	Island of Eigg	28-30 May
EU-008 2SØNHR/P	Calve Island	29-30 May
EU-009 2SØHTG	Orkney Islands	07-23 May
EU-009 GMØHTT	Orkney Islands	09-31 May
EU-010 2AØBJG	South Uist Island	06 May
EU-010 2S3JIJ	Isle of Lewis	10-31 May
EU-011 G3RPC	Isles of Scilly	21 May
EU-011 GØANA/P	Tresco Island	03-07 May
EU-012 GB2FIO	Fair Isle	09-10 May
EU-012 GM4CHX/P	Shetland Islands	14-18 May
EU-016 9A6A	Adriactic Sea South	29-30 May
EU-016 9A4W	Adriactic Sea South	19 May
EU-016 9A2GF	Brac Island	17-30 May
EU-017 ID9/DL6RBB	Stromboli Island	16-20 May
EU-027 JW4CJA	Bear Island	08-30 May
EU-027 JW9FJA	Bear Island	24-29 May
EU-028 IA5/IK4GLV	Capraia Island	19 May
EU-028 IA5/IK4THF	Capraia Island	20 May
EU-028 IA5/IK4RUX	Capraia Island	19-22 May
EU-028 IA5/IZ4CCO	Capraia Island	21-22 May
EU-028 IA5/IK4JPR	Capraia Island	20-22 May
EU-028 IA5CNE	Elba Island	15 May
EU-028 IA5/IK8IOP	Elba Island	22-25 May
EU-030 OZ/DL5SD/P	Bornholm Island	04-07 May
EU-031 IC8/IC8OZM	Vivara Island	01 May
EU-033 LA4MQ	Vesteralen Islands	20 May
EU-036 LA8LA	Hitra Island	08-13 May
EU-037 SM7CLK	Oland Island	09-10 May
EU-037 SM7CRW	Oland Island	23 May
EU-037 SM7DLZ	Oland Island	22 May
EU-038 PA/ON4BAM/M	Ameland Island	14-15 May
EU-038 PA/LX1ER	Texel Island	13-15 May
EU-042 DK8OL	Isle of Sylt	08-23 May
EU-042 DF8XU/P	Pelworm Island	27 May
EU-042 DL9YEY/P	Isle of Sylt	30 May
EU-042 DF3ZE/P	Amrum Island	03-10 May
EU-046 LA1CI	Ringvassoey Island	13-14 May
EU-047 DL5BCN	Borkum Island	13 May
EU-048 TMØH	Ile d'Houat	13-17 May
EU-049 SV8DCY	Lesvos Island	04-29 May
EU-049 SV8DTD	Lesvos Island	07-25 May
EU-049 SV8CRI	Lesvos Island	23-26 May
EU-051 IE9/I2ADN	Ustica Island	29-31 May
EU-052 SV8/I2YYO	Levkas Island	03-14 May
EU-052 SV8CKM	Kefalonia Island	18 May
EU-052 SV8EP	Kefalonia Island	25 May
EU-052 SV8/HA5FA/P	Kerkira Island	27-28 May
EU-055 LA2JX	Lok Island	26-27 May
EU-057 DL2NOH/P	Ruegen Island	12-18 May
EU-057 DL5KUD	Reugen Island	19 May
EU-057 DLØEKO/P	Ummanz Island	23 May
EU-057 DL5CE/P	Ruegen Island	08 May
EU-057 DL1CC/P	Ummanz Island	22-23 May
EU-057 DL2BWO/P	Ruegen Island	08-09 May
EU-057 DF2BR/P	Ruegen Island	16 May
EU-057 DL3KZA	Ruegen Island	29-30 May
EU-057 DG5LBA/P	Fehmarn Island	23 May
EU-057 DL4PM	Ruegen Island	10-17 May
EU-060 SV1/I2YYO	Euboea Islands	21-23 May
EU-062 LA6WEA	Alsten Island	12-13 May
EU-068 TM5S	Sein Island	22-25 May
EU-068 F9IE/P	Sein Island	13-16 May
EU-068 F5IUI/P	Sein Island	13-16 May
EU-068 F6BFH/P	Sein Island	13-16 May
EU-068 F5TYY/P	Sein Island	13-16 May
EU-072 SV8/DL8MCA	Skiathos Island	12-25 May
EU-074 F5TBF/P	Brehat Island	13-16 May
EU-074 F5JOT/P	Brehat Island	09-15 May
EU-074 F5PFT/P	Brehat Island	09 May
EU-074 F5SNY/P	Brehat Island	07-10 May
EU-074 F5LGQ/P	Brehat Island	09-14 May
EU-075 SV1TP/P	Poros Island	14-16 May
EU-082 U1ZA/A	Kildin Island	08-31 May
EU-083 IK8PGM/1	Tino Island	23 May
EU-083 IK2DUW/1	Tino Island	23 May
EU-083 IK2GPQ/1	Tino Island	23 May
EU-084 SM5OIG	Roslagen Island	24-31 May
EU-087 SM3TLG/3	Alnon Island	19-26 May
EU-088 OZ/DL2RVL	Laeso Island	16-21 May
EU-088 OZ/DL2VFR	Laeso Island	15-21 May
EU-089 CU9AC	Corvo Island	29-31 May
EU-091 IJ7/IK7VJX	Puglia Region	29 May
EU-091 IJ7/IZ7CFF	Puglia Region	29 May
EU-094 TM2WLH	Penfret Island	07-08 May
EU-098 DN1JC	Poel Island	14-15 May
EU-098 DFØRR	Poel Island	13-16 May
EU-099 F5VCR/P	Rosservor Island	15-16 May
EU-105 F5SNY/P	Batz Island	03-05 May
EU-105 F5PFT/P	Batz Island	05 May
EU-105 F5KAC/P	Stagadon Island	22-24 May
EU-107 TM2WLH	Les Sept Iles	16 May
EU-107 F6FUM/P	Les Sept Iles	24 May
EU-108 GB5TI	Troshnish Island	29-31 May
EU-120 GØGBD	Isle of Wight	24 May
EU-121 EJ3HB	Cape Clear Island	22-23 May
EU-123 2SØEEY/P	Holy Island	27-29 May
EU-123 2S3EEO/P	Isle of Arran	27 May
EU-123 GM3VLB/P	Isle of Fidra	31 May
EU-124 GWØHGN/P	Anglesey Island	25 May
EU-124 GWØKZF	Holy Island	08 May
EU-124 GWØMOI	Anglesey Island	11-28 May
EU-124 2CØSLM	Anglesey Island	07-31 May
EU-124 2C4DIY	Anglesay Island	14 May
EU-125 OZ/DH8WW	Mando Island	23-28 May
EU-125 OZ/DL4AMK	Mando Island	22-28 May
EU-125 OZ/DK7OM/P	Roemoe Island	05-08 May
EU-125 OZ/DL5ASE	Mando Island	24-28 May
EU-125 OZ/DL1AZZ	Mando Island	22-28 May
EU-128 DL9OBL/M	Fehmarn Island	12-23 May
EU-128 DJ2MX/P	Fehmarn Island	15-17 May
EU-129 DL2RU/P	Usedom Island	05-09 May
EU-132 SO1VOX	Baltic Sea West	19-28 May
EU-133 R1ASP	Kotlin Island	19 May
EU-136 9A6DCR	Krk Island	03-23 May
EU-145 CT1BWW/P	Culatra Island	04-07 May
EU-145 CT1/DJØMW/P	Culatra Island	06-07 May
EU-145 CQ6C	Culatra Island	08-09 May
EU-156 F6ELE/P	Tombelaine Island	30 May
EU-156 F8BPN	Tombelaine Island	30 May
EU-156 F6HKA/P	Tombelaine Island	30 May
EU-157 F5SNY/P	Ile de Cezambre	12-13 May
EU-165 IMØMBP	St Peters Island	25-29 May
NA-031 KA3UNQ/P	Rhode Island group	09-11 May
NA-031 AA1AC/P	Rhode Island group	07-22 May
NA-034 KM4RX	Anna Maria Island	06 May
NA-036 VE7GDJ	Vancouver Island	17 May
NA-036 VE7ZO	Vancouver Island	24-29 May
NA-036 VE7FTM	Vancouver Island	17 May
NA-046 K1VSJ	Martha's Vineyard	31 May
NA-051 VE7QCR	Queen Charlotte Is.	15-21 May
NA-051 VE7TLL	Queen Charlotte Is.	04-21 May
NA-055 AA1KS	Moose Island	09-29 May
NA-057 AH6PN/HR6	Roatan Island	09-18 May
NA-065 AD7U	Whidbey Island	09 May
NA-065 W7HLO	Doe Island	09 May
NA-065 N6FD/7	Fidalgo Island	01-31 May
NA-067 K2PXQ/4	Hatteras Island	21 May
NA-072 HP1XVH	Contadora Island	13 May
NA-083 K2RMM/4	Virginia group	13-15 May
NA-085 K2OLG/M	St George's Island	17-18 May
NA-091 VE7/GM3VLB	Denman Island	19-20 May
NA-110 AA4V/P	Isle of Palms	15-29 May
NA-110 K9JWV	James Island	04 May
NA-128 VE2DDK	Ile d'Orleans	23-26 May
NA-134 OX3LG	Asiaat Island	11-17 May
NA-136 W1DIG	Pot Island	21-23 May
NA-136 WF1N	Pot Island	21-23 May
NA-144 WC6DX/P	Anacapa Island	22-23 May
OC-011 V63KU	Moen Island	19-31 May
OC-022 YC9BU	Bali Island	31 May
OC-027 FOØCLA	Nuka Hiva Island	30-31 May
OC-027 FO5QG	Nuka Hiva Island	03-30 May
OC-059 V63AO	Kosrae Island	05-26 May
OC-075 YC5YAS	Batam Island	18-31 May
OC-075 YC5TA	Batam Island	20-27 May
OC-075 YC5YCT	Batam Island	28 May
OC-075 YC5TML	Batam Island	03-21 May
OC-128 DU1IMA	Palawan Islands	08-24 May
OC-129 K9AW/DU6	Negros Island	12-27 May
OC-130 DU8DJ	Mindanao Island	04-12 May
OC-130 DU9ELH	Mindanao Island	11 May
OC-137 VK4CY	Lamb Island	11 May
OC-137 VK4LV	Bribie Island	25 May
OC-137 VK4GP	Bribie Island	16 May
OC-141 VK8KTC	Groote Eylandt	21 May
OC-144 YB4FIK	Belitung Island	09 May
OC-145 YC8YZ	Ternate Island	15-21 May
OC-147 YC9YKI	Yapen Island	02-03 May
OC-148 YC9MKF	Timor Island	05-21 May
OC-148 YC9NCZ	Timor Island	05 May
OC-149 H44NC	New Georgia Is.	13-14 May
OC-151 YC9LQA	Flores Island	06-13 May
OC-154 VK8AN/6	Troughton Island	04-10 May
OC-169 A35RK	Liguka Island	17-23 May
OC-210 YC8TXW	Sangihe Island	03-28 May
OC-210 YC8RRK	Sangihe Island	04-29 May
OC-210 YC8RBC	Sangihe Island	14-26 May
SA-008 LU3XPS	Terra del Fuego	06 May
SA-008 L21XSI	Terra del Fuego	23 May
SA-008 LU8XW	Terra del Fuego	01-30 May
SA-009 9Z4BZ	Tobago Island	18 May
SA-012 YV7BLT	Isla Margarita	27-30 May
SA-012 YV7QP	Isla Margarita	29 May
SA-026 PP5OW	Santa Catarina Is.	15 May
SA-026 PP5AM	Santa Catarina Is.	15 May
SA-064 CE7AOY	Isla Las Huichas	07 May

The recent BI5D DXpedition to Dongtou Island (AS-141) made some 16,178 contacts in 80 hours of operation.

IOTA Honor Roll

The RSGB has released the annual IOTA Honor Roll with over 300 members listed. I will list only North American calls here. The are listed by rank with the total IOTA island groups credited.

10 W9DC	887	79 W4DKS	766
13 VE3XN	884	82 W3KH	762
19 K9PPY	871	83 WØMLY	761
21 W4BAA	866	87 KH6WU	758
33 VE6VK	850	94 KC8PG	750
35 WD8MGQ	843	111 W2FXA	711
40 N7TZ	832	115 N5UR	709
41 K8DYZ	831	116 W9NZM	705
47 K7SO	823	117 K2VV	703
47 VE7IG	823	117 N6BOI	703
55 K6DT	818	119 WT2O	701
59 N8JV	815	123 K5MK	700
62 W5BOS	808	132 KA5TQF	682
70 N5JR	782	136 W9HA	677
71 WB9EEE	777	139 VE3MDQ	673
73 VE7IU	772	147 W5KN	661
78 KB8O	767	148 VE7YL	660

152 KA1DIG	657	219 N5OUE	560
152 W1ENE	567	220 N6VR	559
155 VE3NSZ	653	222 N5XG	553
156 K8NA	649	223 N3ERM	552
160 K3FN	646	228 NN2C	546
161 N4QQ	645	231 KM4RX	542
163 N6AWD	642	232 N3CWP	541
165 VE3LDT	636	233 WF5E	539
167 N5FW	632	241 WDØFTD	529
169 AA5AT	627	249 K8LJC	519
174 AA7AV	624	251 K5FNR	517
182 VE3PRU	616	255 N6JV	515
183 KD1CT	614	259 WB3DNA	513
184 W1CU	613	265 K8AJK	509
187 VE6PW	611	271 KH7RS	505
189 N6PYN	610	274 W2JZK	504
189 WØBBT	610	277 WA3HUP	502
189 W9HAO	610	278 W9CZI	501
195 N5ET	609	280 W7MO	500
197 AA9DX	606	283 WW1V	498
199 WF1N	604	291 KQ4YI	481
203 W7OF	594	293 KC5E	480
204 AD5A	588	299 N7RO	474
206 W6ED	584	301 AB5C	473
213 VO1XC	572	303 W5WP	472
216 N6JM	568	309 AA5ZA	465

Conventions

If you are traveling in Europe this fall please consider the annual RSGB International HF and IOTA Convention. It will be held at the Beaumont Convention Centre in Old Windsor 08-10 October 1999. A very interesting programme (that's Brit for program) has been planned and they also have activities for traveling spouses. For additional information check the webpage at www.g3wkl.freeserve.co.uk/conv/prog.htm. Mari and I will be there for ***Worldradio*** this year.

The 8th annual New Orleans International DX Convention will again be at the Royal Sonesta Hotel in the New Orleans French Quarter 27-28 August 1999. I highly recommend this one and you will not be disappointed. They do a bang-up job and everyone is made to feel at home. Unfortunately, I don't think I will be able to make it due to my attending the RSGB convention in October.

It's not too late to sign up for the Pacific Northwest DX Convention in Portland for the weekend of 30 July - 01 August 1999. Hosted this year by the Willamette Valley DX Club, it will be at the Monarch Hotel, 12566 SE 93rd Avenue, Clackamus, OR. As it is beyond the 30 June pre-registration date, the affair will cost you $60, which includes the banquet and breakfast. For those of you who prefer to brown bag it, the cost is only $20. To register send your checks to Jim Fenstermaker, K9JF, P.O. Box 945, Brush Prairie, WA 98666-0945. Make your checks payable to WVDXC.

Finally, you might want to make your next year's hotel reservation for the big one in Visalia. Yes, the International DX Convention is back there and is hosted by the Southern California DX Club for the weekend of 14-16 April 2000. Call the hotel direct at 559/651-5000. Over 40 percent of the rooms have already been taken.

Antique QSL Department

This month's selection of old QSL cards comes from the collection of Bob Ekleberry, W4CKD, of Greenville, OH. At the time of the contacts Bob was signing with the call of W8PQK.

We begin with a card from Jaroslav Chmel, OK1BC, of Praha, Czechoslovakia. Bob worked him back in 1938 on 10 Meters CW. As this was over 60 years ago and prior to World War II we do not know the whereabouts of Jaroslav and if he is still alive.

DX Prediction — August 1999

Maximum usable frequecy from West Coast, Central U.S. and East Coast (courtesy of Engineering Systems Inc., Box 939, Vienna, VA 22183). The numbers listed in each section are the average maximum usable frequencies (MUF) in MHz for contacting five major areas of the world centered on Africa—Kenya/Nairobi, Asia—Japan/Tokyo, Oceania—Australia/Melbourne, Europe—Germany/Frankfurt, and South America—Brazil/Rio de Janeiro. Smoothed sunspot number = 128. Chance of contact as determined by path loss is indicated as bold ***MUF** for good, plain MUF for fair, and in *(parentheses)* for poor. UTC in hours.

CENTRAL U.S.A.

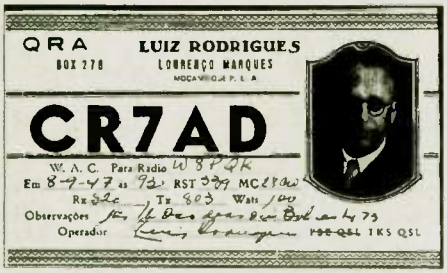
UTC	AFRI	ASIA	OCEA	EURO	SO AM
8	18	18	***29**	*(13)*	***21**
10	22	***16**	***25**	***21**	***22**
12	29	***17**	***22**	***26**	***25**
14	33	19	***20**	***28**	***32**
16	***35**	16	18	***28**	***37**
18	***36**	*(15)*	18	***27**	***41**
20	***34**	23	***35**	***25**	***43**
22	***28**	***27**	***41**	***22**	***43**
24	***24**	***29**	***44**	***16**	***40**
2	***21**	***28**	***43**	***14**	***33**
4	***22**	24	***43**	***19**	***27**
6	21	***22**	***36**	***16**	***24**

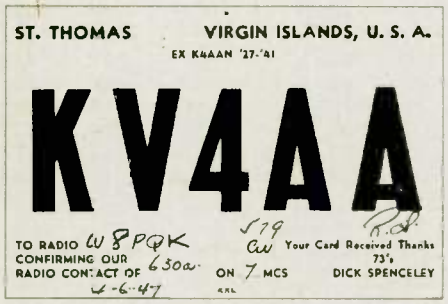
WEST COAST

UTC	AFRI	ASIA	OCEA	EURO	SO AM
10	*(16)*	***18**	***26**	*(13)*	***23**
12	26	***15**	***23**	22	20
14	31	***19**	***20**	***26**	***30**
16	34	***21**	19	***27**	***36**
18	***36**	17	18	26	***40**
20	***34**	***27**	***34**	23	***42**
22	***28**	***30**	***41**	*(17)*	***42**
24	24	***30**	***43**	14	***39**
2	21	***29**	***44**	*(15)*	***32**
4	***22**	***27**	***42**	***21**	***27**
6	23	***25**	***39**	***19**	***23**
8	20	***21**	***31**	16	***21**

EAST COAST

UTC	AFRI	ASIA	OCEA	EURO	SO AM
7	***23**	16	***28**	***15**	***21**
9	25	*(13)*	***24**	***21**	***22**
11	***34**	***22**	***22**	***26**	***24**
13	***40**	20	20	***28**	***32**
15	***42**	17	*(19)*	***29**	***37**
17	***41**	15	*(18)*	***28**	***40**
19	***37**	21	27	***27**	***42**
21	***31**	26	39	***24**	***43**
23	***26**	***28**	***43**	***19**	***40**
1	***23**	26	***43**	***16**	***33**
3	***19**	21	***40**	***14**	***27**
5	***26**	19	***33**	***17**	***24**





Several cards from Mozambique have been reproduced here in the past, but I have always found personalized type cards of interest. CR7AD was the call used by Luiz Rodrigues in 1947. His whereabouts are unknown.

The third card is familiar to many of you old-timers. Dick Spenceley was very active from the U.S. Virgin Islands signing with KV4AA. When Danny Weil, VP2VB, was doing his thing sailing around the world in his sloop *Yasme*, Dick was his QSL manager. Although Dick's card was a simple one it served its purpose. The date of this particular one was 1947 and he apparently never changed the design. Dick has since become a Silent Key.

Bob also included some interesting comments on old QSL cards and says, "It is time to realize the importance of these old QSLs and to promote their worth. I shudder to think of the thousands that have been destroyed or lost in the past. Widows, sons and daughters have no idea of how important a role they have been in our hobby — I have preserved all of my many thousands back to my first QSOs starting 06 March 1936 as a youngster in Cincinnati, OH."

QSL information

Phil Cooper, GUØSUP, notes that the recent activity of GU2ENK in a recent ARI contest is a pirated call. Phil, who is the RSGB QSL manager for the GU and MU calls, says this call has never been issued. Alex Schernikau, DL6KVA, reports another pirate signing with T22QO on 23 May giving K7ZO as his QSL manager. Don't waste your time with QSL requests for these.

Thanks go to the following contributors for this month's column: DL6KVA, EA5BY, GUØSUP, W4CKD, K5KG, N7NZ, Western Washington DX Club (WAØRJY), American Radio Relay League (NC1L), WebCluster (OH2AQ), *425 DX News* (I1JQJ,), *The OPDX Bulletin* (KB8NW), *DX-News* (NJDXA), *The Low Band Monitor* (KØCS), *The Daily DX* (W3UR), QRZ DX (N4AA), and *DX News Sheet* (G4BUE).

Bernie McClenny, W3UR, of *The Daily DX*, (and the DX editor for *QST*), says he saw the infamous Romeo Stepanenko, who quickly disappeared after Bernie took his picture. Romeo, who had signed with 3W3RR, YAØRR, 1S1RR, XYØRR, and other calls, was the Russian equivalent to Don Miller. Have a good summer. 73 de John N6JM. — *John F.W. Minke III, N6JM, can be reached at: P.O. Box 310, Carmichael, CA 95609-0310 or via e-mail: n6jm@pacbell.net.*

Next SAREX mission to test DSP hardware

The next Space Amateur Radio EXperiment mission—set to launch in July, will field test a digital signal processing box NASA is looking at to improve the quality of shuttle communications audio.

Word from NASA is that the next SAREX mission has been scheduled to launch on 20 July at 0436 UTC aboard shuttle Columbia mission STS-93.

The STS-93 Mission Commander is Eileen Collins, KD5EDS. This shuttle mission marks the first for a female commander. "It's good to have a challenge like that because it just motivates you and makes you want to work harder," Collins told the Associated Press this week. Other amateurs on board include Mission Specialists Michel Tognini, KD5EJZ, and Catherine Coleman, KC5ZTH.

Students in Texas, Rhode Island, Virginia, and Florida, are on the list to talk to the STS-93 crew via Amateur Radio. That's where the DSP experiment comes into play. NASA's SAREX Principal Investigator Matt Bordelon, KC5BTL, says the agency's contractors have been exploring ways to make improvements to the aging shuttle fleet. Among the possibilities was improving the intelligibility of shuttle communications audio by using DSP.

But Bordelon says making and testing these kinds of changes on the astronauts' communication system gets expensive and involved, so it was decided to first try out a DSP box on the less-critical SAREX payload aboard STS-93 to see how it performed under actual spaceflight conditions.

The SAREX Amateur Radio gear uses standard interfaces, so it was an easy match from a hardware standpoint. Bordelon says he thinks SAREX will provide a good test of the DSP hardware/software package.

