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WORLDRADIO

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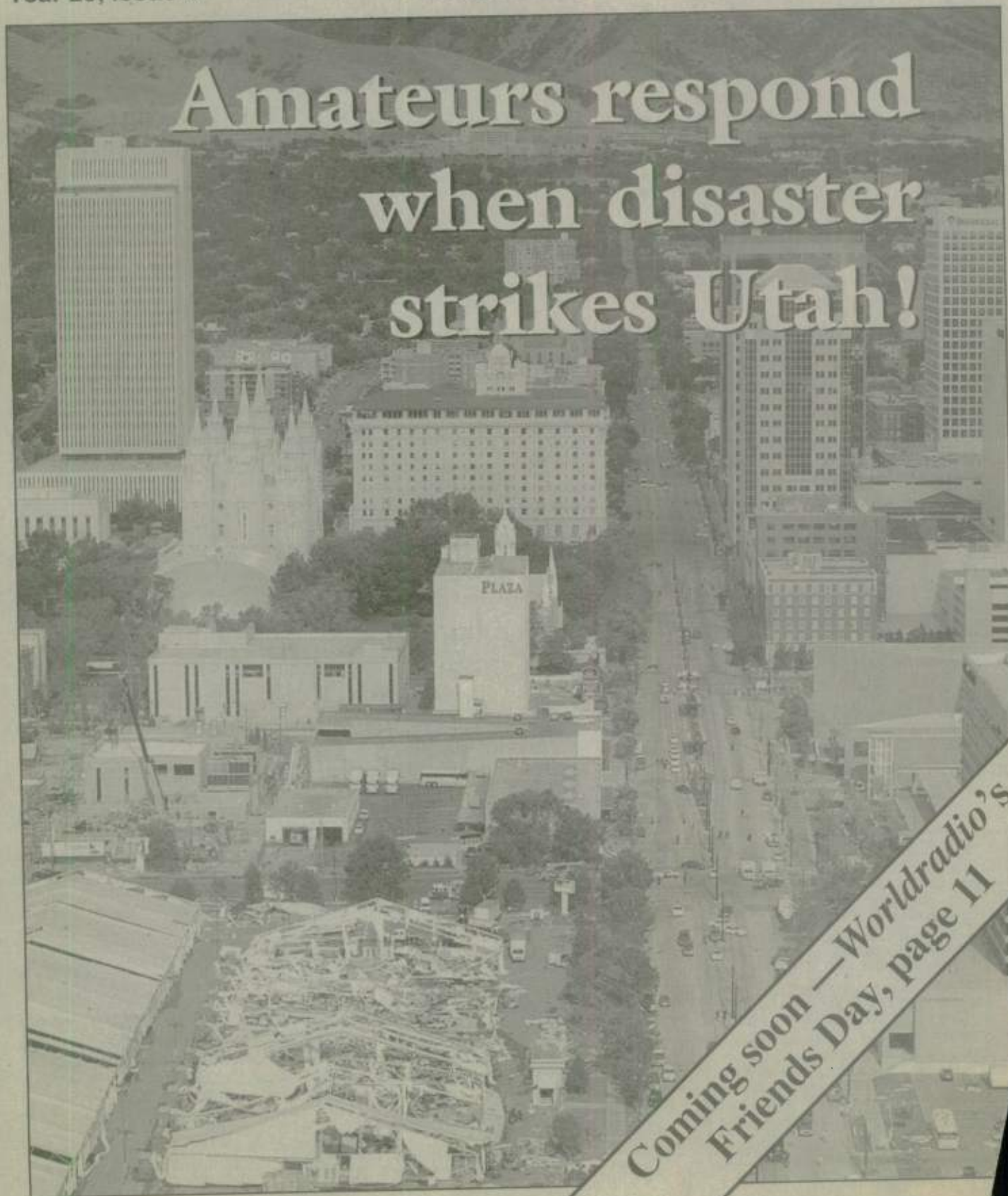

Amateurs respond when disaster strikes Utah!

Coming soon — Worldradio's Friends Day, page 11

FCC gives K1MAN additional time to clarify response

The FCC has given Glenn Baxter, K1MAN, of Belgrade Lakes, Maine, another 20 days to provide additional details about who was running his station on two days in mid-May. FCC personnel monitored and visited Baxter's station on 14 and 15 May but said they failed to find Baxter or anyone else on the premises. The FCC subsequently wrote Baxter to ask for the name and whereabouts of the control operator on the days in question, and Baxter replied 25 July.

According to the letter from FCC Attorney Riley Hollingsworth, Baxter had told the FCC that on 14 and 15 May he was "both mobile and portable in the local area." Hollingsworth said the FCC wants Baxter to identify whether it was mobile or portable and at what times and in what specific areas. Hollingsworth also pressed Baxter for more specifics on his station's operating schedule. The FCC also had asked if K1MAN employed station automation equipment and if the station ever was remotely controlled.

According to the FCC, Baxter's reply indicated that his three Collins transmitters were "controlled by two Radio Shack timers." Hollingsworth asked for details and a control circuit configuration "as requested" and for specific information of any remote control operation, including a schematic of the control circuit. He also asked Baxter for information on any automated tape control devices.