The Quintronix DSP box will interface with one of the Motorola MX-360 H-Ts that NASA has been using for SAREX flights for nearly two decades now, the same type of transceiver Owen Garriott, W5LFL, used to make the first Amateur Radio contacts from space in 1983. — *ARRL Letter*

QSL Managers

2AØARG MMØARG
2AØBPP/P MMØBPP
2AØBRG MMØBRG
2CØFEU GWØFEU
2CØLGN GWØLGN
2CØMOW GWØMOW
2CØSLM GWØSLM
2CØTKX GWØTKX
2C3JSV GW3JSV
2C3SFC GW3SFC
2C4DIY G4DIY
2C4OFQ GW4OFQ
2SØFNE GMØFNE
2SØLYM GMØLYM
2SØNHR/P G3OCA
2S3JIJ GM3JIJ
2S4FDM GM4FDM
2S4JPZ GM4JPZ
2S4LGR GM4LGR
2S5VG/P GM3UTQ
3D2DX/P EA4CP
3D2QB SM3CER
3E1DX NØJT
3V8J I5JHW
3W6EZD 7L1MFS
3W6XK W9XK
3W7CW SP5AUC
3W7TK OK1HWB
3XY1BØ F5XX
3XY7A VE3WFN
3Z3JPL SP3PDV
3Z4JPD SP4GFG
3Z4N SP4HKB
3Z7JPS SP7LZD
3Z9JPG SP9KAG
4F1RWW DL4OCM
4G1A 4F1FZ
4K5CW ⁺4J9RI
4L1UN IK7JTF
4L1W Radio Club, P.O.Box 49, Tbilisi 380002, Georgia
4L4MM ON4CFI
4L4TL ON4CFI
4L8T LY1FF
4M4X W4SO
4N1DX K1WY
4N1YL K1WY
4X/OK1CW OK1CW
4X/OK1TN OK1TN
4X/OK2GG OK2GG
4X3DIG 4Z5AX
5A21PA K1WY
5A22PA IK3ZAW
5B4/RX4HW RX4HW
5B4FLNick Waite, Flat 203, Nitse St. Ria Court 5, 6028 Larnaka, Cyprus
5B4WN Marios Nicolaou, P.O.Box 4834, Nicosia, Cyprus
5H3/IK2GZU IK2GZU
5H3RKRalph, P.O. Box 9274, Dar es Salaam, TANZANIA
5NØMSV OK1JR
5NØMVE ON7LX
5NØZKD OK1AUT
5N9MSV OK1JR
5P1ER OZ8AE
5R8ET K1WY
5T5WW ON5NT
5U7DG K4SE
5X1P G3MRC
5X1T ON5NT
5X1Z SM6CAS
7J6CCO JR6HI
7L1MFS Hiroshi Yoshida, Shingo-Big., 4-4-1, Arakawa, 116-0002, Tokyo, Japan
7S5F SK4AO
7X4AN Mohamed Boukhiar, P.O. Box 30133, Barcelona, 08080, Spain
9A1A K1WY
9A1DAB JW9FJA
9A3FT JY9NX
9A4RU JW5NM
9H3DN LA2TO
9H3UT DL9GDB
9L1PG NW8F
9M2/GM4YXI GM4YXI
9N1AA K4VUD
9N7RN IK4ZGY
9N7UD K4VUD
9V1AP HL1KIB
9V1BG JL1MWI
9V1UU JA1NLI
9Y4/PA3BBP PA5ET
9Y4/PA3ERC PA5ET
9Y4ATJefferry Gibson, 14 SWWTU Avenue, South Valsayn, Trinidad and Tobago
9Y4SF WA4JTK
A41JV A4
A92BE W3HNK
AB2E 9K2/SQ5DAK
AH2/AHØR JH6RTO
AM5DCL EA5DCL
AM8ZS VE3HO
AP2WAP IK4ZGY
AX1TX K1WY
BA1HAM NE9Z
BA4DX BA4CH
BA4EG BD4EG
BD3SESun-Wei Dong, P.O.Box 17, Jiangxian, Shanxi 043607, China
BD7NQ W2AY
BD7YB Fu Shi Liang, No.100 Bin Hai, New District Haikou 570105, China
BD8SN J.J.Sheen, 22 Min Hang Lu, Kunming, Yunnan 650041, China
BG5WKY P.O.Box 18, Sanming, Fujian, China
BG7YD Xian Bo, No.100 Bin Hai, New District Haikou 570105, China
BT99WED F6FNU
BV2DP Richard W.S.Lu, P.O.Box 32-144, Taipei, Taiwan
BV2TL Chen, P.O.Box 542, Sanchung 241, Taiwan
BV4NF Hiro Porng, P.O.Box 9, Sanyi, Miaoli, Taiwan
BY1DX OH2BH
BY4BNS BD4EE
C31US Joan Manel Sauri Araus, P.O.Box 1092, Andorra la Vella, Andorra
C4ØM 5B4AFM
C4A 9A2AJ
C6/MØCIL ON4BAM
CE3/ON4CDM ON4CDM
CE3AA CE3WDH
CF3BLU VE3BLU
CI7A VE7SV
CN8NK EA5XX
CN8WW DL6FBL
CO8ZZ AD4Z
CP6XE IK6SNR
CQ9K CS3MAD
CS1GDX/P CT1AHU
CU8/CU3EJ CU3EJ
CU8I CT1AHU
CU9/CU3DJ CU3DJ
CW9A KA5TUF
CY9RF K8RF
CY9SS VY2SS
D2GG CT1GG
D2RV AA4HU
D99ARDF HLØHQ
D99XPO HL3AHQ
DF2SS A41KJ
DL3NRV UN7SB
DL6KVA Axel Schernikau, Kurt-Schumacher-Ring 187, D-18146 Rostock, Germany
DL7BO 9A99P
DL8KAC 6MØHZ
DL9GDB KHØ/JA4RED
DS2AGH J79QA
DS5SWL J79BP
DU1ODX NHØE
DU6/K9AW WF5T
DX1DX DU1SAN
DX1S KU9C
DX1S KU9C
E4/OK5DX OK1TN
E4/OK5DX OK1YN
E41/OK1DTP OK1TD
E41/OK1FHI OK1FHI
E6TBN CE6TC
EA5VY/P EA5VM
EA8/9A4KK 9A4KK
ED1ISA EA1EAU
ED2DIE EA2TV
ED2LAE EA2CBY
ED5DX EA5RM
ED7CIW EA7ARC
ED8GCR EA7OH
ED8PP EA3KU
EGØFAS Bureau
EJØX EI4DW
EK6CC N8BGD
EK6LP IK2DUW
EK6TA DJØMCZ
EK7DX F5LGQ
EL2DT IKØPHY
EL2WW ON5NT
EM4E UR4EYT
EM5ØUWC UT5UN
EM5HQ UY5ZZ
EM7Q UY5ZZ
EO1I UT1IA
EO7V UR7VA
EROF UXØFF
ERØITU ER1DA
ER1LW Lysy Wiacheslav, P.O.Box 112, Chisinau, MD-2012, Moldova, C.I.S.
ER2ØØP ER1DA
ER2ØOT ER1DA
ES5Q ES5RY
ET3BN DL1JRC
ET3BT K1WY
EV6M EW6WF
EX8W UA3AGS
EY8XX GW3CDP
EZ8CQ WØFS
EZ8CW (Direct only) F5BU UPØF
FG/PA3BBP PA5ET
FG/PA3ERC PA5ET
FG/PA3FQA PA5ET
FG5FC F6DZU
FK8VHT F6AJA
FM/PA3BBP PA5ET
FM/PA3ERC PA5ET
FM/PA3EWP PA5ET
FM/PA3FQA PA5ET
FM5WE W4FRU
FOØCLA F6LQJ
FOØMAC K8OU
FOØPAP K8OU
FR/DL8AAV DL8AAV
FR5VZ F5VZ
FT5ZJ F2YT
G7T G3NYY
GB5TI GMØKVI
GD3LSF K1WY
GD6IA GD3UMW
GIØPCU K1WY
GI3MUS K1WY
GI6YM K1WY
GUØWWW 5B4WN
HA/N9NC OM2SA
HBØ/DA1WA DJØLC
HBØ/PA3ERC PA5ET
HBØCZS K1WY
HC1OT/HC8 NE8Z
HC8N AA5BT
HD1OT NE8Z
HD9OT NE8Z
HG4I HA5LN
HG9X HA9PP
HH2JOE Jose Forero, P.O.1602, Port au Prince, Haiti
HH2NH KU9C
HI3/DL1GKG DK2GP
HKØVGJ Abel Carmelo Guerrero Martinez, P.O.Box 852, San Andres I., Colombia
HLØHQ Korean Amateur Radio League, P.O Box 162, Seoul 100-601, South Korea
HLØZX/4 HLØZX
HL1/JI1EFP JQ1NGT
HL4CFNChoi Hyeong-Moon, P.O.Box 59, Hwasun 519-800, South Korea
HL5FBT Kim Keum-Cheol, P.O.Box 34, Namdaegu 705-600, South Korea
HL5FXP J79RC
HR1/K3VN K3VN
HR2/KC4CD HR1JPT
HR6/AH6PN W7TSQ
HSØZCW K4VUD
HZ1AB K8PYD
I8ØS I2JSB
IE9/I2ADN I2ADN
II1R I1NVU
II1R I1NVU
IJ7/IK7VJX IK7VJX
IQ5Z IZ5AXA
IQ7T IK7AFM
IR6CGC IK6CNM
IU7X I7PXV
J3/W1AIM W1AIM
J41RKE SV1EYQ
J45KLN SMØCMH
J49WI I2WIJ
J6/KF8VX KF8VX
J6/KG8QL KG8QL
J6/PA3BBP PA5ET
J6/PA3ERC PA5ET
J6/PA3EWP PA5ET
J77C PA5ET
JAØJHA KHØJH4RLY
JA4CZM UX6F
JF2WXS V26E
JH7FQK UTØU
JJ2NYT Tsuyoshi Nakanishi, 1013 Oyama-cho, Yokkaichi City,Mie 512-1101,Japan
JK3HLP Takafumi Ueda, 2-35-3 Mitsuishidai, Hashimoto City, Wakayama, 648-0094, Japan
JT1DA Enk, P.O.Box 736, Ulan Bator 13, Mongolia
JW4CJA LA4CJA
JW9FJA LA9FJA
JY9NE N3FNE
K1WYEU The K1WY DX Association P.O.Box 90, Eeklo 9900, Belgium
K1WY-USAThe K1WY DX Association, P.O.Box 2644, Hartford, CT 06146-2644, USA
K9AW/DU6 WF5T
KA5TQF OE4A
KKØDX Todd LeMense, 3603 South 89th Street, Omaha, Nebraska 68124-3931, USA
KU9C JW2PA
KW1WY K1WY
LA2PA UP4L
LA2TO KHØ/AA1NY
LA5NM USØQ
LA8W LA4DCA
LA9FJA US1I
LO1F LU4FM
LT1F LU1FKR
LX1CAEugene Thiwa, 22 Cite Bourschterbach, L-9029 Warken,Luxembourg
LY8X LY1BZB
MØBYF OH6YF
M6T G4PIQ
MM/DL5BUT DL5BUT
MMØ/W9DC W9DC
MU2K ON4ON
MU2K ON4ON
N1DG OF6YF
N3FNE UT/DL7BO
N4B KKØDX
N5FG 9A7P
N5FTR NP4Z
N5PA JW/F5BU
NP3D W3HNK
OD5KB Sami G.Maalouf, P.O.Box 70364, Antelias, Lebanon
OD5MM Irma Mishellany, P.O.Box 184, Jounieh, Lebanon
OHØ/K7BV KU9C
OHØ/OH6YF OH6YF
OHØLIZ OH5LIZ
OHØMYF OH6YF
OHØZ OH1EH
OH2BR Jukka Heikinheimo, Rikunkuja 4, FIN-01420 Vantaa, Finland
OH3MYF OH6YF
OH6Y OH6YF
OH7M OH6LNI
OH9A OH1NOA
OI6YF OH6YF
OK1HWB Michal Plasil, P.O.Box 29, CZ-39501 Pacov, Czech Republic
OK7DX OK2ZO
OL4S OK2ZU
OL5Q OK1HRA
OL5Y OK1MG
OL6X OK1DIG
OM5M OM3BH
OM8A OM3RM
ON4CAT K1WY
ON4CFI OG6YF
ON4ON Danny Commeyne, Rozenlaan 38, 8890 Dadizele, Belgium
ON9CAT K1WY
OX3LG OZ1PIF
OX3LG OZ1PTF
OY2H I2MQP
OY3QN OZ1ACB
OZ3W W3HNK
P29CC K1WY
P29KPH K5YG
P29NB K3BYV
P29WK K9JJR
P3A W3HNK
P3A W3HNK
P49V AI6V
PA5CWKees Wiegers, De Schans 96, 9351 AZ Leek, The Netherlands
PJ2/OH6YF OH6YF
PQ2A PY2AA
PQ2Q PY2KP
PR2M PY2MT
PR2R PY2KP
PR2W PT2AW
PR2YL PP5LL
PR59B PP5LL
PS2E PY2EX
PS2W PY2MT
PS4ØØNAT PS7AB
PT1A PY1NX
PU2A PY2AA
PV2E PY2YW
PV2U PY2SP
PV2V PY2KP
PW1S PY1KS
PW2C PY2KC
PW2N PY2NY
PW2P PT2NP
PW2S PY2GJR
PW8LF PY2VA
PXØA PY2OJD
PX2A PY2KP
PX2F PY2KP
PX2U PY2OX
PX2X PY2ZX
PYØFA PY4KL
PY2KAK PY2AA
PY2P PY2RIK
PY4ZF/PY6 TK2XYU
PY5ZHP DL4DBR
RØ/US3IU UA3AGS
R1AND RW1AI
R1FJL UA3AGS
R2ØØAP RA1WZ
R9X RN9XA
RA9LI/P DL6ZFG
RD3Q RN3QO
RF9C RK9CWW
RJ9J RA9JR
RK1B/1 RV1AC
RK6LWA/P UA4HUR
RMØF RAØFU
RM6A W3HNK
RM9RA RW9QA
RM9RM RW9QA
RM9RO RW9QA
RM9RX RW9QA
RM9RX/9 RW9QA
RM9RZ RW9QA
RUØLAX W3HC
RU1POL/Ø UAØKCL
RW2F DK4VW
RW6BQ RW3RN
RW9RN RW9QA
RY9C UA9CGA
S21J K1WY
S92RS DC8TS
SN5N SP5KP
SO1VOX DL7VOX
SP5KQS KW1JY
SU3FM Fahmy Mosalam, P.O.Box 777, Port Said 42111, Egypt
SV7DLF Ilias Stathopoulos, P.O.Box 58, GR-681 00 Alexandrupoli, Greece
SV8/HA5FA/P HA5FA (Bureau)
SV8/I2YYO IK2MYX
SV8/I3BQC I3BQC
SV9/G3NYY G3NYY
SV9/G4FRE WW2R
SV9/G4VXE G3SWH
SV9/OH9MM OH3LQK
T32IW DJ5IW
T32RT W6UC
T32VU DL1VU
T7ØA Radio Club, P.O.Box 77, San Marino A-147890, San Marino
T77CD IØMWI
T77F IN3WWW
T77WI Giancarlo Monticovia, M.Moretti 5, Serravalle, D-147899, San Marino
T93Y W6MD
T99T 9A2AA
T99W DL1QQ
TA4/DL5MAE DL5MAE
TA4/TA3J TA3J
TA4/TA3YJ TA3YJ
TE45C W3HNK
TE45CF W3HNK
TF7GX K1WY
TF8GX K1WY
TI1C W3HNK
TI2WGO N5BUS
TI5N TI5KD
TI8/PA5CW PA5CW
TMØAI F5JBR
TMØCRA F4ANJ
TMØP F6BFH
TM1RCL F5TCM
TM2SIX F6KRD
TM4C F6KAR
TM5AKL F5AKL
TM5B F5XX
TM5DX F5EJC
TM5EUR F5IAE
TM5K ON4ON
TM5ON ON4ON
TM6ACO F6KFI
TM6BMP F5RYC
TM6JUN F2RO
TM6T F6CHT
TM9C F5IN
TN2FB F3FB
TN7OT AL7OT
TO5C PA5ET
TR8XX Jean Claude Jupin, P.O.Box 4069, Libreville, Gabon
UAØACG K1WY
UAØAOZ K1WY
UAØDC K1WY
UAØLEC W3HNK
UAØZBK K1WY
UA7A UA9AB
UA9AB Gene Shcumat, P.O.Box 17, Troitsk, Chelyabinskaya obl., 457100 Russia
UA9QA RW9QA
UA9QGB RW9QA
UA9RH RW9QA
UA9RQ RW9QA
UA9XAC RN9XA
UE4HCI RK4HYG
UE4NKI RW4NW
UE4NMM RA4NF
UE9XAC RN9XA
UK8OB IK2POR
UN7LZ 9A4W
UT5UDX 9A9A
UT5UIA 9J2BO
UT5UN 9J2AM
UU2JZ 9G1MR
UU6JF 9H1EL
UX3FW 9H3UT
V26E AB2E
V26OC N3OC
V47JVG G4JVG
V5/HB9QQ HB9QQ
V63AO JA6NL
V73ZZ K7ZZ
VA1A K3BU
VD7D VE7TLL
VE4KAZ W3HNK
VE7ISL VE7TLL
VE7TLLTerry Mitchell, P.O.Box 9, Tlell, BC V0T 1Y0, Canada
VF6JY VE6JY
VK1TX K1WY
VK6EWI VK6NE
VK6ISL VK6LC
VK8AN/6 VK4AAR
VK9WM VK4FW
VK9WY VK4FW
VP5GA N2GA
VQ9CV ND1V
VQ9DX AA5DX
VQ9PH W2JDK
VQ9VK N1TO
VR2/OH6YF OH6YF
VU2JPS VK9NS
VU2LE K6JG
VU3TOM Tom Davis, U.S. Embassy - New Delhi, Department of State Washington, D.C. 20521-9000, U.S.A.
VU3VLH OK1MM
VY1/N1TX N1TX
VY2SS Robby Robertson, RR#2, Bloomfield Stn., Prince Edward Island, C0B 1E0 Canada
W3HC JY9NE
W4DN VP2MHJ
WC4E VP5/PA3BBP
WH2/N2NL W2YC
WH7Q ND3A
WL7KY NU4N
WP2Z KU9C
WP3A W4DN
WP3C Alfredo Velez, Ramos, HC-02 Box 7455, Utuado, Puerto Rico 00641, USA
WP3R W3HNK
XE1RGL N2AU
XJ9DX VE9DX
XR1X DL7BO
XU1YY JA6HOR
XU2A 7L1MFS
XU7AAE 7N3RQU
XU7AAN JH8YZB
XUXØ 7L1MFS
XV3ØØS 7L1MFS
XV7SW SM3CXS
XX9JUV XX9AU
XX9TRR N6XJ
YBØCBI Ferry Soedjana, P.O.Box 8075 JKSTB, Jakarta 12080, Indonesia
YBØZDD Club Station ORARI Lokal Pasar Minggu, Box 7257/JKSPM, Jakarta 12072, Indonesia
YB1AQS DK7YY
YB2UU P.O.Box 6223, Semarang 50063, Central Java, Indonesia
YB4JIM Akhmad Ferdinand Lubis, Palembang 30126, South Sumatra, Indonesia
YB7VR Pak Azwar, P.O.Box 455, Balikpapan, Kamtim 76100, Indonesia
YL4U YL2KL
YO3OAIR YO6KBM
YO3APJ N2AU
YR99E YO3KPA
YT4AY YU4WU
YUØC YU7CB
YV4A YV5/OH0XX
YV5/OHØXX Olli Rissanen, PMB 599, 1313 So.Military Trail, Deerfield Beach, FL-33442, U.S.A.
YZ75AEW YU7CB
Z32KV 6MØYC
Z37GBC NN6C
ZA1M IK2HTW
ZC4ATC 5B4YX
ZD7BG Gilbert legg, P.O.Box 157, Saint Helena Island, South Pacific Ocean
ZD7VC K1WY
ZD9BV W4FRU
ZD9IL ZS5BBO
ZF1A K9LA
ZF2AH W6VNR
ZF2MO OM2SA
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Jerry Wellman, W7SAR

Professional vs. "amateur"

A recent *9-1-1 Magazine* featured the role of the dispatcher with particular focus on the role of "in the field" communicators. My first thought was "this is about Amateur Radio. This is what we've done for years!" Unfortunately, there were only one or two mentions of Amateur Radio and then only briefly.

The official term is "incident dispatcher" or "tactical dispatcher." They're also called "incident dispatch teams" or IDTs. In a nutshell, it means you operate at the scene of the emergency and your focus is on that specific event. Some of the skills mentioned in this article included setting up a field communications station, establishing a portable repeater, stringing phone lines, staffing an on-scene command post, and handling radio traffic. To me that sounds like what many Amateur Radio groups have been doing for years.

The lead paragraph of the article on incident dispatching said that for several years there has been growing interest in "rapid-deployment teams of dispatchers capable of providing communications support right at an incident's command post." I'm guessing that many emergency managers don't read many Amateur Radio-related emergency articles or they'd know this concept has been a core interest for decades. And they'd know that Amateur Radio has provided "incident" and "tactical" communications from just about every emergency situation imaginable.

One statement in the article put me in the defensive mode where a fire official said there was a need to put "professional" communicators in the on-scene dispatch center. And another statement in the article that said "an incident commander should never touch a microphone where these professionals are deployed." My heartburn is with the word "professional."

Does the author mean a full-time paid agency employee or someone who is a trained communicator? There is a difference, and I'll address that in a few paragraphs.

The article's author did say that the concept of IDT isn't new and that many agencies deploy mobile command/communication vehicles to the field but "few staff them with personnel who are best at resource management and communications." A second frustration of mine is that the article implies that this concept needs to be sold to "emergency managers" who have to decide if they can incorporate the additional expenses in their tactical response budget.

If I were an emergency manager from a small jurisdiction, the concept of IDT just got trashed because of the implied high operating cost. But wait! What about scores of events where volunteer Amateur Radio operators are on call to assist emergency managers? Should we append "IDT" to the Amateur Radio Emergency Service title — and promote ourselves as ARES-IDT? It's a thought and it might make marketing our volunteer skills a little easier.

In defense of the author, I must tell you that he's an experienced fire dispatcher and has been in charge of his department's IDT since its beginnings in 1992. He's also got a string of other credits to his name so I'm hoping that his article's focus didn't intentionally overlook volunteer professionals such as ARES.

I also know how protective a dispatcher is concerning his or her turf. I spent many days and nights in front of a communications console and was very (make that VERY) protective of my role as a link to the on-scene officer. I recall being religiously indignant at the thought that any volunteer service (REACT, ARES, CAP, etc.) could do as well as I could. I was, after all, a professional and I was paid to communicate. My attitude was often "what do these commo wannabes know"?

Fortunately I was able to gain some field experience and over time develop some wisdom that changed my perspective. I'm always grateful that so many volunteer their time and talents and many emergency managers choose to use volunteers and resist the "government can do it all" attitude. It makes for a lighter tax burden and increases the expertise for when the "big one" hits and we realize that government can't do it all.

As an aside, when I attended the National Search and Rescue School recently one of the instructors was quick to point out that the Air Force Rescue Coordination Center relies heavily on the on-scene command expertise (most often a volunteer) to make the SAR decisions. This comment was a significant change from the early 1970s when an AFRCC "commander" often made specific search assignments and took umbrage if a "volunteer" coordinator tried to suggest alternate deployment of SAR teams.

Let's talk a little about certification and the word "professional." I work with a fellow that is, in my opinion, perhaps in the top five percent of network programmers. He's not only good, he's very good when it comes to sorting out network protocols and routing and making a network zip along at light speed. He's also paid a good salary, but perhaps below industry standards. You see, he doesn't have any magic initials after his name. He is not an A.S., a B.S., an M.A., or a Ph. D. He's also not a CNA, CNE, A+, or MCSE. He might be able to say he is CPR certified because we all learned basic first aid last month, but that's about all.

In a nearby company, I'm friends with another fellow who has a bunch of letters after his name and has spent big bucks attending two- and three-week courses for various certifications. Yet, for all the certifications, this fellow mostly doesn't have a clue and I'm often confused at some of the absurdities he does for his company. His managers seem to revere his opinions because he is a "certified professional" yet their network is slow, often down, and they spend lots of money on "solutions," none of which seem to work.

I worry a great deal when someone can attend a 40-hour course and walk away with a certification and have little or no experience in the associated area of expertise they're now certified in. If I'm setting up a field command post, do I want the person who's done it a few times or do I want the person who is certified as an IDT, but never been on-scene?

Currently the computer industry is promoting many short courses (several days to several weeks) and home-study courses as the way to a high-paying career. Many businesses who don't know better look to these 90-day wonders as the solution to high-tech problems. What the business manager doesn't consider is the lack of hands-on experience that can't be learned in 90 days. It is impossible to troubleshoot or even diagnose high-tech problems without a significant amount of field experience — and this comes over time and almost NEVER accompanies a certificate. (I think there should be a diploma from the University of Hard Knocks.)

Street officers refer to the new guy as a "rookie" for a reason and the label stays until the rookie proves his or her mettle. But how many companies have an arbitrary 90-day limit on "rookie" status and how many rookies are "veterans" after 90 days? I'd much rather have an experienced EMT respond if I'm hurt than a rookie with a 40-hour certificate — especially if I like to remain among the living.

Here's my short message to emergency managers looking for a rapid deployment communications team: Incorporate local volunteer groups into your plan. If you're staffing a short-term, limited scope emergency such as a building fire or hostage situation, use your paid dispatchers. If you're planning on a large-scale, long-term event, how many paid dispatchers are you able to field? How many dispatchers can you deploy for the next earthquake or back-country multi-county fire? I have an answer — Amateur Radio operators who already know technical and tactical aspects of communications and who are eager to learn your department procedures and are eager to be of service. And they'll work for a pat on the back and a "well done."

Some random thoughts

I've noticed locally there are fewer and fewer packet bulletin boards operating. Some others who have noticed the decline attribute it to the growth of the Internet and I agree. While some might bemoan the loss, it does make the packet frequencies less crowded and makes it easier to connect via several nodes to carry on a digital conversation.

After having my packet station off for several years, I'm back on and enjoying it a great deal. I'm not sure what is happening in your area, but if you were overwhelmed by BBS traffic in the past, give it a try now and see if your local frequencies are less congested.

I'm in the process of integrating an aviation intercom into my communications trailer. There are times when ambient noise makes running communications nearly impossible. When I'm on the radio I often need to coordinate with either another operator or someone who is the interface to the outside world. My thinking is that an intercom would be just the neatest thing in such situations.

The intercom also has an output jack for a tape recorder so I can record both headset audio and transmit audio for logging and training. The aviation style intercom caught my attention because it works well in a high-noise cockpit and also has various configuration features that have worked well for pilots and might work well for ground use as well.

I'll let you know how it works. If any of you have tried and experimented, please send e-mail and share your ideas.

Finally, consider the concept of a "partial solutions" contingency plan. In this planning model, you would have several start-up options, several on-scene options, and several wrap-up options. Depending on the nature of the event, you would select what might work best. It's just a concept but it helps clarify how one might best meet a diverse set of scenarios that we often face. I'll explore it in future columns, so if you have ideas on developing such a training model, please share your thoughts.

Until next month, best wishes from Salt Lake City! — *Jerry Wellman, W7SAR, can be reached at: P.O. Box 11445, Salt Lake City, UT 84147 or via e-mail: jw@desnews.com*

Packet Radio

During a recent emergency exercise in Michigan, Packet Radio was used extensively for communications between an Emergency Operations Center ('EOC') and a command post in the field. All messages transmitted on this circuit used the standard NTS 'radiogram' format. The speed and accuracy of packet radio combined with the complete information provided by the NTS message format, did much to expedite message routing and delivery. When a 'hard-copy' message appeared on the packet radio printer, all one had to do was remove the message and hand it to a runner for delivery to the appropriate official within the EOC or command post. Because everything was written out, no confusion occurred as to message content. The individual receiving the message knew exactly which official at what location provided or requested the information and at what time he/she did so.

When officials wished to originate a message, they were encouraged to simply fill-out a blank message form with the name and location of the addressee, the message text, and their signature. The message was then given to the communicator who completed the preamble, and sent it via the most appropriate network (FM, CW or packet). What surprised many of the least experienced radio amateurs was the fact that these officials actually appreciated the requirement for written messages. After all, it is in the interest of both the communicator and the public safety official to avoid the confusion that occurs when a message passes through several verbal 'translations' as often occurs when third-party messages are handled informally.

A disturbing trend

One of the greatest difficulties experienced during the exercise was a lack of portable Packet Radio stations! Despite a few week's notice and the fact that three ARES/RACES organizations were participating, only two portable packet stations could be deployed. It appears that interest in Packet Radio, at least in the Southeastern Michigan area, has dropped off considerably. Many have suggested this situation may be due to competition from the Internet. However, a far more important questions is this: What does it mean for the future of Amateur Radio public service when one of our most versatile and efficient public service tools is so terribly underdeveloped? We hear quite a bit of talk about threats from outside the Amateur Radio Service, however; perhaps the greatest threat to our future is the lack of commitment to public service communications amongst rank-and-file radio amateurs! Such tools aş Packet Radio, APRS, ATV, and similar specialized modes, all of which have the potential to significantly increase the value and utility of Amateur Radio as a public service organization, are simply not being developed in many areas. What is especially interesting is that many of these tools are of most utility at VHF and UHF frequencies, all of which are available to 'no-code' technicians. Wasn't the 'No-Code' license supposed to attract the very type of individual who was supposed to develop these capabilities? This can't help but beg the question; is it really CW that's at fault for the decline of interest in Amateur Radio?

Speaking of CW

During the same emergency exercise, part of the scenario called for communications between the Headquarters EOC and various American Red Cross facilities within Michigan. Repeated attempts were made to establish communications on 75-meter SSB with no success, despite the fact that a net was in progress and several stations were listening for exercise traffic. Therefore, operations were shifted to the Michigan "QMN" CW Frequency and guess what? Absolutely no difficulty was had communicating! Traffic was cleared quickly and efficiently with very few 'fills' despite the low-power, portable HF equipment (50 Watts) and a temporary antenna. At one point during the exercise, direct communications was established with Falls Church, VA, and a

message for ARC National Headquarters was transmitted through the facilities of the "Hit and Bounce" CW Net on 40 Meters. Again, traffic was passed with little difficulty (thanks to WA4DOX for accepting the traffic).

This is not the first time this situation has occurred, either. Such situations often occur during daily NTS operations when propagation conditions are poor. The fact is, CW offers distinct advantages for fast, efficient traffic handling under poor conditions or when using mobile, portable, or low-power HF systems. I have yet to be convinced that CW is obsolete within the context of High Frequency communications! Let's not forget that CW remained in widespread use in both the military and maritime services until which time High Frequency communications systems were replaced with satellite-based infrastructure. Amateur Radio has yet to replace HF Radio with similar satellite systems of proven reliability.

Camping and hiking season

Now that summer is here, many of us will take a QRP transceiver along when camping or hiking in remote areas. In many of these locations, cellular telephone coverage is inadequate or nonexistent. A simple QRP CW transceiver makes it possible to check in to an 80-meter Section Net or an independent wide-area traffic net on 40 Meters in order to transmit messages to family and friends back home. Such messages may be as simple as letting others know you are OK, or perhaps notifying someone of a change in one's plans. Likewise, such a rig may come in handy should an emergency arise in a remote area.

During a recent hunting trip in the Upper Peninsula of Michigan, I used our CW traffic net to alert the families of two members of our party of their intent to leave two days early. Despite the fact that three cell phones were available amongst the group, no service was available and the nearest pay phone was a half-hour drive away. The messages arrived just fine and considerable inconvenience was prevented.

Preparing a 'jump kit'

Along with summer comes severe storm season, which will be well underway when you read this column. This is a good time for ARES and RACES members to put together a 'jump-kit' containing common items which are essential to most emergency communications activities. When assembling your kit, don't attempt to cover all eventualities. The goal is to have on hand those items most likely to be used. Since most emergency communications takes place on 2 Meters, this typically means a hand-held radio and related accessories. The author's recommendations for the contents of a jump-kit' include:

- Two meter hand-held transceiver with spare battery packs (alkaline preferred)
- cigarette lighter plug adapter
- Magnetic mount antenna
- Variety of RF adapters
- Flashlight
- Clip board, pens, pencils
- 100 copies ARRL form FSD-244
- Quantity of message blanks and pads of paper
- ARES/RACES Identification
- Emergency telephone number reference list
- Emergency medical information (keep in your wallet in case you are injured)
- Heavy 'workshoes'
- Detailed map(s) of surrounding area

These items can be kept in a small bag or briefcase, which can be carried in the back of one's vehicle or kept at the office for immediate use in time of emergency. If an emergency occurs while one is at work, at the park, or on the golf course, it's a simple matter to grab the gear and proceed straight to an assignment.

The reader will note that an 'alkaline battery pack' is recommend for the hand-held radio. This recommendation is made for two reasons:

1.) If you forget to charge a Ni-Cad pack it may be of no value when most needed.

2.) Dry cell batteries (usually type 'AA') are available everywhere.

Other items of critical importance include the 'magnetic-mount' antenna and cigarette lighter plug. Many radio amateurs mistakenly assume they will be most needed in their own vehicle. This is not always the case. Some situations may require you to temporarily communicate from a public safety vehicle, American Red Cross ERV, or similar mode of transportation. The simple fact is, 'rubber duck' antennas don't work well from inside vehicles.

Finally, note the 'work shoes.' I keep an old pair of U.S. Navy-issue steel-toe shoes in my kit. This is done because many disaster sites present hazards such as nails protruding through boards, jagged metal, and uneven surfaces. Experience has shown that my 'wing tips' and 'Red Ball Jets' simply do not hold up well under such circumstances! Even if one's tetanus shot is up-to-date, an injured communicator just adds more problems for disaster workers.

Traffic handling tip

I'll close with a tip from E.E. Bruckner, which he provided in his preface to the 1923 edition of the *Phillips Code* manual. He wrote; "Paradoxical as it is, it isn't the time one makes, but the time one loses that really counts on any circuit." This is good advice for any traffic handler.

Les Cobb, W6TEE

A new HF Mobile Antenna

This month I want to tell you about the newest HF mobile antenna design from Don Johnson, W6AAQ, inventor of the HF mobile screwdriver antenna. I will also check the mailbag, and clear up some loose ends on RV mobiling.

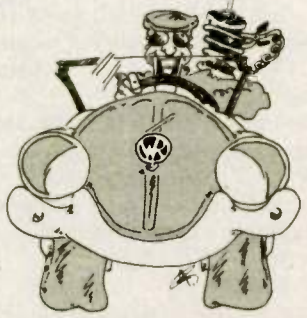
Anyone who calls their antenna a DK-3 is acknowledging Don Johnson's contributions, because D K are Don's initials, and 3 is his third design, from 1991, the screwdriver. Don has been retired longer than most of you have been working, and gets to spend his time designing and constructing in his home workshop. Don's designs and innovations are all covered by patent disclosures and his documentation is covered by copyrights.

A frequent question in my e-mail is, "How do I get in touch with Don about the DK-3 antenna?" So when Don sent me information on his new DK-4 antenna, I was quite interested because I knew you would be interested. I got to see this new antenna up close and on his new pickup the following weekend at the North Hills Radio Club Hamswap, near Sacramento.

First, I need to describe an innovation to the DK-3 antenna design that Don made last year. A loaded low-loss antenna presents less than 50 Ohms impedance at the base. So a matching device is more than a good idea between the antenna and the coax. There are various capacitive and inductive ways of providing this match. Don's antennas now include an inductive Z-match cut right into the base of the aluminum mast, allowing the bottom to be grounded. A section of PVC pipe inside the mast strengthens the spiral cut section. Don says his resulting proprietary Z-match provides a more than acceptable match over the entire antenna range with no switching.

The DK-4 antenna carries this idea of cutting an inductance into the aluminum mast one step further and has a 14 to 30 MHz loading coil cut into the top of the mast. Unlike the DK-3, where the coil rides up and down inside the mast with a contactor at the top of the mast, the DK-4 slide contactor assembly rides around the outside of the mast and is moved up and down the coil to QSY. This is done manually with no screwdriver motor, but Don hints that it could be motorized by some handy gadgeteer Ham.

There is also a DK-4 Plus antenna



where a 40-meter loading coil can be stacked between the DK-4 coil and the top whip. When in this configuration, adjusting the lower coil tunes the antenna across the 40-meter band. All of the DK-4 antennas are capable of more than full legal power.

Don will sell DK-3 construction manuals, some parts, and complete antennas. Write Don at Box 595, Esparto, CA 95627-0595 for details. His web page and e-mail are presently offline. But at the Hamswap, Don introduced me to Doug Huston, KC6FRY, of Starfire Tec, who has photos of Don's antennas on the web at http://www.hamradiotoys.com. Click on Products, then DK-3. Don's newest book, *"Everything You Forgot to Ask About HF Mobileering,"* is available from ***Worldradio*** as shown elsewhere in this issue.

Also at the Hamswap, I saw a Mosley mobile antenna for sale. I have one, and know that it is a 20-15-10 Meter trap antenna. However, the seller insisted that it was a 75-meter center-loaded whip. It didn't sell.

Rick Cochran, WO8L emailed: "One of the guys in your most recent (June) column talked about putting two Hamsticks back-to-back as a dipole and about his results. I have done that many times with my old, trusted Class C RV and worked Switzerland, Germany, Ukraine and many other DX locations on 15 and 20 Meters. As you noted in your column, you're much better off using sticks which are designed to be resonant on the particular band you want to work. My rig is an Alinco DX70T, which works full power without an external tuner into the sticks intended for a specific band. The limitation of this approach, of course, is that you can only work one band at a time without changing resonators. We recently purchased a new RV (I've worked nearly 40 years for it and it's a dream come true), and I'm still trying to figure how to mount a multiband vertical on a fiberglass body with few ground connections."

I sent Rick some more details about the RV antennas that I mentioned in the Quartzfest '99 article in June 1999 ***Worldradio*** and the June HF Mobile column, but this seems to be a continuing problem. No two RVs are made the same. If anyone has more ways to ground antennas systems on fiberglass RVs, let me know.

Bill Kurtti, WCØM, was at Quartzfest '99: "Enjoyed your article in ***Worldradio*** about the mile 95 (Quartzfest milepost) campout.... Harvey & Margie deserve a bouquet of flowers for their work in making the event successful. After the campout we snowbirded in AZ & CA until the middle of March then came home to ND and have not had any WX as nice as there yet." Thanks, Bill.

I've been asked how to get in touch with the Quartzfest folks, as well as the Sam's Radio Hams RV club, since my Quartzfest '99 article in the June issue. Some of this information was in my February 1999 column, but not in this later article. The Q2K Quartzfest for Ham RVers is scheduled for 01-07 February 2000, at Quartzsite, Arizona. See *Cactus Country News*, Harvey and Margie Tetmeyer, K5LJM and AB5ZX's web page, www.futureone.com/~harvey for advance information on Quartzfest, and reports and photos on the last three Quartzfests. You can write to them at harvey@futureone.com or 9723 Campana Drive, Sun City, AZ 85351 (new mailing address).

Sam's Radio Hams is a Ham RV club with activities centered on Southern California. People have asked about membership information after reading the June article. See the Sam's Radio Hams web page at www.pobox.com/~valf or send a self-addressed envelope to the Secretary and Membership Chairman: Doris Johnson, KD6JUS, P.O. Box 222, So. Pasadena, CA 91031-222. Good Sam RV Owners Club membership is required since the Sam's Radio Hams are chartered as a Good Sam Chapter.

I understand that a few thousand copies of the June 1999 issue were given away at the Dayton Hamvention, so welcome new readers. — *Les Cobb, W6TEE, can be reached at: 5000 North Avenue, Carmichael, CA 95608 or by email at: lcobb@compuserve.com.*

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Arizona Repeater Association. P.O. Box 35758, Phoenix, AZ 85069-5758. Operates 20 VHF & UHF rptrs. in AZ. Meets 4th Thurs./monthly, 7:30 p.m., APS Shure Building, 2124 W. Cheryl, Phoenix, AZ. Info:www.goodnet.com/indirect/www/ara 12/99

Cochise Amateur Radio Assn., (CARA). Meets 1st Mon./monthly, 7:30 p.m. at club facility on Moson Rd., Sierra Vista, AZ. K7RDG/R 146.76(-) rptr. PL162.2. 5/00

Old Pueblo Radio Club, (OPRC). P.O. Box 42601, Tucson, AZ 85733. Meets 2nd Wed./monthly, 7:15 p.m., Tucson Med. Cntr., Grant & Beverly St. in the AZ Rm. of the Volunteer's Bldg. (1st bldg. on the left going north off Grant). 2/00

CALIFORNIA

Amador County Amateur Radio Club. P.O. Box 1094, Pine Grove, CA 95665. Meets 1st Thurs./monthly, 7:30 p.m., Jackson Sr. Cntr., 229 New York Ranch Rd., Jackson, CA. Info: call 146.835(-) 5/00

Amateur Radio Club of Anderson, (ARCA). Meets 2nd Thurs./monthly, 7:30 p.m. Amer. Legion Post #746, 1709 Bruce Dr., Anderson, CA. Net every Tue., 7:30 p.m. on 146.64. http://www.snowcrest. net/bgorski/index.html 10/99

Beach Cities Wireless Society. P.O. Box 4016, San Clemente, CA 92674. Meets 2nd Thurs./monthly, 7:30 p.m., Ole Hansen Beach Club, 105 W. Avenida Pico, San Clemente. Rptr. 146.025(+) PL 110.9. 8/99

Coachella Valley ARC. Box 11092, Palm Desert, CA 92255-1092. Meets 2nd Wed./monthly, 6:30 p.m., Portola Com. Cntr., 45480 Portola, Palm Desert. Info: Bill Dews, (760) 346-8611. Net Thurs. 7 p.m. 146.025(+) PL 107.2. 5/00

Contra Costa Communications Club, Inc., WD6EZC/R. P.O. Box 20661, El Sobrante, CA 94820-0661. Meets 2nd Sun./monthly (except May & Dec.), 07:30, Baker's Square Rest. in Richmond, CA. Info: Stan Clark, KB6SEI, (510) 724-0158. 2/00

Downey Amateur Radio Club Inc., W6TOI. Meets 1st Thurs./monthly, 7:30 p.m., So. Middle School cafetorium, 12500 S. Birchdale, Downey, CA. VHF net W6GNS rptr. 146.175(+) Thurs., 7:30 p.m.http://www.downeyarc.org. For info: Larry Vaughn, kd6nzw at kd6nzw@downeyarc.org 5/00

East Bay Amateur Radio Club, Inc. Meets 2nd Fri./monthly, 7:30 p.m., Albany Sr. Cntr., 846 Masonic Ave., Albany, CA. Info: S. Primbsch, (510) 741-8227. 145 11(-) MHz. 3/00

Fresno Amateur Radio Club. Meets 2nd Fri./monthly, 7:30 p.m., Ernie Pyle School, 4140 N. Augusta, Fresno, CA. 146.94(-) 223.94(-). 11/99

Golden Empire Amateur Radio Society, (VEC). P.O. Box 508, Chico, CA 95927. Club call W6RHC, rptr. 146.85(-). Meets: 3rd Fri./monthly, 7:30 p.m. at 345 Cherry St. (Library Rm.), Chico. 5/01

Livermore Amateur Radio Klub, (LARK). Meets 3rd Sat./monthly, 9:30 a.m., City Council Chamber, 3575 Pacific Ave., Livermore, CA. Net Mon. 1900 on 147.12(+). For info: LARK Secretary, P.O. Box 3190, Livermore, CA 94551-3190. (925) 373-1386. 2/00

Los Banos Amateur Radio Club. Meets 2nd Sat./monthly, 7 p.m., Scout bldg. at Pacheco Pk., 7th St & Pacheco Blvd. Info: M. Germino, AD6AA, (209) 826-0903, e-mail: AD6AA@arrl.net. Net 147.060(+) PL 107.2 every Thur. 7 p.m. Rpt. KB6NMP 147.06(+) PL 107.2 & 444.00(+) PL 241.8. Web site: Home.inreach.com/AB6KF 6/00

Marin Amateur Radio Club (MARC). W6SG. Box 9456, San Rafael, CA 94912-9456. Meets 1st Fri./7:30 p.m., Kaiser Hosp., Bldg. 2, Terra Linda, CA. (except Dec.; Sun. a.m. Club at Alto Building, 27 Shell Road, Mill Valley. 9/99

Motorcycling Amateur Radio Club. Meets 2nd Sat./monthly, 8 a.m., Lake View Cafe, 2099 E. Orangethorpe, Placentia, CA, at 91 Fwy/Lakeview. Info: Ray Davis, KD6FHN, (949) 551-1036 or (949) 551-2010. 5/00

River City A.R.C.S. Meets 1st Tues./monthly, 7 p.m., SMUD Bldg., Don Julio at Elkhorn, Sacramento, CA. License classes offered. For info!: (916) 483-3293. 9/99

Sacramento Amateur Radio Club. Meets 2nd Wed./monthly, 7 p.m. Sac. Blood Ctr., 32nd St. & Stockton Blvd., Sacramento, CA. Info net at noon on rptr. W6AK/R 146.91(-). Steve Cates, KC6TEV, (916) 391-7341 or Les Ballinger, WA6EQQ, (916) 393-4775. 2/00

Sacramento "Old Timers" Amateur Radio Society and Sacramento Valley Chapter #169 QCWA (Quarter Century Wireless Assn.). Meets 2nd Wed./monthly, 8 a.m., Lyon's Restaurant, El Camino Ave. & Watt Ave. For info contact Paul Wolf, W6RLP (916)489-8112. 12/99

Sierra Foothills ARC. P.O. Box 1005, Newcastle, CA 95658. Meets 2nd Fri./monthly, 7:30 p.m., Auburn Library (Beecher Rm.), 350 Nevada St. Thurs. nets 7:30 p.m. 145.430(-) PL 94.8, Sun. net 7:30 p.m. 28.415. 6/00

South Bay ARC. P.O. Box 536, Torrance, CA 90508. Meets 3rd Thurs./monthly, 7:30 p.m., Torrance Memorial Hosp., 3330 Lomita Blvd., Torrance, CA. Talk-in on WB6MYD rpt. 244.38(-). Info: (310) 328-0817. 8/00

Southern Sierra ARS. Meets 2nd Thurs./monthly, 7 p.m., Veteran's Hall, 125 East F St., Tehachapi, CA. Contact: Caroline, KD6KMN, (805) 822-5995. 147.06(+), 224.42(-), 145.090(S) Packet. 1/00

This month...Beach Cities Wireless Society, from San Clemente, CA, are winners of an MFJ Antenna Analyzer to share with its members. The club's name was selected at random from our *"Visit Your Local Radio Club"* listing.