The FCC letter cautioned Baxter that "Commission rules require Amateur stations be under the physical control of a control operator, and that the control operator must ensure the immediate proper operation of the station." The letter cited FCC authority to request the information under §308(b) of the Communications Act and pointed out that the FCC "may revoke the license of a licensee who willfully fails to provide the information or who submits a willfully false or misleading response." — *ARRL Letter*

Zorro turns in his ticket

The Daily DX reports that DXpeditioner Yasuo "Zorro" Miyazawa, JH1AJT, voluntarily surrendered his Amateur Radio license to authorities last May. The DX newsletter, edited by Bernie McClenny, W3UR, cited a telephone conversation with the Kanto Bureau of Telecommunications in Tokyo, Japan, as the source of its report in last Friday's edition. Miyazawa was scheduled to receive the DXer of the Year Award at the New Orleans International DX Convention 28 August. On 16 June the *Asahi Shimbun* newspaper had reported that Miyazawa and another Japanese amateur were arrested after allegedly obtaining an operator license under false identification. Over the years, Miyazawa has been to many DX spots throughout Asia, Africa and the Pacific Ocean including 7O1A, XW3Ø/XW3ØA, A51/JH1AJT, XU1A, XW8KPL and E31A, among others. — *The Daily DX, ARRL Letter*

Sweden cuts top code speed

Sweden has cut its Morse code speed requirement from 12 to 5 wpm and reduced the number of license classes from four to two. The Class 1 license offers all Swedish amateur privileges and requires a 5 wpm CW test, while the Class 2 ticket is a no-code license for VHF/UHF operation only. Sweden also reportedly has a new three-year nonrenewable "study license" that offers full, and unsupervised, VHF/UHF privileges. — *W5YI Report, Newsline, ARRL Letter*

QSL Service handling cards for Congo

The ARRL Outgoing QSL Service will forward cards to the Congo (9O-9T, formerly Zaire). The new Congo national Amateur Radio society is Association des Radio Amateurs du Congo (ARAC), PO Box 1459, Kinshasa 1, Democratic Republic of Congo. As of the end of July, 1,081,320 cards had been handled (this includes cards going to U.S. incoming QSL bureaus and cards sorted by contractor). — *ARRL Letter*

Hams providing earthquake communications

Turkish amateurs and the Salvation Army are providing emergency relief communications in the wake of one of the most devastating earthquakes ever to hit that nation. News reports say at least 18,000 are known dead and the toll could surpass 40,000 by the time rescue efforts come to an end in a few weeks.

The quake which measured 7.4 on the Richter scale has left part of Turkey's telecommunications infrastructure in a shambles. In some areas telephone communications were almost nonexistent before the tembler. What was there before is now gone. Enter Amateur Radio.

Members of the Ankara Radio Amateurs Club have activated club station TA2KA. A club spokesman says earthquake traffic is being handled within Turkey on 14.270, 7.092, and 3.777 MHz.

Also involved in relief efforts is the Salvation Army Team Emergency Radio Network. SATERN is running health-and-welfare traffic operation as a result of requests from individuals in the U.S. seeking information on friends and relatives in earthquake-stricken Turkey. The Salvation Army World Services Office has been receiving requests since the quake hit.

A spokesman for SATERN says that the net is passing traffic on its normal 20-meter net on 14.265 Mhz. Quent Nelson, WA4BZY, is heading up the health and welfare operation from Covington, Georgia. Amateurs in the U.S. are permitted to handle third-party traffic to and from Turkey, but a problem has arisen. SATERN says its operators are having a problem locating stations in Turkey to handle the messages into and out of the quake ravaged area. — *ARRL, SATERN, Newsline*

WORLDRADIO

October 1999 Year 29, Issue 4

Tornado disaster in Utah

On the cover: Looking East along South Temple. The Wyndham Hotel is to the right, the devastated outdoor convention area to the center. In the distance you can see the LDS Temple and Temple Square. The tornado path was from lower right to center left. The tall structure at the upper left is the LDS Church office building.

Above: Emergency responders are evident among the devastation following the tornado hit to an outdoor convention area. What was once a block-long tent is in ruin, trucks are overturned, and debris scattered about. This area is near the center of the city along 400 west and South Temple. One person died when struck by debris in this area. — Photos courtesy of the *Deseret News*.

Once again, in time of disaster, Amateur Radio operators provided many hours of emergency communications. For the complete details read the story on page 16.

Features

Departments

Next month: Amateur Satellites; County Hunter; FM, Repeaters & VHF; Old-Time Radio; QCWA and Traffic.

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Editor's Log

It's true! RF exposure does have an effect on brain waves. Scientists and environmentalists have been warning the public for years that over-exposure to RF energy causes health problems. Recent evidence has shown this to not necessarily be true. ***Worldradio***'s crack investigative reporting staff has determined the reports were true — just having the direct opposite effect we were warned of! What other reason could there be for these nine individuals becoming ***Worldradio*** Super Boosters?

Taking their place among the many, many wise individuals joining the ranks of lifetime subscribers are:

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- **James Miller, WS8L**
  Rand, WV
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  Plymouth, MI
- **John Whelan, KIØDP**
  Milwaukee, WI
- **Jeffrey Anderson, N9ZUJ**
  Rockford, IL
- **Jerry Griffin, K6MD**
  Pacific Grove, CA
- **Stephen Butler, WG7JE**
  Auburn, WA

Or maybe it's not the RF. It could be the fact that they treasure the best magazine dedicated to Amateur Radio. Why not join them? Remember, the holidays are right around the corner. It's time to start dropping hints on the perfect gift for an Amateur Radio operator. No, not a new rig — a lifetime subscription to ***Worldradio***!

•

I have received word ***Worldradio*** is losing a terrific columnist. Dave Goodwin, VE2ZP, our contest columnist for the last two years told me he has a lot of things that need his attention, and something's got to give. So it's with a sense of regret and loss that his last column will be in the January 2000 issue.

Dave certainly made finding a contest easy. His easy-to-understand style will surely be missed by the staff and readers of ***Worldradio***. We wish him well.

So that leaves a void for future issues. The contest column is one of our most popular features, and I'd like to continue it. If any of you readers would like to fill Dave's shoes, or if you know someone up to the task, please let me know. It doesn't pay much, but think of the prestige!

•

I was one of the speakers at the GEARS (Golden Empire ARS) Hamfest in Chico, CA where I gave the audience an insight into the call sign abuse problem reported in our July and August issues. One of the most pleasant aspects of this Hamfest was the chance to sit down with Brad Wyatt, K6WR, our ARRL Pacific Division Director and Jettie Hill, W6RFF, the Sacramento Valley Seciton Director. We traded ideas about enforcement of the rules in the Amateur Radio Service.

One thing Brad mentioned was the numerous phone calls and letters he receives about individual problems with enforcement. In particular, lots of these letters and calls are complaints that the FCC hasn't done anything about a problem the Amateur Radio operator is having.