Mount Diablo Amateur Radio Club. P.O. Box 23222, Pleasant Hill, CA 94523. Meets 3rd Fri./monthly, 7:30 p.m., Our Savior's Lutheran Church, 1035 Carol Lane, Lafayette, CA. Net Thurs. 7:30 p.m. on 147.06(-) PL 100Hz. Info: (510) 932-6125. 8/00

Nevada County ARC. Meets 2nd Mon./monthly, 7 p.m., Salvation Army Bldg., 10725 Alta St., Grass Valley, CA. Net Tues. 7 p.m. 147.015. Contact Linda Johnson,KE6HWE,lindasue@mail.telis.org (530) 273-2008. 8/99

North Hills Radio Club. Meets 3rd Tue./monthly, 7:30 p.m., Carmichael Elks Lodge, 5631 Cypress, Carmichael, CA. Nets 8 p.m. Tue., (except 3rd Tue.) & Thur., 145.190(-) (PL 162.2 Hz) & 224.400(-) MHz. For info contact: Earl Mead, K6ESM, (916) 331-1115. E-mail: nhrc@K6IS.org or http://www.k6is.org 4/00

Orange County Amateur Radio Club. Meets 3rd Fri./monthly, 7:30 p.m., Orange County Red Cross, 601 N. Golden Circle, Santa Ana, CA. Talk-in 146.550 (S). Contact Bud Barkhurst, WA6VPP, (714) 744-6361. WWW.W6ZE.ORG 2/00

Poinsettia ARC. Meets 1st Thurs./monthly, 7:30 p.m., First Christian Church, Telegraph Road. & Teloma Dr., Ventura, CA. For info: Jim Casper, N6PIQ, (805) 649-1445. 4/00

Tri-County Amateur Radio Assoc. P.O. Box 75, Claremont, CA 91711-0075. Meets: 2nd Mon./monthly, 7:30 p.m., Brackett Airport Adm. Bldg., 1615 McKinley Ave., La Verne, CA 91750 (so. side of Bracket Airport). Info: Chuck, KQ6NX at kq6nx@juno.com or (909) 949-8145 3/00

Trinity County ARC. P.O. Box 2283, Weaverville, CA 96093. Meets 2nd Wed./monthly, County Sch. Adm. Bldg., Weaverville, 7:30 p.m. Rptrs: WA6BXN 146.73(-) PL 85.4, W6HOR 146.925(-) PL 85.4. 11/99

United Radio Amateur Club, K6AA. L.A. Maritime Museum, Berth 84, Foot of 6th, San Pedro, CA 90731. Meets 3rd Fri./monthly (except Dec.), 7:00 p.m. Monitors 145.52 Simplex 10 a.m.-5 p.m. 8/99

Vaca Valley Radio Club. Meets 2nd Wed./monthly, 7:30 p.m. (Board mtg., 7 p.m.) Vaca Fire Dist. Stn., Vine St., Vacaville, CA. Rptr. WD6BUS 145.47(-) PL 127.3. Gerald Grossardt, (707) 447-0869 5/00

Victor Valley Amateur Radio Club. P.O. Box 869, Victorville, CA 92392. Meets 2nd Tue./monthly, 7 p.m., Presidio Rec. Cntr., 11100 Apple Valley Rd., Apple Valley, CA Talk-in 146.94(-), PL 91.5. Net Sun. 7 p.m. 146.94(-) 2/00

West Coast Amateur Radio Club, (WCARC). P.O. Box 2617, Costa Mesa, CA 92628. Meets 3rd Thurs./monthly, 7 p.m., Fountain Valley Sch. Dist. Office, 17210 Oak St., Fountain Valley, CA. 145.440(-) PL 136.5. For info: Jane, KD6ODV, (714) 531-6707 12/99

Willits Amateur Radio Society, (WARS). P.O. Box 73, Willits, CA 95490. Meets 4th Mon./monthly, 7 p.m., Brooktrails Fire Dept. 2 NW Willits http://www.saber.net/wars. Talk-in: 145.13(-), PL 103.5. 9/99

Yolo Amateur Radio Society. Meets 1st Tues./monthly, 7:30 p.m., Denny's Restaurant, 4120 Chiles Rd., Davis, CA. Contact Dave Nishikawa, KC6YFG, (916) 756-6375/Talk-in 144.430. 12/99

Yuba-Sutter Amateur Radio Club, (YSARC). P.O. Box 1169, Yuba City, CA 95992. Meets 2nd Thurs./monthly, 7 p.m. Location announced at Mon. net, 7 p.m. on 146.085. 3/00

COLORADO

Boulder Amateur Radio Club (BARC). Meets 3rd Tues./monthly, 7:30 p.m., NIST Bldg., 325 So. Broadway, Rm 1107, Boulder, CO. Talk-in: 146.70(-) & 100Hz CTCSS. Info: (303) 380-6540, e-mail:BARC@pobox.com or www.thisistrue.com/barc.html 8/99

CONNECTICUT

Tri-City Amateur Radio Club. P.O. Box 686, Groton, CT 06340-0686. Meets 2nd Tue./monthly, 7 p.m., St. Lukes Lutheran Church of Gales Ferry on Rt. 12. Info: Bob Dargel, KA1BB, (860) 739-8016. 8/00

Western CT. DX Club. Meets 1st Tues/monthly, 8 p.m., Brookfield Com. Cntr. (on Pocono Rd. across from Brookfield P.O.) Info: contact Victor at: victoras@EROLS.com 8/00

FLORIDA

Gulf Coast ARC. P.O. Box 595, New Port Richey, FL 34656. Meets 4th Mon./monthly, 7:30 p.m., Marchman Tech. Ed. Cntr., 7825 Campus Dr., Bldg. C, Rm C122, New Port Richey. WA4GDN rptrs. 146.67(-) & 145.33(-), serving all of Pasco County. 11/99

South Brevard Amateur Radio Club. P.O. Box 2205, Melbourne, FL 32902. Meets 1st Tue./monthly, 7 p.m., Public Library, 540 Fee Ave., Melbourne, FL. 12/99

Vero Beach ARC, W4OT. P.O. Box 2082, Vero Beach, FL 32961. Meets 2nd Thurs./monthly, 7:30 p.m., Emerg. Mgmt., Indian River County Adm. Bldg., 1840 25th St. Net Mon., 7:30 p.m. 146.64. 3/00

GEORGIA

Cherokee Capital ARS. Meets 2nd Tue.monthly, 7 p.m., Ashworth Middle School, Calhoun, GA. 146.805(+). Info: Felton Floyd, AF4DN, (706) 629-0369. 12/99

Dalton Amateur Radio Club, Inc., (DARC). P.O. Box 143, Dalton, GA 30722-0143. Meets 4th Mon./monthly, 7:30 p.m., Magistrate Court Bldg., corner of Waugh St. & Thornton Ave., Dalton, GA. Info: Harold Jones, N4BD, 706/673-2291. 4/00

Gwinnett Amateur Radio Society, (GARS). P.O. Box 88, Lilburn, GA 30048. Meets 3rd Thurs./monthly, 7:30 p.m., Gwinnett Central Baptist Church on Gwinnett Dr., Lawrenceville, GA. 147.075+ PL 82.5. Contact: Mike Swiderski, K4HBI, (770) 449-0369. 8/99

HAWAII

Emergency Amateur Radio Club, (EARC). P.O. Box 30315, Honolulu, HI 96820-0315. Meets 4th Thurs./monthly, 7 p.m., Lincoln Elementary. School, 615 Auwaiolimu, Honolulu. Nets: nightly 7:30 p.m., 146.88 & 146.80. Rptrs: 146.76(-), 146.80(-), 146.88,146.98(-), 146.94(-). Info: (808) 256-6001, WH6CZB. 12/99

Koolau Amateur Radio Club, (KARC). 45-145 Mikihilina St., Kaneohe, HI 96744. Meets 2nd Sat./monthly, 9:30 a.m., Hoomaluhia Botanical Garden., Kaneohe, HI. Info: (808) 235-3042. http://www.chem.hawaii.edu/karc/ 8/99

ILLINOIS

Chicago FM Club Inc., (CFMC). P.O. Box 1532, Evanston, IL 60204. 146.76(-) PL 107.2/224.10/224.18/443.75 PL 114.8. Ham help line: (773) 262-6773. Info net Tues., 9 p.m. on 146.76(-). Meets 3rd Wed./monthly, 8 p.m. 8/00

Fox River Radio League. P.O. Box 673, Batavia, IL 60510-0673. Meets 2nd Tue./monthly, 7:30 p.m., Old Bank Bldg., 900 No. Lake St., lower level, Northgate Shopping Ctr. & Rt. 31, Aurora, IL. 8/00

Hamfesters Radio Club, W9AA. P.O. Box 42792, Evergreen Park, IL 60805. Meets 1st Fri./monthly, 7:30 p.m., Crestwood Civ. Ctr., 139th & Kostner, Crestwood, IL. Nets: Sun. (local) 0100 UTC, 28.410 MHz; Mon. 9 p.m. 146.43 S., Packet Mailbox 145.65 MHz. Info: (312) 974-3291. 2/00

The Starved Rock Radio Club, W9MKS. P.O. Box 198, Tabor St., Leonore, IL 61332. Meets 1st Mon./monthly, 7:30 p.m. Rptr. net 7 p.m. Wed./wkly., 147.12(+). 4/00

Wheaton Community Radio Amateurs, (WCRA). P.O. Box QSL, Wheaton, IL 60189. Meets 7:30 p.m., 1st Fri./monthly, College of DuPage, Wheaton, IL. Rptrs: 145.39(-) (107.2), 224.14(-), 444.475(+) (114.8). Info: Ron Hensel, K9ZE, (630) 365-0213, k9zze@aol.com 8/00

MAINE

Androscoggin Amateur Radio Club. Meets 1st Wed./monthly, 7 p.m., Auburn Police Station, 1 Minot Ave., Auburn, ME. Info: (207) 782-8699. 6/00

MARYLAND

Maryland Mobileers Amateur Radio Club (MMARC). P.O. Box 935, Severn, MD 21144. Meets 1st Fri./monthly, 7:30 p.m., Baldwin Hall, Generals HWY, Millersville. Info net each Mon. 8:30 p.m. on 146.805(-), tone 107.2 Hz 4/00

MASSACHUSETTS

Genesis Amateur Radio Society. P.O. Box 1234 Plymouth, MA 02362. Meets last Mon./monthly, 7:30 p.m. at Plymouth Airport, So. Meadow Rd. Tues. net: 146.685, W1LM, 8 p.m. 7/00

Quannapowitt Radio Assoc., Inc. 6 Savin St., Burlington, MA 01803. Meets 3rd Thur./monthly, 7:00 p.m. at Wakefield Public Library, 345 Main St., Wakefield, MA, Sept. to May. Info: Jim Chamberlain, N1AKG, (781) 944-5098. 5/00

MICHIGAN

Adrian Amateur Radio Club, W8TQE. Box 26, Adrian, MI 49221. Meets 1st Fri./monthly, 7:30 p.m., Civil Air Patrol Bldg., Lenawee Co. Airport, Cadmus Rd., Adrian. ARES net Sun., 9 p.m. 145.37(-). Info: Neil Griffith, KC8DAR, (517) 263-5774. 6/00

Genesee County Radio Club, Inc. Meets 3rd Tues./monthly, 7:30 p.m., Genesee Area Skill Center, Torrey Rd., Flint, MI. (810) 733-2082. 3/00

Hiawatha Amateur Radio Assoc. of Marquette Co. P.O. Box 1183, Marquette, MI 49855. Meets 1st Thurs./monthly, 7:30 p.m., 108 Stratofort, K.I. Sawyer AFB, MI. For info contact: Richard Schwenke, N8GBA, (906) 249-3837. 10/99

MINNESOTA

St. Cloud Amateur Radio Club. Meets 3rd Thurs./monthly, 7 p.m., Radio Club Bldg., 401 4th St. N., Waite Park, MN 56387. Info: (320) 255-1410, 146.94 or 147.015 or www.wØsv.org/ 3/00

MISSISSIPPI

Jackson Amateur Radio Club, Inc. Meets 3rd Thurs./monthly, 7 p.m., Am. Red Cross Bldg., Riverside Dr., Jackson, MS 39202. 11/99

MISSOURI

Macon County ARC. P.O. Box 13, Macon, MO 63552. Meets last Thur./monthly, 8 p.m., Macon R-I High Sch., rm.167. Net every Thurs. at 8:30 p.m. 146.805. E-mail: nøpr@onelist.com 12/99

NEVADA

Frontier Amateur Radio Society, (FARS). Meets: 1st Sat./monthly, bkfst. mtg. 10 a.m., Chicago Hot Dog Drive In, 1078 No. Rancho Dr., Las Vegas, NV. after AES swap meet. Club info: Jim Frye, NW7O, (702) 456-5396 or Bill Scarborough, WA6ASI, (702) 269-9551. 8/00

Sierra Intermountain Emergency Radio Assoc., (SIERA). Meets 2nd Tues./monthly, 7:30 p.m., Minden Med. Cntr, Hwy 395 & Ironwood Dr., Minden, NV. Contact: George Uebele, WW7E, (702) 265-4278, Rpt. 147.330 MHz.. 1/00

Wide Area Data Group, Inc. P.O. Box 3132, Sparks, NV 89432. Meets 1st Sat./monthly, 8:30 a.m., JM Restaurant & Grille, 1885 S. Virginia, Reno. Info: (702) 356-8200. Call on 147.30(+) MHz. 5/00

NEW HAMPSHIRE

Port City Amateur Radio Club, (PCARC), W1WQM. P.O. Box 1587, Portsmouth, NH 03802. Meets 1st Wed./monthly (Sept.-June), The Edgewood Ctr., 928 So. St., Portsmouth. Rptr. 146.805(-) PL 127.3, 110.9, 88.5. 10/99

NEW JERSEY

Bergen Amateur Radio Association, (BARA). P.O. Box 304, Hackensack, NJ 07601. Meets 1st Sun./monthly, New Milford Elks Lodge, Patrolman Ray Woods Dr., New Milford, NJ 07646. Nets: 28.350 Mon. 9 p.m., 146.79(-) 9 p.m. Wed. 6/00

South Jersey Radio Assoc., (SJRA), K2AA. Meets Jan.-Oct., 4th Wed./monthly, 7:30 p.m. (Nov.-Dec. 3rd Wed), Bloomfield Fire Hall in Pennsauken, NJ. Talk-in: 145.29(-) rptr. 8/00

NEW YORK

Amateur Radio Association of the Tonawandas, (ARATS). P.O. Box 430, No. Tonawanda, NY 14120. Meets 3rd Tues./monthly (except July & Aug.), 7:30 p.m., Sweeney Hose Co., 499 Zimmerman St., No. Tonawanda, NY. Talk-in: 146.955(-) rptr. W2SEX. 12/99

Genesee Radio Amateurs, (GRAM). Red Cross Office, 220 East Main St., Batavia, NY 14020. Meets 3rd Fri./monthly, 7:30 p.m.,147.285(+) W2RCX. 4/00

Hall of Science Amateur Radio Club. P.O. Box 150131, Kew Gardens, NY 11415. Meets 2nd Tue./monthly, Hall of Science Bldg., 47-01 111 St., Flushing Meadow Park, 7:30 p.m. Info: Voice mail (718) 760-2022. 2/00

PROS, Pioneer Radio Operators Society. Meets 1st Wed./monthly, 7 p.m., Sardinia Town Hall, Savage Rd., Sardinia, NY. Net 9:15 a.m. Thurs. 3853 MHz. 5/00

Suffolk County Radio Club, (SCRC). Meets 3rd Tues./monthly, 8 p.m., Bohemia Rec. Ctr., Ruzicka Way, Bohemia, NY. Talk-in: 145.21(-) rpt. Info: W.S. Black, KB2YAP, (516) 289-5587. 5/00

Yonkers Amateur Radio Club, (YARC). Meets 2nd Sun./monthly, 10 a.m., 1st Pct., Yonkers Police Station, E. Grassy Sprain Rd., Yonkers, NY. Info: P.O. Box 378, Centuck Sta., Yonkers, NY 10710. (914) 963-1021. 146.865(-), 440.150(+). 2/00

NORTH CAROLINA

Mecklenburg Amateur Radio Society. Meets last Tues./monthly (except Dec.), 7:30 p.m., East Baptist Church, 6850 Monroe Rd., Charlotte, NC. Talk-in 146.94(-). Net 9 p.m. nightly. Contact: John Coving- ton, W4CC, (704) 334-3900, e-mail: w4cc@w4bfb.org, website: http://www.w4bfb.org 12/99

Stanly County Amateur Radio Club. Stanfield, NC. Meets 4th Thurs./monthly, 7 p.m. Talk-in 146.985(-) for location. Wed. net 9 p.m. 146.985(-). Fri. tech net 9 p.m. 147.390(+). Ph: (704) 888-4815. Web page: www.qsl.net/SCARC/ 5/00

OHIO

Ashtabula County ARC. Ken Stenback, W8KS (964-7316). County Vo-Ed School, Jefferson, OH. Meets 3rd Tue./monthly, 7:30 p.m., County rptr., 146.715(-). 12/99

Toledo Mobile Radio Association. P.O. Box 273, Toledo, OH 43697; (419) 243-3836. Meets 2nd Wed./monthly, 7:30 p.m., Luke's Barn, Lucas County Rec. Ctr., 2901 Key St., Maumee, OH. 147.270(+) Net every Sun. 8:30 p.m. Website: www.tmrahamradio.org 3/00

Van Wert Amateur Radio Club, Inc. P.O. Box 602, 1220 Lincoln Hwy., Van Wert, OH 45891. Meets 1st & 3rd Sat./monthly, 8 p.m. Call-in: 146.85(-). 3/00

Western Reserve Radio Assoc. P.O. Box 81252, Cleveland, OH 44181-0252. Meets 2nd Wed./monthly, 7:30 p.m., Jenkins Communications Cntr., Main St., Olmsted Falls, OH. Info: Cliff Bade, W8CJB, Sec., 146.73(-), 444.900(+) MHz. 8/99

OREGON

Central Oregon Coast ARC. P.O. Box 254, Florence, OR 97439. Meets 2nd Sat./monthly, at Bliss' Route 66 Restaurant at Hwy 101 & 12th St. Net Wed. 7 p.m., 146.80(-). Info: 997-2323 or 997-4074. 1/00

Central Oregon Radio Amateurs, (CORA). P.O. Box 723, Bend, OR 97709. Meets last Thur./monthly, 7 p.m., Bend Sr. Ctr., 1036 NE 5th, Bend, OR. 147.06(+) MHz. Info: (541) 389-7194. 9/99

Hoodview Amateur Radio Club. P.O. Box 20624, Portland, OR 97220. Meets 3rd Thurs./monthly, 7:30 p.m., Mt. Hood Community College/Gresham, Rm 1001. Rptrs: 147.28(+), 448.475(-5) (tone 167.9) 5/00

Keno Amateur Radio Club. P.O. Box 653, Keno, OR 97627. Meets 3rd Thurs./monthly, 7 p.m., Keno Fire Stn. Rptr. 147.32(+) K7ENO. Info: Tom Hamilton, WD6EAW, Telephone/FAX: (541) 883-2736. wd6eaw@cdsnet.net 12/99

Umpqua Valley Amateur Radio Club, Inc. P.O. Box 925, Roseburg, OR 97470. Meets 3rd Thurs./monthly, 7:30 p.m., Douglas County Court House, Rm. 310, Roseburg, OR. Info: WØQOT/R 147.12(+) (PL100) or (541) 863-7692. 7/00

PENNSYLVANIA

Butler County Amateur Radio Assn. P.O. Box 1787, Butler, PA 16003-1787. Meets 1st Tues./monthly, 7:30 p.m., Boy Scout Cntr., 830 Morton Rd., Butler, PA. Call-in W3UDX/R 147.36(+). Net 10:10 p.m. nightly. 12/99

Mercer County Amateur Radio Club, W3LIF. P.O. Box 996, Sharon, PA 16146. Meets 4th Tue./monthly, 7:30 p.m., Shenango Valley Med. Ctr, Farrell, PA. Net, Thurs. 9 p.m. on 145.35(-) W3LIF, Digi. 145.Ø5. 6/00

VIRGINIA

Mt. Vernon Amateur Radio Club, (MVARC). Meets 2nd Thur./monthly (except Dec.), 7:30 p.m., Mt. Vernon Governmental Cntr, 2511 Parkers Ln., Alexandria, VA. Contact: Bob, KT4KS, (703) 765-2313. E-mail: mvarc@juno.com, http://www.mvarc.org/, Net: Tues. 8:30 p.m. 146.655-. 10/00

Portsmouth ARC. Meets 4th Thur./monthly, 7:30 p.m., Am. Red Cross Chapter house, 700 London Blvd., Portsmouth, VA. Talk-in 146.850. Info: Carl Clements, Pres. (757) 484-0569. http://www.series2000.com/users/wa4nvi/parc/htm 4/00

Southern Peninsula Amateur Radio Klub, W4QR (SPARK). Meets 1st Tue./monthly Sal. Army Com. Bldg., Hampton, VA. Repeaters 146.73(-), 449.55(-). VE Exam Info: (757) 898-8031, W4RTZ. 2/00

Virginia Beach ARC. Meets 1st Thurs./monthly, 7:30 p.m., Virginia Wesleyan College, Wesleyan Dr. off N. Hampton, Village 2 Commons, Graybeale Bldg., Virginia Bch, VA. 2/00

WASHINGTON

The Mike & Key Amateur Radio Club. Meets 3rd Sat./monthly, 10 a.m., Salvation Army Renton HQ., 720 Tobin St., Renton, WA. Talk-in on 146.82(-) (103.5 CTCSS) rptr. Doors open 9:30 a.m. 5/00

WEST VIRGINIA

Jackson County Amateur Radio Club. Meets 1st Thurs./monthly, 7:30 p.m., Saint John Episcopal Church of Ripley. Net Mon. 9 p.m. on 146.67(-) WD8JNU/R. Info: D. Tennant, N8ZYB, Rt. 1, Box 188, Mt. Alto, WV 25264. 7/00

Tri-State Amateur Radio Assn. Meets 3rd Tues./monthly, 7 p.m.,The American Red Cross, 111 Veteran's Memorial Blvd., Huntington, WV. 5/00

NATIONAL

Bicycle Mobile Hams of America. 46 states/6 nations membership. Annual Forum at Hamvention. Net: 14.253, 1st & 3rd Sun., 2000 UTC. Info, sample newsletter: SASE to BMHA, Box 4009-W, Boulder, CO 80306. 2/00

New and special keys

Even though this is the August issue of ***Worldradio***, I am writing this having just returned from the Hamvention in Dayton, Ohio. I am happy to report that interest in Morse code is alive and thriving. Sales of keys and CW rig kits were brisk. I contributed to the economy by purchasing two new keys for my collection. I couldn't resist the Millennium Bug, also known as the Blue Racer 2000, by Vibroplex. This beauty is very patriotic looking, with a flag-blue base and red paddles. It may sound silly, but I am going to save it to use the first time during 4th of July weekend. Most women have outfits they save for special occasions; I have special keys for different occasions. Now that I think about it, clothes would probably be less expensive!

The other key I bought is a beautiful hand-tooled brass iambic, Model R-3A, by J.M. March of Winchester, Virginia, but I am not going to wait until next March to put it on the air. March is coming out with a straight key soon. I am looking forward to adding one of those to my collection, as I am a straight key aficionado.

I spent most of my time at Dayton behind the FISTS CW Club booth. This was the busiest year to date for FISTS. Another indication that interest in Morse code is booming is the fact that we welcomed over 100 new members into FISTS during Hamvention weekend. I'm happy to tell you that Rick McCusker, WF6O, the Editor of ***Worldradio***, joined the ranks of FISTS at Dayton. I hope this is an indication that ***Worldradio*** will keep its positive attitude towards the code. My sincere thanks to those who took the time to stop at the booth and introduce yourselves to me. It was a pleasure to meet so many kindred spirits. I appreciate the encouragement and kind words about this column and my work with FISTS.

Jack Sippel, KUØKU, tells me that while on a trip to the Capitol in Washington D.C., he noticed a three foot by two foot bronze plaque commemorating Samuel F. B. Morse and his contributions to our country. The plaque is located in the lower level corridor leading to the old Supreme Court chambers. Does anyone know the history of this plaque? Jack tried contacting the archives at the White House without success. I know that Morse painted a portrait of one of our presidents, which is hanging in the White House, but the plaque is news to me.

In my search to find out information about the Morse plaque, I discovered that there is a monument commemorating Samuel Morse in Arroyo, Puerto Rico. The Puerto Rico tourism board lists the monument as one of the major attractions of the Island, but I couldn't find out any more information about it. Can anyone fill me in?

How was your Field Day? I'll be spending Field Day with the FISTS of Michigan. We set up on the football field of a high school. Traditionally, we've done more ragchewing with each other than operating on the air, but we usually manage to keep two stations going for the entire event. I hope we do as well this year. Field Day is a time for comaraderie, but it's also a time to test your emergency skills and operating technique. Was there anything you did differently this year that improved the quality of your Field Day? I know others would benefit from hearing the experiences of other groups. I'd love to hear about your Field Day, so drop me a note! I'll share stories about this year's FISTS of MI Field Day in my next column and include as many of your comments as space permits.

Have you considered putting the experience you gained during Field Day to use this summer? Setting up a radio display in a public place is one of the best ways to showcase our hobby and Morse code.

Summer is the perfect time for this, not only because of the nice weather but because this time of year many towns have festivals and fairs. Contact the local officials and request space to set up a radio display.

If you have the station set up so people can hear the dits and dahs as they pass by, I guarantee you'll have an audience. If you can't get a club effort together, all you need are a couple people; one to operate and one to talk to the folks who stop in to see what's going on. Offer to send traffic messages. Display a map of the U.S. (or the world, depending on the quality of the antenna setup you're able to erect) and mark off locations of the stations you contact.

One annual event that is always popular and growing every year is the Green County Wisconsin's Depot Days. Fritz Smocke KA9GYX, Sid Vaughan NØDJD, Scott Feldt, KC9YI, and Paul DeWitte, K9OT, organized a telegraphy demonstration during Depot Days, 24-25 April. They established Ham stations in three of Green County's old railroad depots: Monroe, New Glarus and Brodhead. To give the stations the ambiance of an old-time depot, Fritz, Sid, Scott and Paul set up sound-actuated sounders. Sounders are instruments that make the clacking sounds that enabled railroad telegraphers to decipher the messages sent over the telegraph wires. The visitors were fascinated by the display. They were able to send souvenir "telegrams" from one station to another by "telegraph", using CW by way of Amateur Radio. Sending over 85 messages kept the operators busy!