Think back about five or ten years. We had numerous problems, we all complained to the FCC — we even sent tapes, and what were the results? Nothing! It seemed like the FCC just didn't care anymore.

But now we have Richard Lee and Riley Hollingsworth working very, very hard to clean up the mess left them by the poor attitude of previous enforcers from the past ten years. Give them a chance! They can't come riding into town and clean up the mess in a couple of months. It takes a long time, sometimes years, to build a case against the few amongst us giving Amateur Radio a black eye. Just gathering evidence from all the resources available can take forever. (Remember, this is the government.)

The point is, it's going to take some time to really make an impact on some of the boneheads causing problems. They won't get the point until some of them have been forced to pay massive fines, have had their equipment confiscated and maybe even spent some time in jail before they figure out it's time to behave themselves. These problems are being worked on — but it may be a couple of years or more before we get back to the good old days when every Amateur Radio operator dreaded getting a "pink slip" from the FCC.

•

Just before noon on 11 August, our local news/talk station broke into their programming with news of the tornado striking downtown Salt Lake City.

As you read Jerry Wellman's story about Amateur Radio assistance in the wake of the tornado, take time to consider what action you would take in the event of a sudden, unexpected disaster in your community. Are you prepared to assist? Are you registered with your local ARES/RACES or another assistance group? Can you operate without commercial power? It's time for all Amateur Radio operators to stop and assess their capabilities and prepardness. — *WF6O*

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HKØF 1999 San Andres DXpedition

Denis Catalano, W4DC

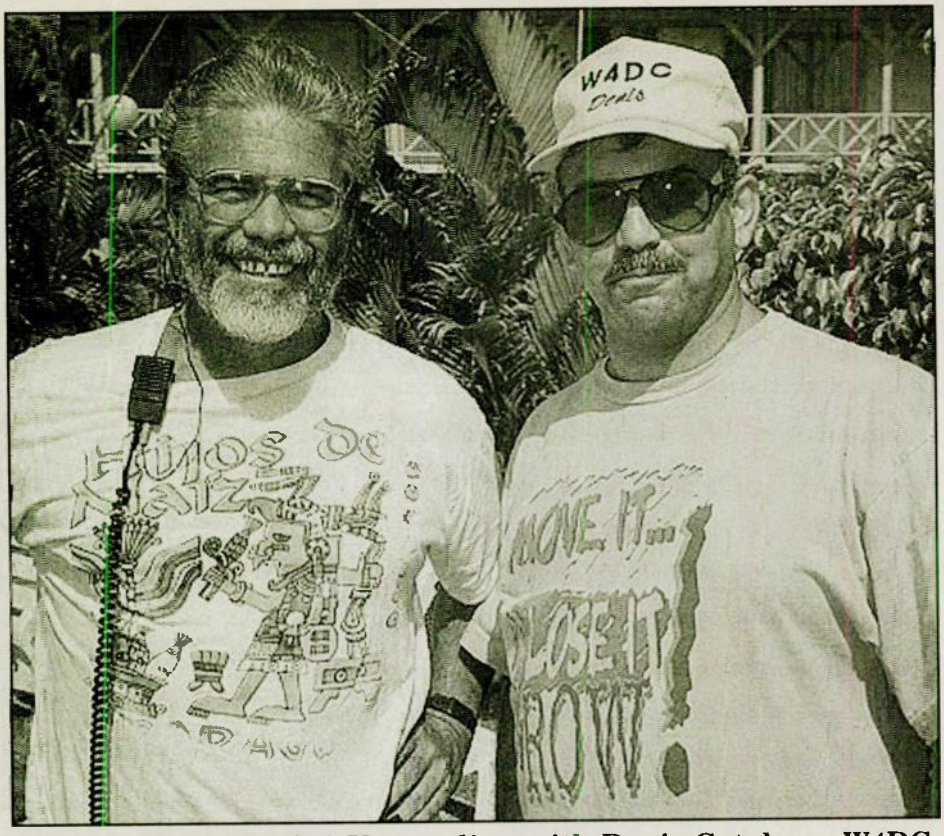
About every four years, members of Woodbridge Wireless Inc. (WWI) go on a DXpedition which coincides with a major contest. In 1986, it was Cayman Island — ZF2HI. In 1991, it was Canada Zone 2 — WD4KXB/VE2. In 1995, it was Montserrat — VP2MFM. This year, it was San Andres Island — HKØF. You might be thinking that there's nothing unusual about a DX or contesting club going on DXpeditions. However, Woodbridge Wireless is neither a DX or contest club, and goes on these DXpeditions without sponsorship from outside groups or manufacturers. WWI is a general purpose, public service club. In fact, last year WWI became an ARRL Special Services Club. All of these DXpeditions were noteworthy from an operating standpoint. ZF2HI won the multi-single world plaque in the 1986 ARRL Phone contest. The WD4KXB/VE2 effort was a CQWW Phone Zone 2 record for a number of years, and opened up this zone for many others to follow. VP2MFM won the multi-two world plaque in the 1995 ARRL Phone contest. Of course, we don't have the ARRL contest results from the latest DXpedition, but here's the story.

Left to right: Martha Henson, WN4FVU, John Humpfries, HKØOEP, (island Ham) Marlo (island, 11 Meters), (standing left to right): Ed Pitts, K5OF, Denis Catalano, W4DC, Everett Jackson, WZ8P, Vic Walz, N2PP, Carl Henson, WB4NH and Jack Ference, AA3KX.

The DXpedition was a real club effort from the planning, to the home page, to the QSLing. The DXpedition team really had a great time, but it took a lot of advanced planning, and some luck. Planning the DXpedition actually started a year in advance. Even with all the planning, there were many unknowns and open issues right up to, and during this DXpedition, as you will see. Not speaking Spanish was also a minor drawback, although we got through it with the help of some friendly English-speaking hotel staff and the local amateurs.

Ed Pitts, K5OF and I started planning for this DXpedition in February 1998, about a year in advance of the actual operation. We investigated lots of places to go for the 1999 ARRL Phone contest, finally selecting San Andres because of its location and relative rarity in the Caribbean. Even then, finding information about San Andres was sometimes difficult and often conflicting. Just ask your travel agent about San Andres. Chances are, the agent never heard of it.

First, some background about the Island. San Andres is a Caribbean island located about 450 miles northwest of Colombia and 118 miles east of Nicaragua. Although it belongs to Colombia, the island, together with nearby Providencia Island, constitute a separate DXCC entity with the prefix "HKØ". The San Andres IOTA number is NA033, its CQ zone is 7, and its ITU zone is 11. It's really a very small place — only 1 1/2 to 2



Richard Bard, HKØHEU, standing with Denis Catalano, W4DC, for a quick photo.

miles wide and 12 miles long, shaped like a sea horse with its tail pointing South. Noted for its natural beauty — beaches, clear waters, coral reefs, marine life, and pleasant 80-degree air and water temperatures, the island lifestyle is easy-going, and the islanders are very friendly. You can find out more about San Andres by visiting www.san-andres.com and www.sanandres.org.

Planning for the DXpedition consisted of 20 major tasks divided up among the seven team members. For example, once we picked the country and assembled the team, Jack Ference, AA3KX, was assigned the task of finding accommodations, which turned out to be difficult compared to the last three WWI DXpeditions. Ed was in charge of equipment and customs, and I was responsible for the licensing and publicity. We divided other tasks between the rest of the team members: Everett Jackson, WZ8P, Vic Walz, N2PP, Carl Henson, WB4ZNH, and Martha Henson, WN4FVU. Each of the tasks is a story in itself, but I will highlight just a few of the more interesting ones.

Getting to San Andres wasn't easy. Since there are no direct flights from the U.S., we had to find alternate connections. One was through Bogota, Colombia and the other through San Jose, Costa Rica. Two members of the team took the Bogota route, while the rest of us went through San Jose. Because of the sporadic and frequently changing flight schedules of the connecting airlines, it took most of us an extra day in both directions. Up until the week before departure, we weren't sure of the secondary airline schedule, but everything worked out in the end. Going through the numerous airline check-in, security points, immigration checks, and customs also required a great amount of patience. It was the first time I was patted down at an airport. Many of us were charged overweight fees because of the hundreds of pounds of equipment we were carrying. The team shared over $900 of overweight charges. We took everything with us (three amps, two A3 beams, three transceivers, tools, wire, over 1000 feet of coax, RTTY gear, and many other accessories) including two TS-450S transceivers and two Alpha 78 amps. The only items that we didn't carry with us were antenna masts/towers. We purchased 60 feet of two-inch water pipe on the island to support the antennas.

Our QTH for the DXpedition was the Caribe Campo Hotel, located in San Luis

on the East side of the island. Even with all the planning, we weren't sure that the hotel villa we rented was going to work out. In fact, just a few weeks before our departure, we were notified that the house we had rented would not be available. Everything worked out in the end, and the hotel rooms we used added more flexibility to the antenna situation. We were treated very nicely by the hotel staff, and the food was fantastic. Electricity and water, especially hot water, was sporadic, and most of us didn't have a hot shower all week, but no one complained since everything else worked out so well.

Our DX/Contest expedition was Field Day-style with the group setting up all the stations and antennas. Setting up the antennas was a real challenge. We had scoped out palm trees to use as antenna supports for our 40- and 80-meter wire beams, but the morning we were going to put them up, we were awakened at 6 a.m. by the chopping of trees, two of which were dead palms that were going to support our reflectors. After getting over that shock, we proceeded to fasten our wire dipoles to the remaining palms. We paid an islander $10 a tree (this photo is featured on our QSL card). We also strung out a beverage, but we had to go 500 feet from our station to the feed point for a northern shot. We discovered that we didn't have enough coax, so we purchased TV cable on the island to feed the beverage. The yagis for 10/15/20 Meters were put up quickly, but the Force12 verticals for 80M and 160M took a lot of time to set up properly. We selected one of the four hotel rooms as the radio shack, and doubled up on the remaining three rooms as sleeping quarters. We did have to do some "rewiring" in the rooms to support the two 220VAC amps, and that worked out, too. In all, it took about four days to set everything up the way we wanted which is one reason the "on the air" time before the contest was a bit limited. We tried to keep a RTTY station on the air since this mode was frequently requested.

Getting our licenses was also more difficult than our last DXpedition, but with the help of the American Embassy in Bogota, we received our slant calls (to be used before and after the contest) about four weeks before our departure. Our request for a special contest call went unanswered, and we then decided on using my call HKØ/W4DC for the contest. After being on the island four days (one day before the contest), we received word on the air from several American amateurs that our contest call had been issued and the Colombian Radio League was trying to get in touch with us. Again, at the last moment, things worked out and we received a fax several hours before the start of the contest. HKØF had become a reality. At about this time, we found that while we transmitted, the networked computers were changing bands at will and making up new call signs. So again, we solved another problem at the last moment. We unlinked the computers, and used our operating plan to essentially solve the problem of not being able to link the computers. We operated multi-two, basically following a three-hour rotating operating schedule, and used paper multiplier sheets periodically updated at each station.

Just when you would have thought everything was going smoothly during the first hour of the contest, we had our first of five power outages. We took each one in stride, and pressed on after rebooting the computers. The U.S. and Canadian pileups were fantastic and well disciplined. 10 Meters was so good that we couldn't go to 20 Meters as often as we would have liked. The beverage really helped out on the low bands, although conditions the first night were not very good on 160M. Nevertheless, we made 154 QSOs on 160M with 82 stations working us on all six bands during the contest. With a total score of over 11,737,000, here is the breakdown of the results:

BAND	Qs	Xs
160 M	154	41
80 M	837	57
40 M	1666	59
20 M	1935	58
15 M	3213	58
10 M	3980	59
TOTALS	11,785	332

After the contest, operations continued using the individual HKØ/home call signs with emphasis on CW and RTTY. The final QSO totals before and after the contest by mode were: RTTY 1,093, CW 3,236, SSB 2,144, for a grand total of 18,258 QSOs for the DXpedition.