This is just one example of how you can present the use of Morse code to the public in a way they can understand. It shows code to be useful and fun — and a bit mysterious. Children, in particular, are attracted to sending messages using code. A public display can make an impression that can start them on their way to a hobby that they can enjoy for a lifetime. — *Nancy Kott, WZ8C, can be reached at: P.O. Box 47, Hadley, MI 48440-0047 or via email at: nancy@tir.com.*

A "T" network designer

In our last column we briefly touched on impedance matching using the most efficient and basic of devices, the L network. To recap, in an ac circuit, most energy is transferred from the source impedance to the load impedance when the two are equal, as when a 50-ohm transmitter transfers energy to a 50-ohm transmission line, or when a 50-ohm transmission line transfers energy to a 50-ohm antenna.

Quite often, however, the source, line or load impedances do not match, as in the case of a 2000-ohm vacuum tube plate impedance feeding a 50-ohm coax line, or a 50-ohm line connected to a 72-ohm antenna, or of a 72-ohm antenna feeding the high impedance gate of a preamplifier.

An L network makes use of the theorem that for every circuit consisting of resistance and reactance in series, there is an equivalent circuit that consists of resistance and reactance in parallel. And not only will the impedances match, so will the phase angle.

```
10 CLS: PRINT "T_TUNER.BAS, BY KD5DL, 8/99": PRINT
20 INPUT"SOURCE RESISTANCE ";A:INPUT"LOAD RESISTANCE ";B
30 INPUT "OUTPUT Q ";Q: INPUT "FREQUENCY (MHZ) ";F
40 XLS=Q*B: RV=B*(Q^2+1): XLP=RV/Q: Q2=SQR(RV/A-1)
50 XSP=RV/Q2: XSS=A*Q2: XP=(1/XLP+1/XSP)^-1: D=.159155: E=159155
60 PRINT "SOURCE SERIES REACTANCE =";XSS;"OHMS, WHICH IS";D*XSS/F;"uH OR";E/
   (F*XSS);"pF,"
70 PRINT "LOAD SERIES REACTANCE =";XLS;"OHMS, WHICH IS";D*XLS/F;"uH
   OR";E/(F*XLS);"pF,"
80 PRINT "PARALLEL REACTANCE =";XP;"OHMS, WHICH IS";E/(F*XP);"pF OR";D*XP/
   F;"uH."
90 PRINT: INPUT "DO ANOTHER ";A$
100 PRINT: IF A$="y" OR A$="Y" THEN 20 ELSE END
```

The L network uses only two reactive components to accomplish the matching, a capacitor and an inductor (coil). Their values are determined by the two impedances they are to match and the operating frequency of the network. The highest value reactance is inserted in parallel with the highest impedance, and the lower value reactance is placed in series with the lowest impedance. Schematically, this arrangement looks like the Greek capital letter gamma, or an inverted "L." Hence the network's name.

The BASIC listing for L_MATCH.BAS was in our June column, and is also on ***Worldradio***'s web site at www.wr6wr.com. The way we determined reactance values was to first find the "operating Q" of the circuit, and we did this by taking the square root of the product of impedance in the parallel leg divided by the impedance of the series leg minus 1 (Q=SQR(Rp/Rs-1)). In the example we used for matching a 50-ohm transmitter to a 12-ohm antenna, Q works out to be SQR(50/12-1) = SQR(4.167-1) = SQR(3.167) = 1.78. Such a low Q results in a highly-efficient energy transfer, but does little to attenuate harmonics.

A somewhat higher Q would attenuate more of the out-of-band harmonics, but would also have higher circulating currents, meaning greater power losses and inefficiency. But it makes little difference because L network Q is pretty much set by the range of the two impedances that are to be matched. What if we could take two L networks and place them back-to-back? Q then would not be restricted; we could select whatever value we desired for one network and use the second network to match the resulting "image" resistance to the opposite-side impedance.

Figure 1a shows how this is done. Say we want to match our 50-ohm transmitter to a 12-ohm mobile antenna, but we want to use a Q of around 10. In this case we select the values for the output network, using the Q to find first the reactance of the series arm at the antenna, which is R(load)*Q = 12*10 = 120 Ohms; then the virtual (image) resistance between the two networks, which is R(load)*(Q^2+1), or 12*101 = 1212 Ohms; and finally the parallel reactance, which is R(virtual)/Q = 1212/10 = 121.2 Ohms.

Now, to match the 50 Ohms of the transmitter to the 1212 Ohms of virtual resistance, we can use our June program. The Q will be SQR(R(virtual)/R(source)-1), or SQR(1212/50-1) = 4.82. The parallel reactance is R(virtual)/Q = 1212/4.82 = 251.45 Ohms, and the series reactance is R(source)*Q = 50*4.82 = 241 Ohms. The back-to-back parallel reactances of the two L sections can be

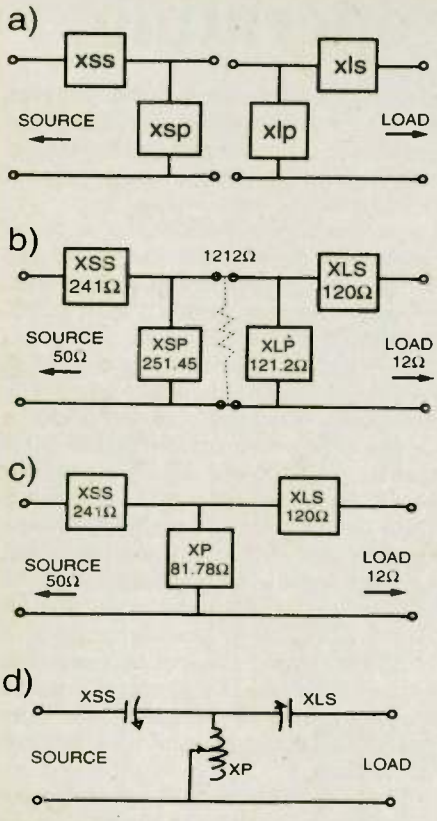


Figure 1

combined algebraically into one value; 1/121.2 + 1/251.45 = 1/R(total), where R(total) = 81.78 Ohms. It should be obvious now that the network has taken the shape of the capital letter "T," and that's why it's called a "T network." If the L sections were placed back to back with their series arms connected, they would take the shape of the Greek letter "pi," and would be called a "pi network." Interestingly enough, almost all of today's antenna tuners (a.k.a. antenna tuning units, antenna matching units, transmatches, etc.) are of the T network design.

This month's BASIC listing, then, is a T network designer.

Lines 20 and 30 take input values for the network's parameters. Lines 40 and 50 do the math and lines 60-80 print the results. In the math lines, A is the source impedance and B is the load impedance to be matched. Q is the quality factor (more on it in a moment). XLS is the computed reactance for the load's series arm, XLP is the load's parallel reactance, and RV is the resulting virtual resistance between the two L sections. Q2 is the Q necessary to match the source impedance with the virtual resistance at the input of the second L network. XSP is the source's parallel reactance and XSS is the source series reactance. The D and F variables help convert all the reactances into actual component values.

If capacitors are used in the series arms, as in most antenna tuners, an inductor needs to be in the parallel leg. Conversely, if coils are used in the series arms, a capacitor must be the parallel element. From the standpoint of harmonic suppression, a T network with inductors in the series arms and a capacitor connecting their junction to ground is far better than the common two-capacitor, one-coil arrangement. Q is a subjective value, at best.

As we have seen, a low value is generally best for network efficiency. Higher values, while reducing harmonics and providing for greater selectivity, tend to have greater circulating currents, meaning greater power losses. For matching a transmitter to its antenna the lowest loaded Q offers the optimum efficiency. For most amateur work, network Qs are seldom greater than 20 and most of the filter data published by the ARRL set Q to values around 10 or 12. For antenna tuners, Q values below 10 are quite normal.

We included in this month's program a routine to convert reactances to actual inductor or capacitor values. If you were building a matching network specifically for one or two bands, you need only run the program with the highest and lowest frequencies you expect to use, and the program will tell you exactly what values of inductance and capacitance fall within those ranges. You might, however, want to cheat a little and plan on load reactance ranges from about 1/3 the anticipated value to three times the value. That way, you're covered if your load impedance isn't quite what you anticipated. Note, too, that we are using the term "resistance" to mean the resistive component of both the source and load impedances, simply because it's easier to write a program with the simpler term. In actual practice the source may have some reactance mixed in with the resistance, and an antenna almost surely will, especially as the operating frequency changes.

Plan on making the series arm reactances variable, and somewhat greater than what our program calls for, to plan for these source and load reactances. Finally, we need not stop there. We can continue to add L sections to basic T and pi networks for even greater harmonic attenuation. Quite often this is the case in transmitter design, where FCC rules specify minimum harmonic attenuation.

For further discussion refer to a good reference book, such as the *ARRL Handbook*. I hope this helps you better understand how antenna tuners work. Of course, this isn't the whole story — for that you need to understand how transmission lines work and how antenna matching units duplicate variable-length transmission lines and quarter-wavelength stubs. Maybe we'll save that for some other time. Meanwhile, stay radio active.

Phase 3d news, UO-36 now operating

Hello everyone! I hope you are all enjoying your summer, whether vacationing, just relaxing, or working the birds!

Dayton was the usual fun time — but for satellite operators, it was a time for rejoicing! It was announced in a press release by AMSAT at the show (which was printed last month in ***Worldradio***) that negotiations are nearly finished concerning an alternate ride for our Phase 3D satellite, and that it may go up as early as this coming October! This was very exciting news, since we've all been waiting for some positive information in this regard. All we can do now is keep our fingers crossed and hope for the best from our German friends.

One of the fun things I picked up at the booth in Dayton was a copy of the new Phase 3D model kit. Steve Thompson, K5PK, developed the kit and has offered it through AMSAT-NA as a fund raising device for Phase 3D. The 1/23rd scale, 11-1/2" wingspan, full color 1440 dpi, glossy card stock model kit is still available through the AMSAT-NA office. If you would like to support the Phase-3D program, please send your minimum donation of $17 to AMSAT-NA to receive your kit. You can send your check, call, name and address to Martha at:

AMSAT-NA (Phase-3D kit)
850 Sligo Ave.
Silver Springs,MD
20910-4703

or order by Phone: (301) 589-6062 or FAX (301) 608-3410.

For additional details and a picture of a completed kit see: www.amsat.org/amsat/fun/model_photos/.

As I write this column, Shuttle astronauts have been doing a bit of "housekeeping" on the International Space Station. *Discovery* dropped off 3,600 pounds of supplies and hardware for the first crew, scheduled to arrive early next year. In Kazakhstan, the Service Module has arrived by train for the final months of its processing for launch atop a Proton booster — like the rocket that launched the Zarya control module six months ago. After being launched this fall, the module will provide the living quarters for the crews. Updates on the status of its launch preparations are available on the web at: www-pao.ksc.nasa.gov/kscpao/status/status.htm

The International Space Station is in an orbit with a high point of 251 statute miles and a low point of 237 statute miles, circling the Earth once approximately every 92 minutes. The Station has completed more than 2,826 orbits of Earth since its launch. As it passes overhead at dawn or dusk, the station is easily visible from the ground, and it will become even brighter once *Discovery* has docked. Space Station viewing opportunities for locations worldwide are available on the web at: http://spaceflight.nasa.gov/realdata/sightings/

Another new satellite is soon to be released for amateur use! Hank, N4AFL, has reported that the StenSat picosatellite was recently delivered. StenSat is a small (12-cubic-inch, 8.2-ounce) satellite, which is intended to operate as a single channel mode-J (70-cm uplink, 2-meter downlink) FM voice repeater. StenSat will also periodically transmit 1200-baud AX.25 telemetry. Projected launch date is 15 September 1999. N4AFL told the AMSAT News Service that if StenSat survives final system integration and final testing and if Stanford is granted access to the launch platform — the team hopes to build a revision 2 StenSat between now and September. Keep watching the various amateur news services (like AMSAT's!) for more up-to-the-minute information.

The next Space Amateur Radio EXperiment shuttle flight has again been delayed. The flight will carry the Chandra X-ray Observatory. NASA has decided to postpone mating the observatory with its inertial upper stage pending additional progress in the investigation of recent launch problems with several defense satellites. The launch had been set for July. The STS-93 Mission Commander is Eileen M. Collins, KD5EDS. Also aboard will be Mission Specialist Michel Tognini, KD5EJZ, and Mission Specialist Catherine G. Coleman, KC5ZTH. Students at five schools in Texas, Rhode Island, Virginia, and Florida are on the list to talk to the STS-93 crew via Amateur Radio. The STS-93 mission is the only SAREX opportunity scheduled for 1999.

For those interested in NASA-TV, Rich, KD6ODU, mentioned on AMSAT-BB, a web site named "NASA - KSC Video Feed." It has current RealMedia Streaming Video Feed of Processing and STS-96 NASA Select Coverage, along with other feeds from NASA-TV. It appears it's definitely worth a visit. The URL is: www.ksc.nasa.gov/shuttle/countdown/video/video90.html

The staff of Kopernik Observatory and Amateur Radio volunteers celebrated the observatory's 25th anniversary 05 June with a special event that also honored the memory of one of the observatory's founders, Kaz Deskur,

K2ZRO, who died in 1984. Amateur Radio club station KB2UYF is located at the observatory, and paperwork has been submitted to the FCC to change the station's call sign to K2ZRO.

Deskur, a satellite pioneer, operated the observatory's Amateur Radio station under his call sign for many years. In the early days of the OSCAR program and AMSAT, K2ZRO was a familiar call sign. Deskur designed the original OSCARLOCATOR, a device used to track satellites before the advent of personal computers. In addition, as I've mentioned in this column before, the AO-13 Station Performance Tests were known as the "ZRO tests" — these tests were run on Oscar 13 to test the receiving performance of stations by copying a five-digit code on CW beginning at the level of the beacon, and then dropping in continuous half-power increments until 10 levels were complete (the beacon being Level 1, etc.). It was a great deal of fun, and in my own situation made me realize that I had done a good job in setting up my equipment!

The Kopernik Observatory is establishing a "Wall of Honor for Amateur Radio Satellites" to honor Kaz Deskur. Hams who knew or worked with him are invited to send their QSL cards for display on this wall. Send cards in an envelope to Kopernik Space & Science Education Center (KA2CNG-TR), 30 Front St, Binghamton, NY 13905.

Since my last column, another bird went up successfully! UoSAT-12, also officially known as UoSAT/OSCAR 36, or simply UO-36, is Amateur Radio's newest satellite. It carries a number of imaging payloads, digital store-and-forward communications and mode L/S transponders.

The first images of Earth from the four remote sensing CCD cameras onboard the mini-satellite were successfully received. The first image from the 10-meter resolution panchromatic camera was taken over Texas and later downloaded for evaluation. The image showed good detail, confirming camera function and focus. After adjusting the camera, a second image over London was captured.

Recently a panchromatic image and a 32-meter single-band image from one of the two multi-spectral cameras were captured simultaneously over Los Angeles, clearly showing airport runways, housing, dockyards and freeways.

UO-36 also carries a wide-angle color CCD imager for meteorological imaging and this has been used regularly for cloud cover monitoring. The data from the imaging CCD cameras are compressed on-board the spacecraft prior to transmission to the ground. Very highly-compressed, quick-look 'thumbnail' images are also available and enable ground operators to assess the image quality and content prior to downloading the full image.

UO-36 has been heard transmitting data on 437.025 MHz at 38400 baud. Usually this downlink is operational in addition to the 9k6 downlink on 437.400 MHz when the spacecraft is in sunlight or in range of the command station in Surrey, England. Peter Guelzow, DB2OS, one of the Phase 3D command stations, shares an almost identical footprint with the OSCAR-36 command station in Surrey, and was able to "grab" several thumbnail and higher resolution earth images taken by OSCAR-36 in recent weeks while they were being downloaded by the OSCAR-36 command station.

Peter used some special receiving equipment for receiving the information, since reception of data at that speed requires very wide bandwidth filters! In fact, because of the width, doppler shift is of no concern.

He reports receiving relatively strong 70-cm downlink signals from OSCAR-36 due to the satellite's quadrifilar antennas and 10-watt output power..

He has been able to capture large files without any missing packets. He's able to download about 1.5 MB of data data per pass depending on how actively Surrey is downloading pictures. Downloading these image files at 9600 baud is nearly hopeless, and Peter is looking forward to seeing the downlink running at 76.8 Kbaud.

Chris Jackson, G7UPN, of the command team in Surrey, says the 437.025MHz downlink will eventually be switched to 437.400 MHz (the current 9k6 downlink frequency), and the current 9600 baud operations on this frequency will be switched off.

I'm going to wrap it up here because I'm really out of space right now — but there is a lot going on in the satellite world! My thanks as always to the AMSAT news service, John Maglicane KD2BD and *SpaceNews*, and all of you for writing and staying in touch. — *Terry Doudes, WB8CKI, can be reached at: 344 E. Fifth Ave., Lancaster, OH 43130 or via email at: wb8cki@amsatorg.*

10-10 Convention

Chuck Imsande, W6YLJ
10-10 19636

The 7th Biennial 10-10 Convention is about to happen in Oak Ridge, TN, 11-13 June 1999, as this column is being written. From all advance indications, this may be the best of the 10-10 conventions held to date. Pre-registration is closed and there are 203 pre-registrations. The banquet is a sell-out with 185 tickets sold. There are a record number of Chapter Tables reserved and that should make for a lot of friendly 10-10 eyeball contacts. In addition to the convention activities, the 10-10 Board of Directors will hold their annual meeting with a get together on Thursday night and an all day meeting on Friday. There are a number of important issues on the agenda. It will definitely be a busy 10-10 weekend.

A complete report of the convention activities as well as results of the Board of Directors meeting will be in this column in the October issue of ***Worldradio***.

Battle Road Chapter CM becomes SK

We are saddened to report that long time 10-10er Richard (Rich) Parent, KC1FV, #45274, became a Silent Key in late May. Rich was instrumental in keeping the Battle Road Chapter of 10-10 active and one of the more sought after chapters in 10-10 with a membership of approximately 1200 members world wide.

Formed in 1990, the Battle Road Chapter has the theme that parallels the movement of the British Troops against the Colonists in the 1700s, the battles and the battlegrounds that were encountered. The Chapter has an impressive web page at: www.qsl.net/kc1fv/brchap.html. The Battle Road Chapter can also be accessed from the 10-10 web site through the 10-10 Member Home Pages link.

10-10 web site

Modifications, improvements and additions are what's happening at the 10-10 web site. The 10-10 Internet Coordinator, L.B. Cebik, W4RNL, #41159, continues to add new items and improve our web site. Not only will you find everything you want to know about 10-10 but there are links to home pages of members, links to other Amateur Radio places, information and much more. You will find the 10-10 web site at www.ten-ten.org. 10-10 member Mark Downing, WM7D, #67354, of Costa Mesa, CA, maintains another interesting site. At Mark's web site you can enter a call and get the name, address, license information (issued, expires, previous calls), location including latitude and longitude, current weather information of the closest weather station, and a map of the area of the station. And one more thing — Mark lists the 10-10 number of the station. Check out Mark's site at www.wm7d.net/fcc/callsign.html

10-10 at Dayton

A 10-10 forum at Dayton drew a group of about 50 to hear the latest 10-10 information from President Tom Henderson, K4CIH, #33233. An interesting presentation by Treasurer Keith Schlottman, KI7RK, #63324, on the subject of 10-10 and Y2K was the highlight of the forum. We have all heard about the Y2K problem (or potential problem), but not the way Keith presented it!

Highest 10-10 number

The highest 10-10 number issued as of the end of May was #70736 and was issued to Arthur Owens, KG4BNQ, of Atlanta, GA. 10-10 continues to grow as more and more new members keep coming aboard each month. We welcome all of the new 10-10 members and hope they will participate in all of the 10-10 activities.

10-10 logging and paper chaser program

I have on several occasions discussed the Windows based WIN1010 program in this column. Dick Corlew, NC6V, #25057, and avid 10-10 paper chaser, has published his review of the WIN1010 program. Here is what Dick says:

Intended for those Hams who wish to pursue 10X numbers, contests and certificates and have a provision for general daily computer logging of contacts. WIN1010 is a combination of 4 integrated modules. The original county hunter (CH) and contest modules now have been joined by the daily log (DL) and the certificate chasers (CC) modules. Each module has its own functions, and the capability of sharing the contact data.

WIN1010 is a super data management tool for tracking and application for all the 10-10 International Awards

as well as most of the certificates and seals offered by the various Chapters of 10-10. It has been developed as a user-friendly program with documentation available from within the program under the 'Help' pull-down menus. The Help file can be printed if desired. The program features easy data entry with minimum typing. Cursor movement is by the mouse or keyboard. In the certificate chasers (CC) module, ample use of keypad shortcuts as well as mouse clicks is available, making data entry simple.

WIN1010 has support for Buckmaster, Flying Horse and QRZ Call Book CD's as well as the XXIP and the K4HAV FCC Database. The 1010 and VP databases are also included. Two-station support is also optional for those with Club Stations or OM/XYL teams. User ID File provided by request via e-mail for Club Station or XYL operator.

A huge feature is the ability to import data from the very popular and widely used DB10 program by Don Ruf, KBØON, #29849. Don has decided to no longer distribute or update his DB10 DOS program.

The program is full of features and capabilities, too many to list here. More information and a free DEMO WIN1010 program is available for download from Jim Hardy, K4HAV. #17605, at: http://hds.net/win1010dl.htm. The demo version will allow for up to 25 contacts to be entered, giving you time to experiment and "play around" with the program.

Thanks to Dick, NC6V, for his review and write up of the program. I can say from personal experience that the program works and works well. It sure beats the old days of keeping all of your 10-10 contacts and records in 3x5" index cards.

Information about 10-10?

If you would like information about 10-10, and how you can become a member and receive your very own unique 10-10 number send $2.00 and an address label for the return of your information package to: Jeff Ritter, N5VAV, #59692, 10-10 Information Manager, 6959 Hovenkamp, Richland Hills, TX 76118. No SASE please as the information package requires a 9 x 12 envelope. You will receive a copy of the 14-page Prospective New Member Brochure which contains everything you want to know about the 10-10 organization, a listing of all 10-10 Chapters, their day, time, and frequency of net operation and an application form. Also enclosed will be a copy of the 8-page QSO Party Information Brochure and a copy of the latest issue of the *10-10 International News*, the 32 page 10-10 quarterly magazine.

If you have lost, or forgotten, your 10-10 number, send the same as above to Jeff and you will get the information package along with your original 10-10 number.

If your membership in 10-10 has expired and you would like to renew your dues, send your dues ($10.00/year or $25.00 for three years) to: 10-10 International Net, Inc., Attention: Dues Renewal, 643 N. 98th Street #142, Omaha, NE 68114-2342. You will become an "ACTIVE" member again and receive all of the benefits of 10-10 including the quarterly *10-10 International News*. Remember 10-10 numbers are issued for life and your originally issued number is always yours.

Phase 3D preparations in high gear

Preparations to launch the Phase 3D Amateur Radio satellite are moving full steam ahead, even though a definite launch opportunity remains in limbo. "We are pressing forward to be prepared for a launch in October," says AMSAT Phase 3D Laboratory and Integration Manager Lou McFadin, W5DID.

An announcement at the Dayton Hamvention from Phase 3D Project Director Karl Meinzer, DJ4ZC, raised the possibility of a launch as early as October. AMSAT has declined to name the launch agency or vehicle, and AMSAT-NA officials have cautioned that the October date is very tentative and just the opening of a launch window. — *ARRL Letter*

The QRP 'SNitchbox

Several months ago, the low power enthusiasts' Internet mail group QRP-L was buzzing about regenerative receivers — those wonderful circuits so popular in the early days of Amateur Radio.