The team had a great time, and things all came together, many at the last moment. We have many people to thank including our support team: KA4RRU, K5VG, KR4KF, KC4YXB, KE4BUS, N4DXS, WAØDYJ, K8MLM, WD4AIR, W2FU, and the Woodbridge Wireless. Thanks also to the Liga Colombiana De Radioaficiondos (LCRA), HJ3PXA, the Colombian Ministry of Communications, Force 12, all the Island Hams (especially HKØHEU) and WZ8P for printing beautiful color fold-out QSL cards. Check out the home page, which has additional information about the DXpedition and team, and also includes a log checker http://www.pwcweb.com/wwi/DXpedition/ . QSL with a SASE via my call book address — W4DC. A 30-minute professional video is also available on loan. Thanks again for working us during the 1999 San Andres DXpedition.

Amateur Radio Call Signs

The following shows the last call sign in each group to be assigned for each VEC Region under the sequential call system as of 9 August 1999.
For more information about the sequential call sign sytem, see Fact Sheet PR5000 #206-S dated August 1996, or contact the Federal Communications Commission, Consumer Assistance Branch, 1270 Fairfield Road, Gettysburg, PA 17325-7245, toll-free 1-888/225-5322.

Radio District	Group A Am Extra	Group B Advanced	Group C Tech./Gen.	Group D Novice
Ø	ABØIX	KIØQQ	++	KCØGHO
1	AA1UQ	KE1LQ	++	KB1EHX
2	AB2GI	KG2QY	++	KC2FKG
3	AA3ST	KF3DJ	++	KB3EDE
4	AF4PL	KV4BN	++	KG4EIC
5	AC5TB	KM5VS	++	KD5HYZ
6	AD6JA	KR6CG	++	KF6YKY
7	AC7BK	KK7UC	++	KD7GHF
8	AB8EK	KI8JA	++	KC8MYF
9	AA9XG	KG9QB	++	KB9VBQ
N Mariana Is	NHØP	AHØBC	KHØIF	WHØABM
Guam	++	AH2DL	KH2UN	WH2AOB
Hawaii	WH7B	AH6PW	KH7UY	WH6DGA
American Samoa	AH8R	AH8AH	KH8DO	WH8ABI
Alaska	ALØQ	AL7RM	KLØUI	WL7CVD
Virgin Island	++	KP2CP	NP2KN	WP2AIK
Puerto Rico	WP3E	KP3BM	WP3DY	WP4NOQ

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

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Another idea for restructuring

Thanks for all the e-mail on last month's column. It is gratifying to know that there are lots of Hams who don't feel that every issue has to be decided on the basis of "the right way" versus "the wrong way." Sometimes you just have to make the best of it, no matter what the outcome. The pending FCC Amateur Radio license restructuring is like that in many ways, not just the issue of being able to copy Morse code at some arbitrary speed. As I said last month, the outcome of the debate over Morse code just doesn't matter to me. Come to think of it, the outcome of the rest of it doesn't matter much either. There are so many possibilities and permutations. In reading through the comments received by the FCC, as well as commentaries and letters to the editor in various Amateur Radio-oriented publications, I have concluded that there may be as many possibilities for restructuring as there are Hams.

While there seems to be a push for simplification, maybe the solution lies in the other direction. Instead of having fewer license classes, each with a corresponding label and allocation of privileges, why not make it more personal? Why not license each amateur according to his needs and interests? With the whole process becoming more and more computerized, the logistics may not be such an obstacle. What the heck — let's make everyone happy!

First of all, we have to have a name for the new system — an umbrella term to let everyone know that the paradigm has shifted. We'll call it the Simplified Integrated Liberal Licensing Infrastructure (SILLI). The SILLI program will allow each new and existing licensee to fashion a combination of prerequisites and privileges for a license that suits them best.

For example, an amateur who just wants to sit at his mike and work DX can apply for a Satisfied with Using Phone to Every Region (SUPER) license. The requirements for the SUPER license class would be knowledge of elementary meteorology ("It's really been hot here, Old Man.") and climatology ("It is likely to remain hot here.") SUPER licensees would be tested on their ability to maintain a conversation under heavy QRM and QSB conditions. One way to test this skill is to have the SUPER class applicant stand at one end of a football field while the examiner stands at the other end, each using a megaphone that only works intermittently — say for 30 seconds out of each minute. The applicant would fail if each "transmission" did not begin with, "Fine Business, Copy, Old Man."

There should definitely be a separate license available to contesters. The Contest Only Operator License (COOL) class. The main qualification would be ownership of at least three contest logging programs and an addiction to caffeine and half-eaten sandwiches. In addition, COOL class candidates would have to demonstrate the ability to tune a linear amplifier within one Watt of legal limit or two degrees of smoke (no dummy load allowed) and have experience in DX pileups, as evidenced by multiple contacts on the same band with at least two rare DXpedition stations.

Special licenses would be granted to SUPER class operators who also qualify to run contests. They would be known as SUPER-COOL operators. As you can see, when you want to implement SILLI, you have to be really flexible.

There would be a separate class of licenses for the Morse code aficionados. For high speed operators, there would be the coveted Dedicated Interest in Difficult And Historical (DIDAH) class license. It would require at least a 20 wpm code test. Those who enjoy copying code entirely in their heads could demonstrate that ability and earn the Done In Thought endorsement, allowing them to proudly display a DIDAH-DIT license certificate on the wall of the Ham shack. Of course, those who enjoy code, but just can't get up to speed will be relegated to the Perfected Letters with Only Dots (PLOD) or Perfected Letters with Only Dashes (also PLOD) class tickets.