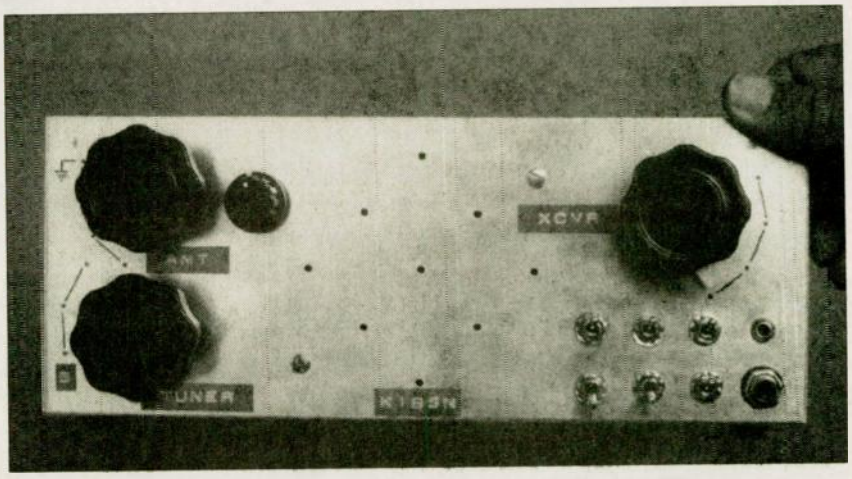
The struck a nostalgic chord. As a burgeoning QRPer in early 1965, my first homebrew receiver was a regen circuit from the ARRL's *How to Become a Radio Amateur.* A pair of 6AQ5s — one the detector; the other a stage of audio — brought 80M to life in my bedroom. That receiver is long gone, but the memories of it are vivid. It was a special time for a wide-eyed 14-year-old.

In those days, it was common for a receiver's loudspeaker to be facing the operator — unlike many modern-era radios whose speakers are mounted in the rig's top cover, facing the ceiling. For me it was always easier to 'bond' with a piece of gear whose speaker was only a few inches from my face, allowing me to lean-in close when conditions were challenging. It was part of the reason I so loved that ol' regen.

The QRP-L discussion reminded me of how much I've missed having a front-facing loudspeaker in my radio shack today.

An aluminum enclosure 10 inches wide, 8 inches deep and 4 inches high had been sitting under the workbench for several years just crying for attention. Why not put it to work? It would be a good home for a 3.5-inch full range speaker I'd purchased recently at Radio Shack (RS 40-1333), and the box was deep enough to allow vertical mounting.

Holding the speaker against the box's front panel, I could see there was going to be a lot of space left over once it was bolted into place. And that's when things started to get interesting.



The front panel of the 'SNitchbox gives the QRPer options for several using transceivers, two tuners, three antennas, audio amplification and filtering, and much more.

In the June 1995 ***Worldradio*** QRP column I had written about a small Radio Shack audio amplifier kit. With a few simple modifications the unit became the foundation for something I called the Audio Ratchet — a multi-featured outboard amplifier which I've been using for several years here to boost the audio of various QRP transceivers.

"Wouldn't it be nice," I asked myself, "to have an Audio Ratchet inside the box with this front-facing speaker?" Of course it would, so the amplifier was added to the design.

Now the Ratchet, like a lot of other stuff around the shack, requires 12 volts DC. Since I have only one power supply, for several years I'd been feeding that supply's output into a small metal box fitted with four jacks on the back — a sort of homebrew 12-volt 'power strip,' if you will.

"Wouldn't it be nice to shift that

'power strip' utility to the back panel of the speaker box?" I asked. The power supply output could be fed into a jack on the speaker box's back panel. It would power the Ratchet and I could add a bank of jacks to the box to create easy 12-volt DC access for other station gear, eliminating the need for that other 'power strip.'

You can see what was happening. Imagination was taking over. One thing quickly led to another and before long all that open space was disappearing as the KI6SN switchbox and audio amplifier, the 'SNitchbox, came to life.

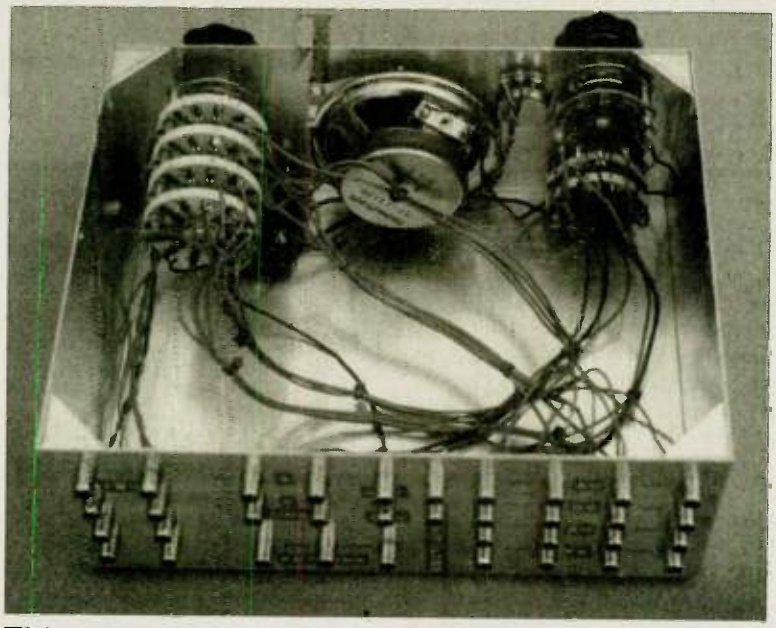
What can it do? In a few seconds of switch-flipping from the operating chair, the QRPer can:

- select one of up-to-four transceivers plugged into the back panel (automatically shifting your keyer and 12-volt DC line to the radio you'd like to use, and shifting that radio's audio and antenna to the audio and antenna lines of the 'SNitchbox).
- select one of three antennas (a 40-meter dipole, G5RV or a tri-band beam, for example).
- select from either of two antenna tuners, or bypass them.
- add or bypass an outboard audio filter — in my case, a SCAF.
- apply or remove 12 Volts DC to other QRP accessories from around your shack plugged into the box's back panel power grid.
- switch in or out the inboard Audio Ratchet, with the added option of choosing between 26- and 46-dB gain, or mute the entire system.
- switch between the speaker or headphones. A diamond-shaped pattern of nine small holes shows the center position of the 3.5-inch speaker behind the front panel. On the panel's upper left is a knob marked ANT, allowing the operator to turn a SP4T (single pole, quadruple throw) wafer switch to select from three antennas that can be plugged into the back panel. The switch's fourth position grounds the system — not a bad option to have, especially when thunderstorms are in the area.

Below the ANT switch is one marked TUNER. It's a DP3T (double pole, triple throw) ceramic wafer switch allowing the operator to choose either of up-to-two antenna tuners plugged into the back panel, or to bypass the tuners altogether in the position marked B.

To the right of the ANT switch is a potentiometer that adjusts the volume of the Audio Ratchet inside.

On the far right of the front panel is a knob marked XCVR — a 4P4T ceramic wafer switch that selects one of the up-to-four transceivers you've patched to the back panel.



Thirty-five jacks across the back of the switch and audio amplification unit serve as input and output ports.

Six toggle switches below the XCVR knob round out the switching options.

On the top row, from the left, is:

- the Audio Ratchet ON/OFF switch (the audio amplifier is bypassed in the OFF position of this DPDT switch).
- a three-position FILTER switch. I have the outboard Vectronics VEC-821 SCAF filter plugged into the back panel. A DPDT switch with center-off position is used in this application. When the switch is up, the '821 is brought on line. When the switch is down the '821 is bypassed. In the center position the audio path is broken, so 'SNitchbox audio output is muted. A wide variety of audio filters could be used with this unit.
- an SPST switch which applies or removes 12 Volts DC to the XCVR se-

QRP

lection switch.

The bottom row of switches features, from left:

• an SPDT speaker/headphones selection switch.

• an SPST switch to select either 26- or 46-dB gain from the Audio Ratchet.

• an SPST switch to apply or remove power from other station accessories receiving 12 Volts through the grid of power jacks on the 'SNitchbox's rear panel.

On the lower right of the front panel are headphone jacks — one for a quarter-inch plug; another for the small Walkman-style earphone plugs.

Across the back panel are 35 RCA-style phono jacks for the multiple inputs and outputs:

• eight jacks on the left of the rear panel make up the 12-volt power grid, for powering outboard station accessories such as a keyer and SCAF filter.

• four jacks to the right of the power grid on the upper panel are for input and output of up-to-two antenna tuners, which can be selected from the front panel switch.

• to the right of the TUNER jacks are jacks for 12-volt input from your station power supply, and keyer input.

• below the TUNER, KEYER and 12V INPUT are jacks for up-to-three antennas.

• further to the right are input and output jacks for an outboard audio filter.

• on the far right are 16 jacks (mounted in four rows of four) to accommodate up-to-four different transceivers — as selected from the front panel. Each row, from top to bottom, accepts AUDIO INPUT (from the transceiver), and KEY LINE, ANTENNA and 12V-DC (all to the transceiver).

There are many builders who groan at the thought of using RCA phono jacks, but my decision to use them is based on years of experience. The rap is that they tend to wear out in time, and easily loosen from their panel position. Well, if you think about it, with the 'SNitchbox you're eliminating the need to do much plugging and unplugging of station cables. After all, with up to four transceivers, two tuners, an audio filter and three antennas to choose from with the flip of several front panel switches, how much cable swapping is needed?

After getting the 35 jacks in place, I dabbed a glob of fingernail polish around the base of the nut and screw joint of each one on the inside rear panel. That'll reduce the chance of things jiggling loose. I also put a touch of clear Super Glue where the jack meets the chassis on the outside of the rear panel.

The wafer switches were obtained from friends and area swap meets, but they are also available from mail order houses. And if your switching desires are not quite as ambitious as mine, Radio Shack also stocks wafer switches that would work nicely in more modest applications.

Looking into the 'SNitchbox from the back panel, you see the four-pole XCVR ceramic wafer switch on the inside left of the front panel. Hidden beneath it is the Audio Ratchet amplifier and front panel toggle switches. In the center is the Radio Shack speaker. On the right are the ANT (above) and TUNER (below) wafer switches.

It does not take an engineer to design a unit like this, I'm proof of that. With a piece of graph paper and a bit of careful sketching you could come up with a switchbox design of your own, suited specifically to the needs of your radio shack.

If you'd like a look at the paperwork and specifics of my design, drop me a self-addressed, stamped envelope and I'll be happy to send them to you.

A few weeks of 'SNitchbox operation has been as interesting as it has been fun. In addition to the luxury of quickly and easily mixing and matching QRP transceivers, tuners, antennas, audio filtering and amplification, the physical construction of the unit has yielded a neat side benefit. When the Audio Ratchet and Vectronics '821 SCAF filter are in line, the 'SNitchbox has a 'sweet spot' — the cabinet resonates at a certain audio frequency. Even the weakest signals, when narrowed by the SCAF and properly amplified, cause the box itself to come alive with resonation, making copy a real pleasure.

Yes, wiring in the 'SNitchbox flies in the face of shielding purists. And there are those who might find small toggle switches suspect when it comes to potential signal losses. But running rigs at the milliwatt level through the unit at KI6SN has resulted in no discernible reduction in output efficiency.

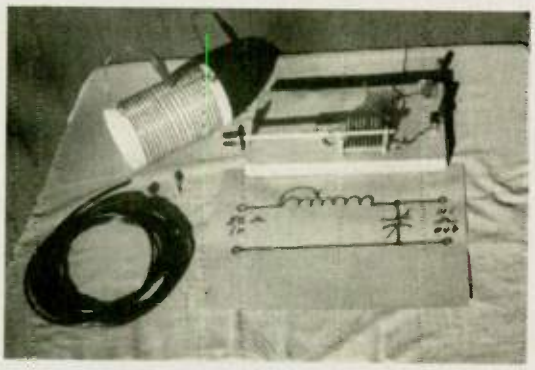
Dozens of contacts made across the high frequency spectrum through the 'SNitchbox are testimony that good things happen inside. So, why not try your hand at a switching unit for your shack? You may be surprised at what emerges from the simplest of ideas.

— Richard Fisher, KI6SN, can be reached at: 1940 Wetherly Way, Riverside, CA 92506 or via e-mail: KI6SN @aol.com.

Ye olde L-network

Kent Bailey, WA4DQU

Over a doorway in my shack is an L-network mounted on a board. I have used the L-network tuner for many years. It's similar to the one in the photograph.



The one in the photograph is the one I use for my outdoor work. I'm cleaning it up for another year of outdoor operating. You can hook a one-half wave length of wire to the top button, lay the wire out on some bushes, (provided the wire is insulated), and work a lot of Hams. In fact, I have worked several hundred miles with a one-half wave insulated wire just laying on the grass. It will work well with other antennas as long as you follow the rules and keep the output impedance higher than the input. You can use open-ended transmission lined to end-feed antennas for example. Just connect the wire from the antenna to the top button and the free wire to the bottom button. Boy, how simple can home-brew be?

You start with a short length of 50-ohm coax from your rig to the coil. I use about 14 feet of coax so I can tie the board to a tree. The inner wire of the coax goes to the beginning of the coil, and the braid goes to the rotor of the capacitor. (The rotor and the frame of the capacitor are already connected together). The knob is insulated from the capacitor so that you don't get burned while adjusting the capacitor (see the dowel between the capacitor and knob). The capacitor is about 180pF with a 1/8" spacing between plates. I don't need that much spacing for low power, but it's lots easier to clean the bugs out on campouts. A broadcast capacitor will work up to 100 Watts or so. If it arcs over, just get one with larger spacing.

The coil is 3" PVC pipe cut 6" long. 3/8 inch holes are drilled a 1/4" from each end. The holes are connected by lines and a slot is cut out. I used a saber saw blade bound to a stick to saw the slot out. Wind 21 turns of #12 house wire on the coil form in about 5 1/2 inches. Space the wires equally. I use 1/8" self-tapping screws at each end to hold the wire. Also leave a little wire sticking up to solder to. Then coat everything but the slot and ends with clear fingernail polish to hold the wire in place.

Mount the coil a little above the board with two screws with PVC stand-offs. Solder the inner wire of the coax, the end wire of the coil and a jumper wire with an alligator clip together at the beginning of the coil. A wire is soldered to the other end of the coil and goes to the stator connection of the capacitor and from the stator connection on the capacitor to the top output button.

The rotor-frame connection of the capacitor goes to the bottom button. That's all there is to it!

The top button could be red for single wires. The bottom button could be black for add-ons and transmission lines.

There's a multitude of things you can learn from this tuner. I use a relative field-strength meter for tune-up. Just tune for maximum output and back off just a hair.

Now the question is, why such a large tuner? It's true that my rig is one-third the size of this tuner and it seems like overkill. It just works better for me. I don't have the equipment to prove it, but I believe I get better output with the large coil. It's a blast to find out what this L-network will radiate.

Carl Luetzelschwab, K9LA

More than just sunspots

As can be seen by the address at the end of my column, I live in the state of Indiana. Many people think of Indiana as a sleepy Midwestern agricultural state. In order to dispel the image of Hoosiers just sitting around watching corn grow and affirm that there indeed is some excitement in the state, one of the amusement parks in Indiana runs an ad on TV that has a crow saying, "There's more than corn in Indiana." My favorite reply is "Yeah, we got soybeans, too."

There's a parallel in the propagation world to the crow's message, and it is "There's more than sunspots in a solar cycle." Let's see what I mean by that.

Starting in my December 1998 column and continuing on a somewhat regular basis, I've been including an update (most of the time in graphical format) of the progress of Cycle 23's smoothed sunspot number (SSN). The SSN is a good indicator of when the higher HF bands will have more consistent worldwide F2 region openings. For example, from world maps of the 4000km maximum usable frequency (maps of MUF(4000)F2), 15M should offer more consistent worldwide propagation when the SSN is above 50 or so. Likewise, 10M should offer more consistent worldwide propagation when the SSN is above 80 or so. Remember that those ionospheric maps give monthly median values, so my estimates of when 15M and 10M should be open for worldwide propagation are statistical in nature, not absolutes.

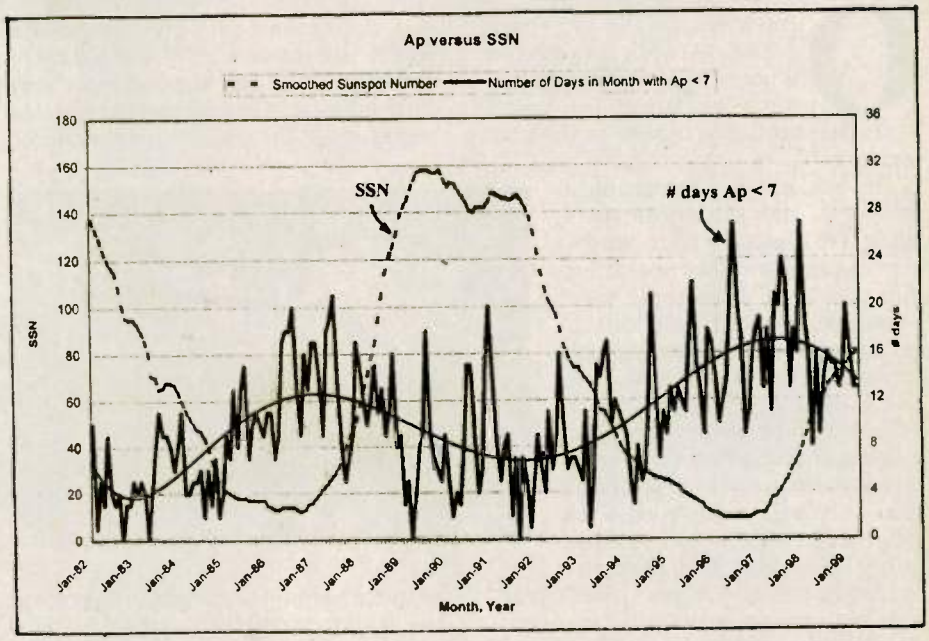


Figure 1 Geomagnetic Field Activity (Ap) versus SSN

With the SSN now approaching 90, I hope you're taking advantage of the openings on 17M, 15M, 12M, and 10M.

But the sunspot count isn't the whole story. There are other factors that go along with a sunspot cycle that impact propagation. Three such factors are geomagnetic field activity, absorption, and hop structure. Let's take a look at these factors. We'll see some interesting, and relevant, things. Let's start with geomagnetic field activity over a sunspot cycle.

Figure 1 is a plot of the SSN (dashed line) for each month from the end of Cycle 21 up through March 1999 (rising portion of Cycle 23). Also shown is the number of days during each month that the planetary A index Ap was less than or equal to 7, signifying a quiet geomagnetic field (good for HF propagation). The actual Ap data is kind of spiky as can be seen, so I added a trendline to better see what's going on.

What's obvious from the plot is that the quietest period of a sunspot cycle, magnetically speaking, is the couple of years after sunspot minimum.

That's when the trendline is maximum — a couple of years after SSN minimum. This result is not unique to the solar minimums between Cycle 21 and 22 and between Cycle 22 and 23 — it shows up for all solar minimums.

This implies that paths that go to the higher latitudes (USA to Europe and Japan, for example) may be tougher as we progress up Cycle 23 after the first couple years. This probably has the biggest affect on our lower HF bands (160M and 80M), where propagation is very dependent on geomagnetic field activity. For the higher HF bands (15M and 10M), this is a "give-and-take" situation — we need the sunspots for propagation on these bands, and as a consequence we have to live with the disruptions from the higher geomagnetic field activity. Paths that stay at low latitudes are least affected.

Digging deeper into the Ap data also shows a dependence on season — the most disturbed times during a year are around the equinoxes, with the quiet-

est times during summer and winter. This is good information to know if you're planning a DXpedition. Again, the paths that stay at low latitudes are least affected.

And digging even a bit deeper into this data shows recurring geomagnetic field activity at 27-day intervals, which is the time it takes for the sun to make one rotation. Thus one can make a good guess of possible future magnetic activity by plotting historical data and looking ahead in 27-day intervals.

Now let's look at absorption over a sunspot cycle. We have to look at both the D region and the E region, as the frequency of operation dictates which region is dominant with respect to absorption. For our higher HF band operations during the day, the D region is the culprit. But for our lower HF band operations at night, the E region is the culprit as the D region has essentially gone away.

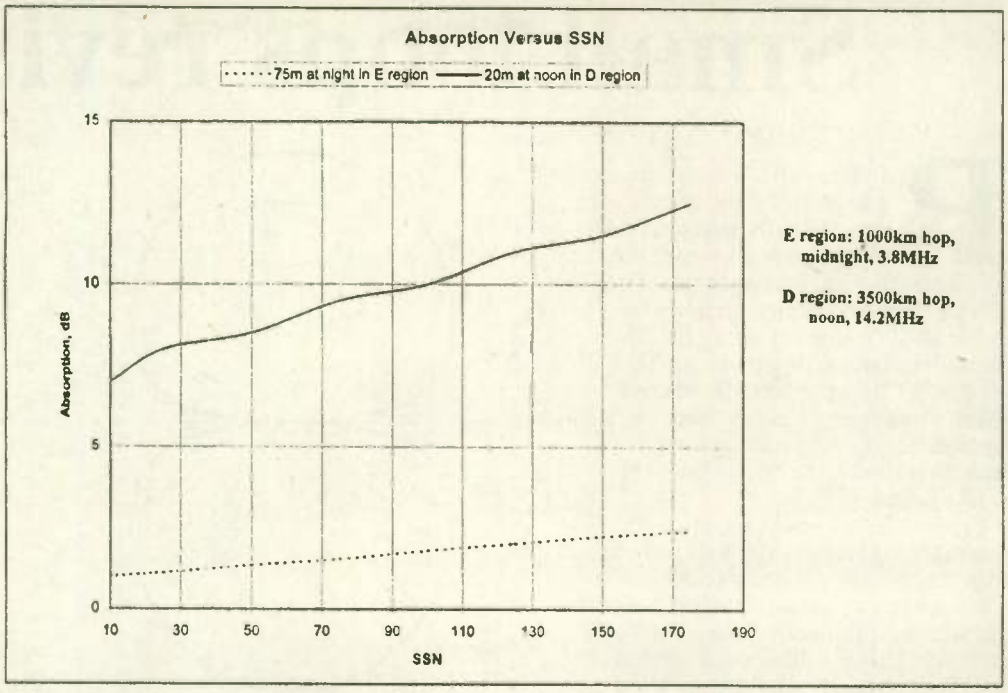


Figure 2 Absorption versus SSN

Figure 2 is a plot of absorption versus SSN for two cases: a 3500km hop on 20M at noon and a 1000km hop on 75M at midnight. The impact of increased absorption as SSN rises is greatest on the higher HF bands, but that's also tempered with the fact that the absorption on 10M would be less by a factor of four than the absorption on 20M. The impact of increased absorption on the lower HF bands doesn't appear to be too great, but these bands usually don't have a lot of margin with respect to signal strength to start with.

Finally, as SSN increases, foE increases. For the lower HF bands, this means higher elevation angles are needed to get through the E region because you want the longer hops afforded by the higher F region and not the shorter hops from the E region. This subtle issue implies more hops as SSN increases.

So what can we expect as Cycle 23 continues progressing upward? In a nutshell, we'll be blessed with 17M, 15M, 12M, and 10M openings due to the higher SSN. But it'll be tougher on the high latitude paths (North America to Europe and Japan) due to increased geomagnetic field activity, and tougher on the lower bands due to increased absorption and possibly more hops.

—Carl Luetzelschwab, K9LA, can be reached at: 1227 Pion Rd., Ft. Wayne, IN 46845 or you can e-mail him at: k9la@gte.net.

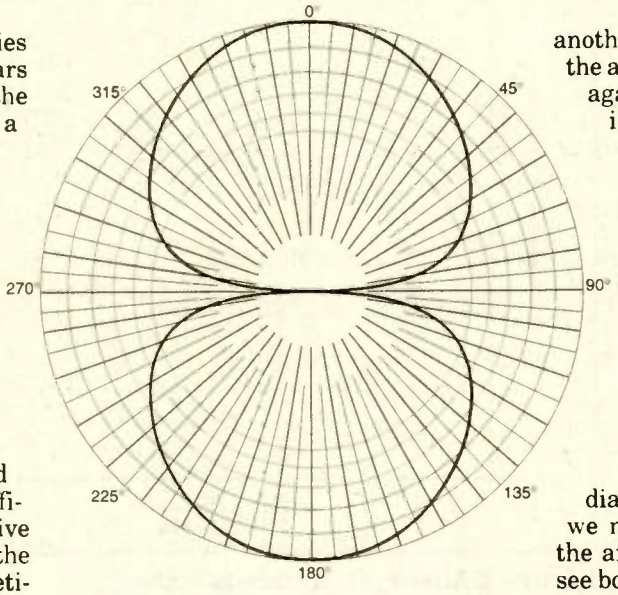
Small loops revisited

Readers with long memories may recall that, some years ago, old Kurt questioned the efficiency claimed for a small commercial loop antenna. The claims were for something on the order of 90% efficiency on the 10-meter band down to something like 60% on 20 Meters. Kurt stated that these were unreasonably high because of losses caused by induction into nearby objects and other real world losses.