Special consideration would be given to the environmentally minded QRP amateurs with the Little Operating Wattage at Just Under Inefficient Communication Energy (LOWJUICE) class for transmitting. VHF/UHF only operators would get the Transmitted Emissions Not Found Over Unlimited Range (TENFOUR) class ticket which could be upgraded to Gigahertz Ultra Duty (GUD) status for experimentation in the microwave spectrum. VHF QRP could be recognized as well with the Below Ultimate Distance Input (BUDI) license. By combining skills, an operator who never tunes his transmitter below 30 MHz could proudly display a ticket allowing QRP operation in all parts of the upper spectrum by earning a TENFOUR-GUD-BUDI license.

Face it! There is room in the Amateur Radio family for every cousin and shirttail relative. The uniqueness of a call sign is not the only way to distinguish individual accomplishment and privilege. SILLI licensing would give something extra to the restructuring of Amateur Radio licensing — something less general and more advanced. Write to the FCC today! Tell them you have the answer to restructuring and it is SILLI. Insist that they can make everyone happy if they are willing to adopt the SILLI solution. E-mail your ARRL representatives and tell them you want them to get serious about SILLI. It's not too late! If we all act together, raising one SILLI voice in unison, we can make sure the final outcome of the license restructuring debate is SILLI.

— David Splitt, KE3VV. 611 Utah Avene, N.W., Washington, DC 20015 or e-mail: ke3vv@compuserve.com

Worldradio's Friends' Day

Every year, on the last weekend in June, it's the ARRL's great Field Day. Now, the first Saturday/Sunday in June, it's ***Worldradio***'s Annual Friends' Day.

From your letters, and in-person meetings at conventions, we do believe that ***Worldradio*** subscribers are the very finest Amateur Radio operators. They're very friendly.

You should meet each other! Great people should get together. Run into old friends, make new friends.

Start: 1800Z Saturday 03 June 2000
Stop: 1800Z Sunday 04 June 2000
Maximum time allowed 16 hours

Bands: All HF (No WARC bands) and VHF bands. Look for CW contacts on the half-hour marks

Call: "CQ, WR".

Exchange: First Name and the first three numbers of your ZIP Code. Canadians give the province. Non-North Americans, give your city.

Scoring: Two points for each completed 2-way contact. Multiplier is the total number of different ZIP codes and provinces and countries. Stations may be worked on different bands and modes. (CW contacts must be made in CW portions of the band.)

Awards: Certificates will be awarded to the top scorer in each ZIP Code (first three-number designation), Canadian province and country. Also an Honorable Mention certificate will be awarded to all others submitting logs. The certificates will be 8-1/2 x 11 and available for $1 and a No.10 SASE.

QRP stations, 5W CW, 10W SSB, will be listed in their own category.

Deadline: Entries must be received by 06 July 2000. Results will be printed in ***Worldradio*** as soon as possible. (Volunteers in the Sacramento area to help with the entries will be greatly appreciated.)

Power: As a possible "tune-up" for Field Day any station operating from any non-"plug-in-the-wall" power source may add 100 points to their score.

So as to reduce RF pollution in North America, power is restricted to 150 Watts or less. Except non-North American stations may run up to their legal limit to help facilitate intercontinental contacts.

Non-subscriber contacts: You might not get too many because with the contest on Saturday, non-subscribers will be taking their weekly bath that day. Saturday night they'll be drunk.

However, if someone hears you calling "CQ WR" asks what it is, tell him it's the QSO Party for ***Worldradio*** subscribers. If he asks, "Can I give you a point?" Say, "Yes, Please" give and get the exchange and log him for 1 point, no multiplier.

Log entries will only be accepted from ***Worldradio*** subscribers.

Logs: Just send in the total number of contacts, number of multipliers, total points, and off times.

We don't need all the contact logs because ***Worldradio*** subscribers don't cheat! On the off-chance that there might be one, if he wants to hang a certificate on the wall that shouts "Liar, Liar" that's his problem.

Any suggestions for this annual gathering of the Good Guys and Gals will receive careful consideration from the Contest Committee.

Note: Since this has the potential (except for Field Day) of being the largest on-the-air event, efforts should be made to minimize interference to non-contest stations. Also, while it may appear as a contest, we do encourage chatting in the contacts. And, we expect that when you are on the air some friend may say something like, "I always thought you were brilliant, but hearing you call 'CQ WR' proves it even more."

A new mindset to rescue Amateur Radio

Donn Fisher, W6NMH

Pick up a Ham publication, or go to any Amateur Radio gathering, and you will probably run-across a comment or editorial stating that Ham radio is dying. There is no need to gather statistics to prove the point. It seems pretty obvious to anyone who attends a Ham meeting or visits a Ham event: there are a lot of old-timers and few young Hams. So, while everyone else is worrying about a Y2K problem that may cause relatively short-term inconvenience and confusion, I am worried about the long-term survival of Amateur Radio.

Will the 21st century see Amateur Radio become an avocation for a unique breed of men and women, with a shrinking number of licensees and a continuing shrinking of the frequencies available to them? As our homes fill with more microprocessor-powered electronic gadgets, will radio frequency interference and Ham radio become synonymous? Will we be driven off the air because cheap electronic equipment succumbs to RFI from whatever source? Will mass-media pop science condemn Amateur Radio antennas as dangerous to our health? Or will we be pushed into the RF spectrum hinterlands by big-bucks spectrum-hungry commercial enterprises? Will Hams join the hunters and dirt bikers as they are pushed off the map? The bottom line is, "We'd better do something. Soon!"

What went wrong?

We all agree that something should be done, but then we seem to hit a brick wall. One person says, "Give classes!" Another says, "Let's set up a Ham station at a mall or county fair." The ARRL would have you believe that all of us average Hams should become high-tech design engineers who can compete technologically with the millions of dollars being spent annually on commercial communications research. Fat chance. Bill Gates' spare change can launch more communications research than all of us put together. And I'm sure that he could find great uses for our share of the spectrum.

All of these things are nice pat answers that do little to bring in fresh, young blood. However, we keep doing the same old things because they worked in the past. In fact, the solution can only be derived by analyzing the difference between today's society and our society of 30 to 40 years ago. (I've often said that, even with average intelligence, if you just take the time to analyze a problem, you'll be ahead of 95% of the rest of them!)

It was a different world 30 years ago. Back then we had Hallicrafters, Hammarland, National, Heathkit and many smaller companies producing equipment for the short wave listening/Ham radio market. The short wave bands were magical. You can hear the difference on a Hallicrafters 45 rpm record from the early 60s that I own. It was designed to sell Hallicrafters radios by encouraging short wave listening and Ham radio. It has police calls, international broadcast stations, and the voice of a Russian pilot reporting a shoot down. (So they report. It is noisy and in Russian, so it could just as well been a Russian Ham reporting his latest chess move!). You have to hear it to believe the differences from then til now. In the days when that little record was sold, the sounds on the record was exciting. Now they seem rather quaint.

Thirty years ago we didn't have much to excite teenagers. We had black and white TV, radio, pets, sports, and school. Amateur Radio was probably the only interactive technology in our lives. A phone call to another country was almost unheard of; it was reserved for heads of state, not for ordinary citizens. The thought of using Ham radio, even using CW, to exchange messages with someone 500 or 1000 miles away was exciting. One could even imagine talking to a foreign country with Amateur Radio. Now, that was awesome!

Today? Video games! The Internet!! Star Wars!!! We see live video directly from the far side of the world every evening. If you want to talk to the other side of the country, you just pick up the phone and dial a friend or relative. It may only cost five cents a minute, big deal. Or use the internet to talk to people all over the world with e-mail or internet telephone at no additional cost. Now, there's interactive technology.

Furthermore, the demands on a teen's time are far greater now than 30 years ago. Commercial organized activities are big business. After-school activities are promoted for teens and even sub-teens. Think of all the soccer moms who are running themselves crazy, trying to shuttle their kids around to all these activities. No wonder we don't see many young Hams these days, they're all too busy with other organized activities. If you look at it in this light, traditional Ham radio has very little to offer today's teens.

Do you get the picture? Amateur Radio is in direct competition with all these other attractions. We can't sell Ham radio as the only way to talk to someone far away; the telephone is easier and quite a bit cheaper. The bottom line is that Amateur Radio can no longer be sold as an end in itself. Put another way, it is no longer the main course. So where does that leave us?

What should we do?

Are we in such bad shape, with little hope of enticing teenagers and adults into our ranks? No, quite the contrary. Times change and so must Amateur Radio. We have the opportunity to take a lemon and make gallons of lemonade. While some Hams proclaimed that loosening Amateur Radio licensing requirements would bring about the downfall of Ham radio actually, the loosening of licensing requirements can be turned into a benefit for Ham radio. It is now easier to get a Ham license than at any time in history. (Don't you just love that political phrase, "... than any time in history?") Anyone can get a Ham license by taking an eight-week course (a

two-hour class once a week) or a single weekend crash course. Now, isn't that easy?

But, you ask, "Who wants a bunch of CB-type operators on the Ham bands?" The answer is: "I do! And so should you." But, let's not call them CB-types. I would love to have a number of "citizen Hams" in my neighborhood. Just as the police like "citizens" to ride-along to see what their life is like, so should we want citizens to see what Amateur Radio is all about, and then invite them into the fun. Let's look at the benefits of an influx of citizen Hams.

Do we really need citizen Hams?

Yes, you bet. Here's why. Take your closest friends or neighbors. Wouldn't it be nice if they had an Amateur Radio license? Are you going to be late for dinner with friends? Even if they have a cell phone, they either don't have it turned on, or you don't have their cell phone number. Wouldn't it be nice to just give them a call on 2 Meters and explain exactly where you are? It's a lot nicer, safer, and easier than using a cell phone. And you can continue to chat with them as you drive to the restaurant.

How about that skiing weekend with your buddies? Wouldn't Amateur Radio be a real benefit while you caravan up?

Think about your associates at work. If a few of them were citizen Hams, I bet you'd be friends, not associates. It would benefit you, your employer, and probably society as a whole. After all, teamwork grows when the team members have common interests.

Want to put up an outside antenna at home? Wouldn't it be nice if your neighbor was a citizen Ham who thought all beams are beautiful? How about antenna ordinances? A bunch of citizen Hams at a city council meeting can help sway those commissioners. Citizen Hams can give us the clout we need to assure our antenna and operating rights. Just because Amateur Radio is a hobby, don't think we shouldn't be political. Remember, in this political world even us Hams have to play the numbers game.

What about CW?

Oh yeah, I hear you; the fellow in the back row. You ask, "But what about CW? I love CW and don't want to see it die." The answer is: If you like CW, fine. So do I. We have many kHz of spectrum on each band set aside exclusively for CW use. And they won't go away (but they may shrink a wee bit). You have to remember, most of the citizen Hams will have little or no interest in putting up tri-band beams, running kW rigs, or working DX. Most will stay on the VHF and UHF bands. The few percent that will upgrade and move down to the HF bands will be enthusiastic full members of the Ham community.

How do we get citizen Hams?

As I mentioned earlier, we can no longer sell Amateur Radio as the main course. It has to be sold as a condiment. Just as catsup and mustard can enhance a hamburger, so can Ham radio enhance other endeavors. For instance, Ham radio is particularly handy if you go:

- RVing
- hiking
- off-road 4WD
- yachting (don't leave the dock without 2 Meters!)
- any weekend with a group of friends

A different mindset

Before we go off to enlist all our friends and neighbors into Amateur Radio, we need to take on a new mindset. Call it Ham Radio Y2K. A new Ham radio mindset for the 21st century.

Ham Radio is easy

You won't ever get anyone interested in Amateur Radio by telling them how hard it is, or how technical you have to be to get a Ham license. Instead, tell the truth. Basically, getting a Ham license is about as difficult as getting a driver's license. In fact, it is easier. Here's the proof:

Top ten reasons the Amateur Radio test is easier than a driving test:

#10 You don't have to take time off work. The test is given evenings and on weekends.
#9 It only costs about $6 to take the test.
#8 No long lines.
#7 You take the exam in a relaxed atmosphere.
#6 You can sit down and take your time.
#5 You are among friends, not bureaucrats.
#4 The test is multi-part and you "bank" the ones you pass.
#3 You can re-test whenever you want.
#2 The other applicants who pass with you will become lifelong friends.
#1 Even a CW exam is easier than a driving test!