I received an irate response from the manufacturer including detailed analyses showing the radiation resistance, loss resistance and calculations showing the claimed efficiencies. The one thing I did not receive was field strength readings showing the actual output of the antenna. Theoretical calculations are important in antenna design but the proof of the pudding as far as Kurt is concerned is in field strength meter measurements that compare the antenna to a dipole.

Recently *RadCom*, the British equivalent of our *QST*, reported such measurements have been made in the last couple of years. G4XVF has found that the overall radiation efficiency of a small loop is relatively low (usually under 10%) compared with a dipole at reasonable height. The difference between the calculated efficiency and the actual efficiency is attributed to eddy current losses in nearby structures.

The loops tested were built in England and may differ from those made in the U.S. but these are the only transmitting loop field strength measurements Kurt has heard of. Until we hear differently I advise that you keep them in mind when you plan your next antenna project.



Radials once more

A while back old Kurt put on his Masked Avenger's cape and took *QST*'s "Doctor" to task for misleading a poor fellow who wrote in about his home-made vertical with 5 radials. The answer was to add one more radial and see if a "substantial" increase in field strength resulted. Kurt pointed out that no such big increase was possible.

The good Doctor took the criticism in good humor like the true gentleman he must be. This is in contrast to those who become deeply offended when Kurt points out their idiocy and who then call Kurt bad names, as though that would somehow turn wrong information into good.

Kurt and the Doctor, each in his own way, are here to guide the newcomer on the path to technical correctness, good antennas and lots of DX. The Doctor does point out that even if you add 100 radials you only gain 3 dB. Of course there are DXers who might kill to get another 3 dB over the competition but the average operator has to weigh gain against cost. Installing 100 radials is a lot of work, but Kurt has done it on 160-meter antennas with good results.

How do we know that adding 100 radials gives 3 dB improvement? Well, it does if you have a 1/4 wave vertical. But if you have a shorter vertical it will give even more improvement than that. Why? It's all a matter of radiation resistance and loss resistance. Let's look at an example or two.

A quarter-wave vertical has a radiation resistance of 36 Ohms. When we measure the resistance between the antenna and its radial system we see both the radiation resistance and a "loss" resistance. In the case of a 5-radial system the total is 61 Ohms. The 61 Ohms is made up of the 36 Ohms of radiation resistance and 25 Ohms of loss resistance. This will vary a little depending on the kind of ground you have. It was 25 Ohms in W2FMI's yard. He made extensive tests and they are shown in the *ARRL Antenna Book*. If you've been following Kurt's advice you have this on your bookshelf.

All of your transmitter power is dissipated in the total 61 Ohms. But only the part used up in the 36 Ohms of radiation resistance is radiated. The rest keeps your earthworms warm in the winter and hot in the summer. So what is the efficiency? It's 36 (radiated) divided by 61 (total). That's 59%. For every 100 Watts you put in 59 Watts is radiated.

If you put in 100 more radials the loss resistance drops to just about zero. Now the efficiency is 36 (radiated) divided by 36 (total) or 100% (theoretically at least). The improvement by adding the radials is 100 Watts or less than 3 dB (actually only 2.2 dB). 100 radials probably is not worth the effort.

Shorter antenna

But suppose the antenna is only 1/8 wave high. Now the story is a lot different. Short antennas have low radiation resistance. The 1/8 wave antenna has a radiation resistance of only 7 Ohms. The total resistance you'll see at the base between the antenna and the 5 radial ground system is 7 Ohms plus

the 25 Ohms loss resistance or a total of 32 Ohms. The efficiency is 7 ohms (radiated) divided by 32 Ohms (total) or 22%.

But now let's put in the 100 radials to get zero loss. Now the efficiency is 100%. The improvement? 100 Watts/22 Watts, or 6-1/2 dB. That's theoretical. Out in the real world you're not going to do quite that well because there will be losses, especially in the loading coil you need to resonate the short antenna. This means that you'll get less than 22 Watts radiated with the 5 radials and less than 100 Watts with 100+ radials. But you'll still see a noticeable improvement after adding the radials.

Conclusion

First of all Kurt hopes that you noticed that, except for the loading coil problem, you get just as much power radiated from a shortened antenna as you do from a full 1/4 wave tower *if you have a perfect ground.*

Second of all he hopes you remember that the shorter the antenna, the more radials you need. You can get by OK with 5 radials if your antenna is 1/4 wave but if it is only 1/8 wave or less you'll be ahead to use more. Before you ask the question, "How many radials should I use?" be prepared to tell how long your antenna is. An hour or so looking at those charts in the *Antenna Book* can save a lot of work in your backyard.

50W gain

When I, Kurt, was a Ham in the 1930s *QST* was the paragon of correctness. Always right. Never a mistake. And in those days 'beam antenna' meant a Sterba Curtain or a W8JK endfire array. The W8JK was by far the most popular since it was within the means of the average amateur and it worked well.

So when I picked up the new issue and spotted an article on the W8JK I was interested. Imagine my dismay to find, right in the first paragraph, the symbol "W" (for watts) instead of Ω (the standard symbol for Ohms) not just once but repeatedly. Not only that, but the English letter "I" replaced the Greek "λ" for wavelength. Pity the poor novice, who just learned the standard symbol usage from his license manual, and who now has to make sense out of this kind of thing.

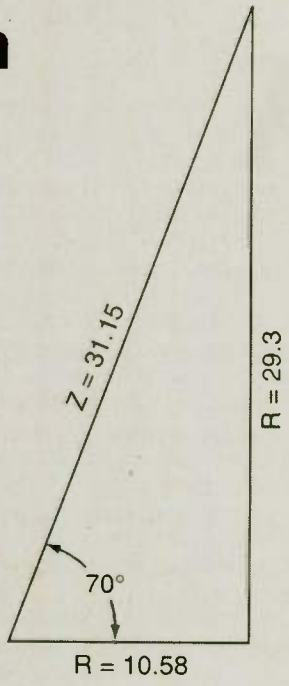
One would think there would be enough experienced technical persons available to proofread articles before publication. But these days if the computer spell checker doesn't spot it, we all suffer. Oh, well.

July addendum

(Ed. Man did I catch it from Kurt! A couple of items from the July Aerials column were misinterpreted by our scanner/software. The diagram on the right was supposed to accompany the section on Impedance Revisited.

Also in the Impedance Revisited section where it reads "$Z=R^2+X^2$" should have been printed as "$Z=\sqrt{R^2+X^2}$." On page 56, second paragraph, "700" should have printed as "70°" and "131.151 ohms" should have printed as "|31.15| ohms" (absolute value).

Not only did Kurt point out my errors, thanks also go to Bill Graham, K6QB, of Seattle, WA, for drawing my attention to these grievous omissions.)



Inside Amateur Radio

The following story has been excerpted from Inside Amateur Radio, *by the late Lenore Jensen, W6NAZ. The book can be purchased from Worldradio Books, P.O. Box 189490, Sacramento, CA 95818. Price is $9.00 plus $2.00 shipping and handling. CA residents please add 70¢ sales tax.*

One day in May

Among his souvenirs, Henry Obermeyer, K7WPG, has a letter which starts, "How does one man thank another for his life?"

On May 4, 1967, then an Air Force Staff Sgt. stationed in Germany, "Obie" was using his Amateur Radio station in his leisure time; it was around the dinner hour.

First he contacted a station in Guam for a chat, followed by one in Heidelberg.

"Suddenly we were interrupted by a voice calling for help along with his call sign. It was the American schooner, *Dante Deo*, a marine biological research vessel. I learned their approximate location was 250 miles off the coast of Da Nang, Viet-Nam.

"There were six adults and one child aboard. They had not been able to make radio contact with anyone on their side of the world. Running seas and high winds had set them directly towards treacherous reefs in the South China Sea.

"I immediately reached for the phone and advised the Atlantic Air Rescue and Recovery unit at Ramstein Air Base which in turn alerted Florida, Hawaii and the group stationed in Viet-Nam.

"They dispatched an amphibious Albatross plane to the area, located the survivors in a life raft, and landed nearby.

"Happily, they all were taken aboard the plane, flown to Da Nang and then to Clark Field in the Philippines, all in good condition."

"Obie" was awarded the Air Force Commendation Medal for his prompt and efficient action.

What is a dupe?

A "dupe" is a duplicate contact. Every contest contains some sort of rules limiting the number of contacts you can make with any other station. Some contests, like the ARRL Sweepstakes, limit you to one QSO with each station during the entire contest. Others allow you to work the same station once on each band. Others permit you to work each station once on each band and emission mode. No matter how restrictive or open-ended any set of rules may be, you will have to come up with some means of detecting any duplicate contacts you may have.

The purpose of such rules is not to restrict you from working people in a contest, but only to prevent your from claiming points for 2nd, 3rd and 4th contacts with the same station. Making or logging duplicate contacts is not an offence in the eyes of the contest adjudicators — claiming points for duplicate contacts is an offense. The entries of some people have been disqualified for "excessive unmarked duplicates" — a synonym for sloppiness in your log keeping. When submitting your contest entry, you have an obligation to detect every possible duplicate contact you may have made, to mark those contacts as dupes and to claim no points for them.

How does one detect dupes?

The simplest, low-tech way is to detect dupes make up a "Dupe Sheet," a separate piece of paper on which you log the call signs of the stations you work in some order other than the chronological order in which you work them. Dupe sheets come in all sorts of styles. Some people make their sheets with ten columns, one for each numeral from 0 through 9, and enter call signs on the sheet by numeral. On these sheets, WR6WR would go in the column for sixes and VE2ZP in the column for twos. Others made up sheets using call sign prefixes, others using the first or last letter of the call sign suffix as the key. In whatever form, a well-maintained dupe sheet will help you determine if a station you hear is one you have already worked.

Personal computers and logging software have consigned dupe sheets to the ash-heap of contesting history for most of us. Now logging programs will alert you immediately if you have already worked a given station before.

Whether you use a dupe sheet or logging software, once you are alerted to a possible dupe, what do you do? Should you log a dupe anyway, or should you refuse to log the other station, and alert the operator to a possible dupe?

There are many contesters out there who absolutely, positively will not permit any dupes in their logs. They will ruthlessly refuse to log anyone who calls them a second time, and usually advise them that the contact is a dupe. In CW, you might use expressions like "B4" (before) or "QSO B4 TU" (we made a contact before, thanks) to alert people who call you that you already have them in your log.

Others will take a slightly more relaxed attitude, and alert potential dupes, and log them only if the other party insists that the contact is a new one. Conversely some folks will work dupes when they call and not log them.

Does it matter if you log a dupe? Well, even though duplicate contacts have no value, dupes may actually help your score. Why? Well, even the best contesters will make errors copying call signs or exchanges in anywhere from 1 to 3% of the contacts they make. Further, most adjudicators are using computers to thoroughly and impartially analyse your log and compare it with others' logs. If another station you work mis-logs your call sign, and you contact them a second time, the other station's dupe sheet or logging program will not alert them that this second contact is a dupe. If you both log the second QSO, then the adjudicators will be able to confirm that there was a QSO between you, and you will both retain credit for one contact. If neither of you logs the second QSO, your call sign will not appear in the other station's log, and you might both lose any QSO points for a contact that you did make.

There are other circumstances in which contacts you think are dupes are not. It often happens that two stations will be calling CQ on the same frequency completely unaware of the other's presence. A third station comes along, calls one of the original two, and both think that they are the one being called. They each go through the motions of completing a contact, but the third station is aware of only one and logs only that station.

My own tastes have changed over time. Originally, I laboriously kept paper dupe sheets, although it was a painstaking effort. When I began logging on a computer, I became one of those ruthless "no dupe shall pass" folks, and took great pride in turning in a log completely free of dupes. I have mellowed over time, and I now see dupes as a means of ensuring that I get credit for every possible QSO. I have adopted a practice of avoiding dupes when I search and pounce for contacts, but I log every dupe without comment when I am calling CQ and trying to run. I reckon that if my log says another station is a dupe, I should not work them. However, if another calls me, they almost certainly believe that ours will be a new QSO, so I log them in hopes that this will catch errors in his or her log and mine. If you stop your run to discuss whether a given contact is a dupe, you may succeed only in interrupting your rhythm and you may encourage those queueing up to work you to keep right on tuning if they can't quickly grasp your call sign.

As stated above, working dupes is okay with adjudicators so long as they are marked as dupes. If you claim points for your dupes, then you may be in trouble with the judges. There is no dishonor in making duplicate contacts, within reason.

August contests

The biggest and most interesting contest this month is the Worked All Europe (WAE) CW Contest, sponsored by the German Amateur Radio Club (DARC). This contest was featured as "Contest of the Month" in the August 1998 issue of ***Worldradio***, so please refer to that issue for additional details. This contest is great fun, and presents a wonderful opportunity to test your copying skills. Beyond exchanging

Contest	Date & Time	Bands	QSO points	Multipliers	Exchange	Entry Categories	Entries
YO DX	0000Z 1 Aug 2000Z 1 Aug	80-10M CW & SSB	8pt/YO 4pt/DX 2pt/NA	YO Counties, ITU Zones on each band	RST ITU Zone	Single op: all bands, single band Multi-op, single tx	1mo. Box 05-50 R-76100 Bucharest
NA QSO Party CW	1800Z 7 Aug 0600Z 8 Aug	160-10M CW	1pt/QSO	Canadian Call areas, US States, other NA countries	Name QTH	Single Op Multi-op, two tx All entrants must run 150w or less	1mo. K8CC
ARRL UHF	1800Z 7 Aug 1800Z 8 Aug	220MHz to microwaves	3pt/220, 432MHz 6pt/902, 1296MHz 12pt/2304MHz +	Grid squares worked on each band	Grid square	Single op Rover Multi-operator	1mo. ARRL or e-mail to contest@arrl.org
European DX CW	0000Z 14 Aug 2359Z 15 Aug	80-10M CW	1pt/Eur 1pt/QTC QTC: reports of previous QSOs Time Call:Ser#	WAE Countries worked on each band. x2 on 10/15/20 x3 on 40M x4 on 80M	RST Ser#	Single Op: All bands, Single band Multi-op: Single or multi-tx All entrants may use PacketCluster	15 Sep Box 1126 D-74370 Sersheim GERMANY
Maryland-DC QSO Party	1600Z 14 Aug 2359Z 15 Aug 0400-1600 off time for all participants	80M-UHF CW, SSB, FM, ATV and RTTY	10pt/Club stns 5pt/Mobiles 4pt/Novice or TEch 3pt/CW, RTTY, ATV 1pt/all others Stations outside MD, DC work MD, DC only. MD, DC stations work everyone	For Stations outside MD, DC: Total of Maryland counties, city of Baltimore and DC regardless of band For MD, DC stations: Above, plus 49 other U.S. states, Canadian provinces, territories and Labrador, DXCC countries regardless of band.	QTH Entrty Categtory	"standard" (Single Operator All Bands) QRP Mobile YL Club Novice/Technician class	1 Sept Box 52 Hagerstown MD 21741 USA Include SASE with your log
SARTG RTTY	0008Z 21 Aug 1624Z 21 Aug 0816Z 22 Aug	80-10M RTTY	5pt/VE 10pt/NA 15pt/DX	DXCC Countries + Australia/Canada/USA Call areas	RST Ser#	Single Op: All bands, Single band Multi-op, single tx	10 Oct SM4CMG
South-East Asia Net SSE	0000Z 21 Aug 2359Z 22 Aug	160-10M SSB	1pt/QSO	3 mult pts for SEANET countries: A4 A5 A6 A7 A9 AP BV BY DU EP HL HS JA JD1 JY KH2 P2 S7 VK VO9 VS6 VU V8 XU XV XW XX9 YB ZK ZL ZM ZL6 ZL9 3B6/7 3B8 3B9 4S 4X 4Q7 9K 9M2 9M6/8 9N 9V		Single Op: All bands, Single band Multi-op, single tx	31 Oct 9M2FK Box 13 10700 Penang MALAYSIA
Keymen's Club of Japan Contest	1200Z 21 Aug 1200Z 22 Aug	160-10M CW	1pt/QSO	Japanese districts (62) on each band Japanese stns will send a two-leter district identifier in the exchnage.	RST and two-letter continent identifier (ie. NA)	Single Op all bands only	16 Sep JA1DD or e-mail to VYL05350@ niftyserve.or.jp
Canadian and American Islands Contest	1700Z 21 Aug 2300Z 22 Aug	Rules Unclear, probably 80-10M CW & SSB	5pt/Island stn 1pt/mainland	Provinces, Territories and U.S. States (unclear, but probably count once regardless of band)	RST QTH	Island stations; Island "rovers"; non-Island stations: SWL (Note: Stations not on islands may only work island stns for credit. SWLs may only log island stations.)	15 Sep VE6VK
New Jersey QSO Party	2000Z 21 Aug 0200Z 23 Aug 0700-1300Z off time for all	160-2M CW & SSB Phone and CW are separate bands	3pt/QSO	NJ counties (21) count once, regardless of band NJ stations count the 49 other U.S. states, Canadian provinces and territories and NJ counties.	RST Ser# QTH	Single Operator Novice/Technician Mobile	18 Sep PO Box 528 Englewood NJ 07631-0528
NA QSO Party SSB	1800Z 21 Aug 0600Z 22 Aug	160-10M SSB	1pt/QSO	Canadian Call areas, US States, other NA countries	Name QTH	Single Op Multi-op, two tx All entrants must run 150w or less	1mo. K8CC
TOEC Field Contest CW	1200Z 28 Aug 1200Z 29 Aug	160-10M CW	1pt/NA 3pt/DX 3pt/any mobile	Total of Maidenhead "Field" locators. The first two letters of your grid square are your "Field".	RST + Grid square (ie. FN25)	Single Op: All band, Low power, Single band Multi-op: Single or multi-tx Single ops may not use PacketCluster	1mo. Box 2063, S-831 02 Ostersund SWEDEN
Hawaii QSO Party	1600Z 28 Aug 2200Z 29 Aug	160-Microwaves CW & SSB	1pt/SSB QSO 2pt/CW QSO	For stations outside Hawaii: HI counties (5) For HI stations: U.S. states, Canadian provinces, DXCC countries Mults count once regardless of band.	RST QTH	Single Op: CW only, SSB only, mixed mode Single Op QRP: CW only, SSB only, mixed mode Multi-op Single Tx: CW only SSB only, mixed mode Multi-Multi: mixed mode only	30 Sep 1056 Kapau St Kailua HI 96734 or E-mail to: starcommradio@juno.Com
All Asia SSE	0000Z 4 Sep 2359Z 5 Sep	160-10M SSB	1pt/20-10M QSO 2pt/80M QSO 3pt/160M QSO Work Asia only	Asian prefixes worked on each band	RS Age (YLs may send 00)	Single op: All bands, Single band Multi-op: Single or Multi-tx	30 Sep Box 377 Tokyo JAPAN
LZ DX	1200Z 4 Sep 1200Z 5 Sep	80-10M CW	6pt/LZ 3pt/DX 1pt/NA	ITU Zones worked on each band	RST ITU Zone	Single Op: All bands, Single band Multi-op, single tx SWL	1mo. Box 830 1000 Sofia, BULGARIA
North American Sprint CW	0000Z 5 Sep 0400Z 5 Sep	80-20M CW	1pt/QSO	Canadian Call areas, U.S. States, other NA countries	Ser# Name QTH	Single op all bands only Entrants may combine their scores to form a "team".	1mo. N6TR
Michigan QRP Club Labor Day CW Sprint	2300Z 5 Sep 0300Z 6 Sep	160-6M CW	5pt/ QSO with member 4pt/DX 2pt/USA and Canada	U.S. States, Canadian Provinces and Territories, DXCC countries Total score x1.25 if you used a home-made TX or RX, x1.5 if all home-brew gear	RST QTH MI-QRP membership number	A- 250mW or less B- 250mW to 1W C- 1W to 5W D- Over 5W out	30 days N8COA

Addresses: CQ — 25 Newbridge Rd., Hicksville, NY 11801 USA; ARRL — 225 Main St, Newington, CT 06111 USA; Call sign — Callbook Address: Bands: The 30, 17 and 12M bands are never used in any contest. Official forms and complete rules may be available from me. Please send SASE for details.

standard contest QSO information, this contest includes a special "QTC Rule," unique in contesting, where you can double your score by sending small extracts of your log to stations in Europe. This contest features some of the world's best contesters. It is well worth spending some time in this contest, and its SSB and RTTY equivalents in September and October.

The calendar shows a number of smaller contests in August, ranging from state QSO parties for New Jersey, Maryland, the District of Columbia and Hawaii, national contests featuring Romania and Japan, as well as UHF and RTTY events.

73 and good luck in the contests. —

Dave Goodwin, VE2ZP/VE9CB can be reached via e-mail: ve2zp@rac.ca; packet: VE2ZP@VE3XRV.#EON.ON.CAN.NOAM.

Hamfests — August

CALIFORNIA

Golden Empire ARS (GEARS), W6RHC, 60th Celebration Hamfest/Swapmeet on 07 August at CSU, Chico University Farm Pavilion, Chico, CA. Free admission. Tables $10. VEC testing, special events station, forums, door prizes. Info: Ray Watkins, KO6TW, Tel.: 530/898-6343; email: rwatkins@campuspo.csuchico.edu; Web: www.w6rhc.org.

COLORADO

Denver Radio Club Hamfest/ARRL State Convention 15 August, 8:30 a.m.- 2 p.m., at Jefferson County Fairgrounds, 15200 West 6th Ave., Golden, CO. Adm. $4. Tables $10/adv. $12/at door. Prizes. VE testing. ARRL forum. Swapfest. Talk with Ed Hare, W1RFI, from ARRL Tech Lab. TI: 145.49. Info: Ron Taylor, KBØQAB, 1552 S. Yank St., Lakewood, CO 80228; 303/989-3978; KBØQAB@arrl.net; http://users.ntr.net/~chastain/hamradio/.

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Northern Colorado ARC Superfest '99 17 July 8 a.m. - 2 p.m. at Larimer County Fairgrounds, 700 Railroad Ave. Loveland, CO. Commercial exhibits, computer and radio goodies. TI: 145.115(–) pl 100.0 or 146.85(–). Reserve tables from Michael Robinson, N7MR, 970/225/7501. For info: 970/352-5304.

ILLINOIS

Hamfester Hamfest on 08 August at Will County Fairgrounds, Peotone, IL. Setup 07 Aug. 3 - 11 p.m. Adm $4/adv., $5/at the door. Tables $15 before 19 June, $20 after. Gates open 6 a.m. Exhibit hall open at 8 a.m. For info and reservations: Tom Davis, 14914 Washtenaw, Harvey, IL 60426, email: tdavis@ internetplus.net.

INDIANA

La Porte ARC Hamfest on 28 August, 7 a.m.- 2 p.m., at the La Porte County Fairgrounds (IN2, west of La Porte). Adm. $6 or $5 with this ad. Tables $10. Outdoor tailgating free. Talk-in 146.52. For info: Neil Straub, WZ9N, P.O. Box 30, La Porte, IN 46352; 219/324-7525; nstraub@netnitco.net; www.geocities.com/siliconvalley/byte/1653.

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Land of Lakes ARC Hamfest 01 August, 7 a.m.-2 p.m. at the Steuben County Fairgrounds (corner of 200W and 200N, Exit 150 off of I69). VE testing. Admission $3/advance or $4/at door. Vendor setup Saturday 31 July 3-10 p.m. or Sunday, 01 August 4-7 a.m. Tables $8, Trunk sales $2. Talk-in: 147.180, pl 131.8. For info: sharon.l.brown@gte.net or 219/475-5897.

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Kokomo and Grant County ARCs Hamfest on 08 August at Greentown Lions Club Fairgrounds. Setup 6 a.m., doors open 8 a.m. Talk-in 147.240. For info: L.B. Nickerson, KA6NQW, 517 North Hendricks Ave., Marion, IN 46952; 765/668-4814; ka6nqwnick@netusa1.net; web: www.netusa1.net/~ka6nqwnick/hamfest.html.

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Hoosier Lakes Radio Club Hamfest/Computer Show 21 August, 8 a.m.- 2 p.m. at Kosciusko Co. Fairgrounds (Smith & Bronson St., Warsaw, IN). Adm. $5. Tables $10. VE testing at 2 p.m. Free parking. Overnight camping. Flea market. Prizes. Contact: Loren Melton, WB9OST. 219/858-9374; WB9OST@WAVEONE.NET.

KENTUCKY

Bluegrass ARS 1999 Central Kentucky ARRL Hamfest & Computer Show 15 August at National Guard Armory, Lexington, KY airport. (From I-75 exit 115 follow signs to airport KY 922 south 1.5 miles, New Circle west & south 4.6 miles to exit 5, Route 60 west 1.7 miles, turn south at traffic light). Take Man O' War south 1.3 miles, Parkers Mill west 1.2 miles, right onto Airport Road, left onto Armory grounds. Adm. $5 adv. $6 at gate. VE sessions, ARRL Forum, technical forums, commercial vendors, indoor fleamarket, Kentucky Horse Park, museums, family activities nearby. Setup Saturday 6-8 p.m. — Sunday 6-8 a.m. 2-ft. Tables $4 if reserved before August 5, $6 afterwards, 6-foot minimum. Tailgating free with admission. Free self-contained camping on site. Talk-in 146.760(–). VE sessions contact Bill De Vore N4DIT by 05 August at devore@ engr.uky.edu or 606/273-8345. For information/reservations contact John Barnes KS4GL at KS4GL@ juno.com, 606/253-1178 (eves), or S.A.S.E. John Barnes KS4GL, 216 Hillsboro Ave, Lexington, KY 40511-2105.

NEW MEXICO

Duke City Hamfest on 21-22 August at the National Guard Armory, Rio Rancho, NM. Free admission. Tables $14 or $18 w/electricity. Guest Speakers include Riley Hollingsworth, K4DHZ, Rod Stafford, W6ROD and Walt Stinson, WØCP. Saturday evening banquet. Prizes. For info: Marcus Lieberman, KM5EH, 505/836-1724; buckml@lobo.net; www.qsl. net/dchf.

NEW YORK

Finger Lakes Ham-In Hamfest & Fly-In on 21 August at the Tompkins County Airport. Adm. $4/advance or $5/at door. Under 18 free. Tables $10. Flea market space $2. Huge airplane hangar with plenty of indoor space. Breakfast and lunch starting at 6:30 a.m. VE testing. Dealers. Handicapped accessible. Talk-in 146.97. For more info: Richard Spingarn, AA2UP, richard@eagle print.com; www.compcenter.com/~tcarc.

MASSACHUSETTS

Mohawk ARC Hamfest on 28 August, 8 a.m.-3 p.m., at the Mohawk Drive-In Theater (Gardner, MA). Admission $2. Talk-in 145.370. For info:

John Dould, AE1B, 22 South Athol Rd., Athol, MA 01331; 978/249-5905.

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MIT Radio Society/MIT Electronics Research Society Flea Market 15 August from 9 a.m. - 2 p.m. Albany and Main St, Cambridge MA. Adm. $4. Tailgating: $10 at door, $9 adv. Set-up: 7 a.m. Free parking. Talk-in 146.52 and 449.725. For info: 617/253-3776. For advanced reservations: W1GSL, P.O. Box 397082 MIT BR., Cambridge MA 02139-7082.

NEW YORK

Lancaster ARC Greater Buffalo "Summer" Hamfest/Computer Show 15 August at Hearthstone Manor, 333 Dick Rd, Depew, NY (1 1/2 miles from the I-90). Adm. $5. This is a large hamfest with an exquisite indoor vendor hall and a large outdoor flea. Exibits, buffet breakfast and lunch, Talk-in 147.255+. For info: Luke Calianno, N2GDU, (Chairman); email: lcalianno@freewwweb.com; Web: http://hamgate1.sunyerie.edu/~larc

NEBRASKA

Ak-Sar-Ben ARC Flea Market 22 August at Millard Social Hall, Hwy 50 (exit 440) 1/2 mile south of I-80. Adm. $1. Table price: (includes 1 admission) $7 adv. $10 at door. New/used gear, electronic and computers, refreshments and prizes. For info: Gerry Gross, PMB 142, 643 N 98th St, Omaha, NE 68114-2342; phone (leave message) or fax 402/891-2481; wa6POZ@aol.com; www.qsl.net/k0usa

OHIO

Triple States RAC Hamfest 08 August at Red Mens Picnic Grounds, Cty Rd4, just off St. Rt. 7, 8 a.m.- 3 p.m. (setup 6 a.m.). Indoor/outdoor. Adm. $2 includes free flea market setup and parking. Refreshments. Talk-in 146.91. Send for map/info: TSRAC, 2011 State Hwy 250, Adena, OH 43901; 740/546-3930; k8an@aol.com.

VIRGINIA

Roanoke Valley ARC Hamfest/Computer Show 21 August 9 a.m. - 3 p.m at William Byrd High School, Washington Avenue, Vinton, VA. Free parking! ARRL VE exams, great forums, prizes and a large flea market area & new dealers. Adm. $5/adv. $6/at door. Talk-in 146.985. For info: Mike Marsh, RVARC, P. O. Box 2002, Roanoke, VA 24009, phone 540/389-3056 or email: mikekf4mub@ aol.com

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Shenandoah Valley ARC Winchester Hamfest 01 August, 6 a.m.- 3 p.m. at Clarke County Fairgrounds in Berryville, VA. Adm. $5. Talk-in 146.820. VE exams at 1 p.m. Registration at 12 p.m. Famous Ruritan BBQ Chicken and other concessions. Tailgaters $7. Contact: Jane Barb, KD4IET, 540/955-1745; ibarb@visuallink.com; www.Vvalley.com/svarc/hamfest.

WASHINGTON

ARRL Eastern Washington Section Convention and Computer/Electronics Fair 7-8 August at University High School (10212 E. 9th Ave., Spokane, WA). Prizes, food, dealers, seminars, demos, fox hunts, auction. VE testing. Adm. $5. Children under 12 free. Tables $10. Steak dinner $6.50. For info: Neil Gallup, N7LVO, 509/928-7442; n7lvo @cet.com; www.iea.com/~n7utg.

WEST VIRGINIA

The Tri-State ARA Hamfest and Computer Show 14 August at Veterans Memorial Field House (2590 5th Ave., Huntington , WV) 8:30 a.m.- 2 p.m. Set-up 6 a.m. or 5-11 p.m. 19 August. VE exams 9 a.m. TI: 146.64 or 146.76. Food and refreshments. Free parking. Adm. $5. Tables $8/adv. $10/at door. Electrical outlets $10. For info: Jerry Stickler, KA8TUD, P.O. Box 4120, Huntington, WV 25729; 304/736-2664; tara.ama teur.radio@juno.com.

WISCONSIN

Marshfield Area ARS Picnic/Potluck/Swapfest 08 August at 11 a.m. at Wildwood Park, Marshfield, WI. Talk-in 147.180. Everyone welcome. For info: Guy Boucher, KF9XX, 107 W. Third St., Marshfield, WI 54449. Phone: 715/384-4323. Packet: KF9XX@W9IHW.E5.AI.WI.USA.NA. Email: guyboucher@tznet.com

STS 101 ready to go

Space Shuttle mission STS-101, currently scheduled for launch on 02 December will be carrying the first Amateur Radio gear up to the International Space Station and may install antennas during a spacewalk. The amateur gear will be left in the ISS, and there may be some very limited testing of the station but it will not be the DXpedition type operations like those of the past. This is because the space station assembly crews are extremely busy and have limited time to operate, let alone try for DXpedition style operation. In fact, don't look for that kind of operation even after the first permanent crews take up residence on the International Space Station sometime next year. This is because Amateur Radio is an educational and recreational activity rather than a primary activity on board the ISS. — *SAREX, Newsline*

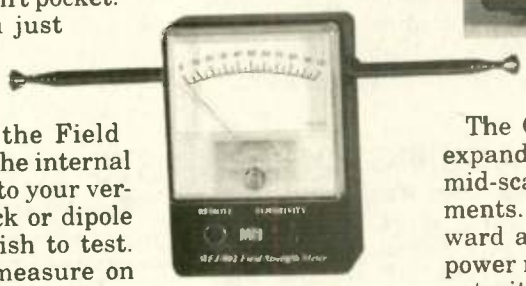
New Products

Information in "New Products" is supplied by the manufacturers to acquaint ***Worldradio*** *readers with new products on the market.*

New MFJ products

Two new MFJ products designed to assist Amateur Radio operators monitor their station characteristics have just been released.

• The MFJ-801 Field Strength Meter is a compact unit able to read relative field strength from your antenna, measure antenna performance and discover how strong your antenna field it. Its compact size fits in the palm of your hand, or in your shirt pocket.



It's easy-to-use — you just hold it near your antenna and adjust the sensitivity. Attach a receiving antenna to the Field Strength Meter or use the internal whip. Apply low power to your vertical, beam, rubber duck or dipole or any antenna you wish to test. Transmitted RF will measure on the meter's scale and moving the receiving antenna will show you the radiation pattern of your antenna.

The MFJ-801 Field Strength Meter has a suggested retail price of $19.95

• Need a Field Strength Meter that can be used remotely? The MFJ-802 Bipolar Field Strength Meter has the same fine features and the MFJ-801 and can be used remotely. It features two telescopic whip antennas, and a large meter enclosed in a sturdy, hard plastic cabinet.

The MFJ-802 Field Strength Meter has a suggested retail price of $39.95.

Do you monitor your transmitted signal with an SWR/Power meter? If not, you really have no excuse not to. The MFJ GrandMaster series of SWR/Power Meters are now available. Each GrandMaster SWR/Power Meter has a large 3 1/4 X 1 1/4 inch illuminated meter for easy wide-angle viewing. A functional and simple front panel layout lets you select power ranges, bands or make SWR readings intuitively. A highly visible black and red meter scale on a white background makes it quick and easy to read SWR or forward/reflected power. The meter lamp requires 13.8VDC or 110VAC with the MFJ-1312B wall wort ($12.95).

The GrandMaster series features an SWR scale that expands the full view of the meter. 3:1 SWR is centered at mid-scale to give you precision and wide-range measurements. All GrandMasters reature peak and average, forward and reflected power readings and have selectable power ranges. Each model is housed in an all metal cabinet with rubber feet and protected by durable black paint. A designer injection-molded grey front panel perfectly matches any transceiver. The units measure a compact 7½Wx3⅛Hx4¼D inches. Connections are air-dielectric S)-230 connectors with gold-plated center pins for superb performance to beyond 525 MHz. All GrandMaster SWR/Power Meters have been precisely factory calibrated for accurate measurements.

The GrandMaster comes in four models:

• MFJ-870, HF SWR/Power Meter — 1.6 to 60 MHz, 30, 300 and 3,000 watt power ranges — $134.95

• MFJ-872, HF/VHF SWR/Power Meter — 1.8 to 200 MHz, 5, 20 and 200 watt power ranges — $94.95

• MFJ 873, VHF/UHF SWR/Power Meter — 125 to 525 MHz, 5, 20 and 200 watt power ranges — $114.95

• MFJ-874 HF/VHF/UHF SWR/Power Meter — 1.8 to 525 MHz, 5, 20 and 200 watt power ranges — $169.95

All of these fine MFJ products are covered by the famous No Matter What one year limited warranty. MFJ will repair or replace (at our option) any of these products for one full year.

For your nearest dealer, or to order, call toll-free: 800/647-1800, or write MFJ Enterprises, Inc. P.O. Box 494, Mississippi State, MS 39762. Telephone: 601/323-5869, fax: 601/3236551, or see our web site at: http://www.mfjenterprises.com

New Products

Unified Microsystems XT-4CW Memory Keyer

Unified Microsystems is proud to introduce its newest product, the XT-4 CW Memory Keyer. Its small size and battery operation makes it the perfect keyer for Field Day, DXpeditions, QRP or any portable or mobile operation.

The XT-4 is fully Iambic with self completing characters. Each of the four memories holds approximately 100-110 Morse characters in non-volatile storage. Memories 1-2 and 3-4 can be chained together for even longer messages.

A knob gives smooth speed control (8-45 wpm) as opposed to clumsy up/down buttons or complex codes that other keyers use. A paddle reverse function switches the dit and dah keys around for operators who send with the other hand. The tune function simplifies adjusting your rig or anplifier.

Although the XT-4 will run for several hundred hours of heavy use on a single 9V battery, an automatic power down feature kicks in after 30 minutes of inactivity to further extend battery life.

The list price is $79.95. An optional cable set with cables to the paddle and rig is available for $9.95. The XT-4 is available directly from Unified Microsystems and from selected dealers. Write for a catalog for more information on the XT-4 and other radio products. Unified Microsystems, P.O. Box 133, Slinger, WI 53086 or by telephone at: 414/644-9036; www.qth.com/w9xt

Cutting Edge Power Port Pocket Protector

PowerPort Pocket PRO puts a new face and a new purpose to the old pocket protectors. This great little leather pouch holds your miniature radio along with a spare antenna and a few pens (for looks) up in your shirt pocket. The snug fit keeps the radio in place with no worry about its slipping out when you bend over. It's handy, secure and close to your ear for low volume listening. Beautifully designed and crafted out of soft glove quality leather, this gets the job done with style.

PowerPort PocketPro, priced at $19.95, is one of the many fine accessories available from Cutting Edge Enterprises, 1803 Mission St. Suite 546, Santa Cruz, CA. 95060. Telephone: 800/206-0115, Fax: 831/426-0115. Email: cee@cruzio.com.

11-oz. cobalt blue ceramic mug. logo in light blue.

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A fellow amateur comes to your home. Being a gracious host, you make the coffee. Subtley, you make sure your friend's coffee is in the ***Worldradio*** mug. He looks at the mug and knows.

Some try to make a point with a Ferrari, a Masserati or a chauffered Rolls-Royce. A yacht on the Riviera says something, but having a ***Worldradio*** mug says even more!

Only $7 for a work of art that speaks volumes about you. Add $3 for the Post Office. Also, amateurs fortunate enought to reside in California will gladly pay 54¢ additional for the privilege.

Address your order to the international headquarters of

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Sacramento, CA 95818

Checks, Visa, MC, Amex are appropriate methods of exchange. Those of you who wish to save 32¢ to invest in extensive stock portfolios, contact "n6wr@ns.net" kindly, usual transaction data.

New Products

Cutting Edge Radio Badge

Now, the tiniest radios can go a step beyond a lapel microphone. Slide that miniature radio onto the Radio Badge and then two strong pins hold your radio firmly to your jacket, shirt, or just about anywhere you want to secure it (I pinned mine to my hat!). The Radio Badge is only 3" x 1 3/4" in size. It disappears behind the radio, and is very sturdy and stable. This is about as close to hands-free operation as you can get. No more fumbling with the radio in the car or when your hands are full. Keep fully active while your radio remains in constant earshot. Antenna is up in the clear, and your radio is close to your ear for easy communications. The Radio Badge fits the majority of the new micro-radios such as the Yaesu VX-1R and ones of similar size. Retail price is $19.95. This is another fine product from Cutting Edge Enterprises. — Cutting Edge Enterprises, 1803 Mission St. Suite 546, Santa Cruz, CA. 95060. Telephone: 800/206-0115, Fax: 831/426-0115. E-mail: cee@cruzio.com.

Paktek ToolPak ProTote

Paktek introduces a new addition to its line of ToolPak products. The Protote Grand Opening allows you to carry the largest items, from spare parts to special tools, whatever you need to do the job right, the first time.

Protote's tough construction starts with a rigid bottom wrapped in layers of waterproof Dupont Cordura. 28 individual pockets, 12 outside and 16 inside, organize a wide variety of your most important tools.

Padded handles, covered, double-sewn seams and heavy-duty zipper all say ProTote is built to take it. Optional shoulder strap attaches to two "D" rings to help carry the biggest of loads. Made in America, Protote is available from ToolPak dealers or from Paktek Inc. The retail price is $39.97, and the optional shoulder strap is $7.97. Both products can be ordered from ToolPak by writing: ToolPak, 7307 82nd St. CT. SW. Tacoma, WA 98498. Telephone: 206/584-4914, Fax: 206/589-1091 or call 800/258-8458.

Canadian VHF/UHF band planning committee

Radio Amateurs Canada has approved the formation of a new VHF and UHF Band Planning Committee to advise on revisions and improvements to RAC band plans covering the spectrum from 29 MHz to 1300 MHz.

The committee is initially tasked with preparing interim band plans after consulting with amateurs across Canada. These plans not only take into account the wishes of Canadian amateurs, but will also be coordinated with band usage in other countries through the IARU.

The advisory committee will be chaired by Graham Ide VE3BYT of Ottawa, Ontario. — *RAC, Newsline*

VE Exams

As a service to our readers, ***Worldradio*** presents a feature listing of those VE exams, times and locations which are sent to us. Please remember that our deadline for publication is three months in advance. For example, if your VE group is scheduling an exam for December, please have the information to us by mid-September. ***Worldradio***, 2120 28th St., Sacramento, CA 95818. Please mark the envelope "VE Exams." List the location (City), any information examinees should have (advance registration, etc.) and the name and telephone number of a person to contact for further information. Examinees should bring their original license (along with a photo copy), two forms of identification (at least one should be a photo), and required fee.

p/r pref=pre-register preferred but w/i OK
p/r=pre-register only—no w/i
w/i=walk-in only
w/i pref.=w/i preferred to p/r

State	City	Contact	Notes
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8/03/99	Mobile	David, WA4VAC 205/649-5229	p/r pref
Arizona			
8/14/99	Tucson	Joe, K7OPX 520/886-7217	w/i only
Arkansas			
8/21/99	Gassville	Phil, AB5ZU 870/425-7406	p/r pref.
California			
8/14/99	Carisbad	Rusty, AA6OM 760/747-5872	p/r pref.
8/01/99	Chico	Gene, WA6ZRT 530/345-3515	p/r pref
8/26/99	Colton	Harold, AB6RN 909/825-7136 days or 909/685-6073 eves	p/r pref.
8/01/99	Concord	Gene, WW6H 510/254-5090	w/i only
8/07/99	Culver City	Clive, AA6TZ 310/827-2538	w/i pref.
8/05/99	Fremont	Dennis, K6DF 510/791-0914	w/i only
8/15/99	Fresno	Charles, W6DPD 209/431-2038	w/i only
8/14/99	Harbor City	Elvin, N6DYZ 310/325-2965	p/r pref.
8/28/99	Lake Isabella	HOTLINE 760/379-2947	p/r pref.
8/21/99	Long Beach	Don, 562/420-9480	p/r pref.
8/28/99	Pomona	Carl, WJ6N 909/356-1919	p/r
8/21/99	Redwood City	Al, WB6IMX 408/255-9000	w/i only
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8/11/99	Santa Ana	Red Cross 714/835-5381 x140	w/i
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8/14/99	Sunnyvale	John, KG6XF 408/255-9000	w/i only
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tba	All Colorado	Exam recording 303/360-7293	
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8/12/99	Ft. Myers	Leonard, KC4GOA 941/694-2505	w/i
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8/14/99	Oak Forest	David, NF9N 708/448-0580	p/r pref.
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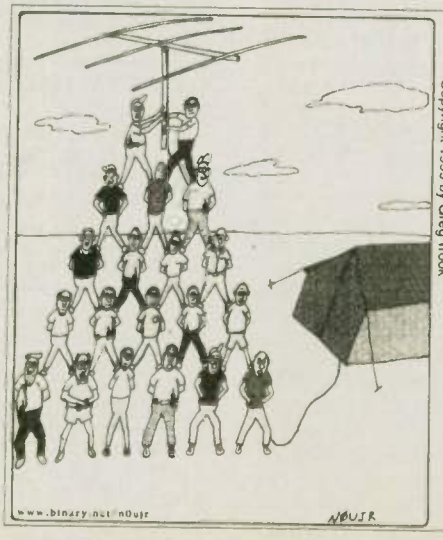

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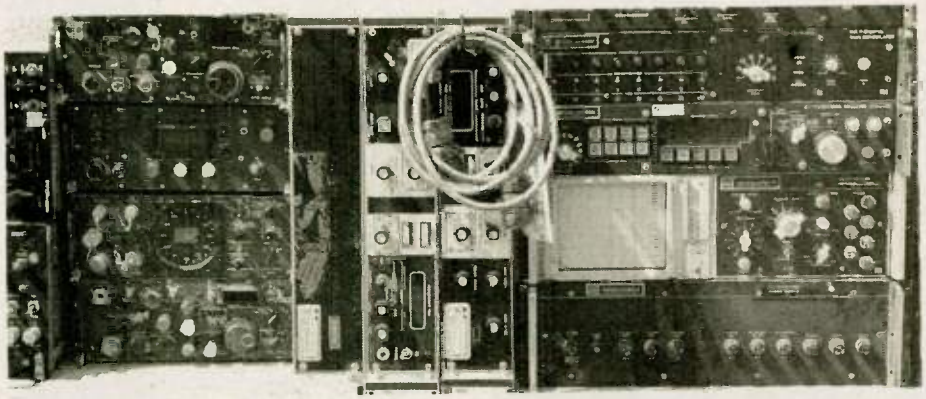

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How many of you recently purchased a new radio? If you bought one of the following: Icom IC-706 / 746, Yaesu FT-100 / 847 you're in luck! In addition to all the HF features, these radios also operate on VHF/UHF frequencies. You might say: "I know that, why do you think I bought the radio?" Unexplored might be the fact that they have CW/SSB capability on 6M and above in addition to the FM features and this is where our story begins!

Unknown to many is the entirely different world of 'weak signal' operation that is concentrated at the bottom of each VHF, UHF and above bands. Operation in this area is focused more on developing technical systems and skill, than pure communication. In fact many feel that, along with QRP operators, it is the last vestige of real Amateur Radio experimentation presently being conducted! O.K. you say, "What are they really doing?" Well for starters, all of their communications is done without the assistance of a repeater. The signal-to-noise ratio being much greater for CW/SSB than FM makes 2M contacts possible often over hundreds of miles and at times, can exceed 1,000 miles! Remember, we are only talking about 2M, what about the some of the other frequencies? In the recently conducted 222 and 432 MHz Sprint contests, I worked stations as far south as Fresno, CA (DM06) from Carson City, NV (DM09). In fact, when working Mike Stall, K6MYC of Fresno, CA (M^2 antenna fame), Mike reported that I was as strong (5-9) on 222 MHz as I have been on 2M SSB recently! It's important to note that there is a little hill between me and the California stations called the Sierra Nevada mountain range! This range varies from 6,000 to over 14,000 feet high.

What is it going to take to work this VHF/UHF SSB stuff? Well, for starters, you will have to add or change a few things. High on the list would be antenna polarization. All CW/SSB operation is centered on horizontal polarization — not vertical. A horizontal antenna is an absolute necessity! No, your vertical will not be a substitute, regardless of gain, unless you are willing to throw away 20 to 30 dB of signal strength! This compares to approximately 4 to 6 "S" units of signal loss... Hmmm. Interesting work can be done with a relatively modest system. For starters, a 12-element or larger Yagi and a 140W amplifier with receiver preamp will get you a fair amount of contacts. If you like this type of operation, you can 'stack' another antenna for additional gain at some later date. In the worst case, you can always use the antenna for FM by changing the polarization back to vertical and in some cases, slightly reducing the element lengths. As far as the amplifier goes, all current models will operate CW/SSB or FM without any modifications required. I guess what I'm saying is, "why not try it, there's nothing to lose?" I'll look for you on the bands.

If you would like more information, give a listen, or check into the weekly 'weak signal' operators net held every Sunday evening at 6:00 PM (pacific) on 3.943 MHz +/- QRM. Net control is Norm, KB6KQ and the net is sponsored by the Western States Weak Signal Society (WSWSS). The WSWSS can be reached at: wswss@qth.net or you can contact me at: kb6kq@pyramid.net or my web site: www.kb6kq.com.

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