What next?

Now comes the fun part. At your next club meeting, open up a discussion of Ham Radio Y2K. Volunteer to spearhead your club's membership drive. If you're not up to the job, think about the club's membership and suggest that a more appropriate person take the lead. Talk about your club's PR and license classes. Discuss how you have operated in the past, and how you can refocus to encompass the new mindset. During your discussion, use the policy that every idea is a good one, just that some are better than others. If someone has an idea that doesn't "fit" your club, don't criticize it. Instead, politely move on to the really good ideas. Write all ideas down, so you will not lose them. — after all, you may want to come back and revisit the list in a few months.

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Reads complex impedance . . . Super easy-to-use

New MFJ-259B reads antenna SWR . . . Complex RF Impedance: Resistance(R) and Reactance(X) or Magnitude(Z) and Phase(degrees) . . . Coax cable loss(dB) . . . Coax cable length and Distance to fault . . . Return Loss . . . Reflection Coefficient . . . Inductance . . . Capacitance . . . Battery Voltage. LCD digital readout . . . covers 1.8-170 MHz . . . built-in frequency counter . . . side-by-side meters . . . Ni-Cad charger circuit . . . battery saver . . . low battery warning . . . smooth reduction drive tuning . . . and much more!

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Find your antenna's true resonant frequency. Trim dipoles and verticals.

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Perfectly tune critical HF mobile antennas in seconds for super DX -- without subjecting your transceiver to high SWR.

Measure your antenna's 2:1 SWR bandwidth on one band, or analyze multiband performance over the entire spectrum 1.8-170 MHz!

Check SWR outside the ham bands without violating FCC rules.

Take the guesswork out of building and adjusting matching networks and baluns.

Accurately measure distance to a short or open in a failed coax. Measure length of a roll of coax, coax loss, velocity factor and impedance.

Measure inductance and capacitance. Troubleshoot and measure resonant frequency and approximate Q of traps, stubs, transmission lines, RF chokes, tuned circuits and baluns.

Adjust your antenna tuner for a perfect 1:1 match without creating QRM.

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MFJ-259B **$259.95**

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MFJ's comprehensive instruction manual is packed with useful applications -- all explained in simple language you can understand.

Take it anywhere

Fully portable, take it anywhere -- remote sites, up towers, on DX-peditions. It uses 10 AA or Ni-Cad batteries (not included) or 110 VAC with MFJ-1315, $14.95. Its rugged all metal cabinet is a compact 4x2x6¼ inches.

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MFJ-249B, $229.95. Like MFJ-259B, but reads SWR, true impedance magnitude and frequency only on LCD. No meters.

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MFJ-219B, $99.95. UHF *SWR Analyzer*™ covers 420-450 MHz. Jack for external frequency counter. 7⅛x2⅛ x2¼ inches. Use two 9 volt batteries or 110 VAC with MFJ-1312B, $12.95. *Free* "N" to SO-239 adapter.

SWR Analyzer Accessories

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MFJ-66, $19.95. Plug a dip meter coupling coil into your MFJ *SWR Analyzer*™ and turn it into a sensitive and accurate bandswitched dip meter. Save time and take the guesswork out of winding coils and determining resonant frequency of tuned circuits and Q of coils. Set of two coils cover 1.8-170 MHz depending on your *SWR Analyzer*™.

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Wear it around your waist, over your shoulder, or clip it onto the tower while you work -- the fully-adjustable webbed-fabric carrying strap has snap hooks on both ends.

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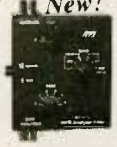

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Measure signal strength over 60 dB range, check and set FM deviation, measure antenna gain, beamwidth, front-to-back ratio, sidelobes, feedline loss in dB. Plot field strength patterns, position antennas, measure preamp gain, detect feedline faults, track down hidden transmitters, tune transmitters and filters. Plug in scope to analyze modulation wave forms, measure audio distortion, noise and instantaneous peak deviation. Covers 143.5 to 148.5 MHz. Headphone jack, battery check function. Uses 9V battery. 4x2½x6¼ in.

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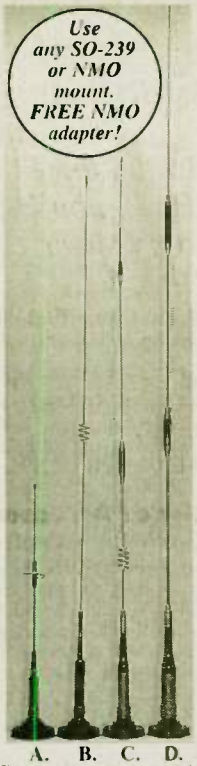

A. B. C. D.

Shown on mini-mag mounts, not included.

Each MFJ RuffRider™ mobile antenna comes with MFJ's unique 90 degree "fold-over" feature -- lets you pull into your garage without knocking your antenna over!

MFJ's heavy duty bases are extremely strong to handle super rugged rides and day-to-day highway abuse.

MFJ's *RuffRider*™ High Gain dual band 144/440 MHz mobile antenna series is for the serious mobile ham who demands the highest quality, premium products at reasonable prices.

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Phased radiators flattens the radiation pattern and concentrates your power to give you *super gain.*

High-Q phasing coils are housed in weather proof high-tech plastic insulation. They're attached to stainless steel stacked radiators by solid metal end sections.

Heavy Duty Base

Rigid, heavy duty solid metal base reduces SWR flutter due to wind vibration. Two Allen set screws securely fastens radiator.

Specially treated center pin provides excellent electrical connection.

Quickly screws off -- helps prevents theft of your expensive rig.

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RuffRiders™ have a PL-259 base mount for quick installation to your heavy duty SO-239 magnet, trunk/hatch, gutter or mirror mount.

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MFJ mounts are recommended.

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Choose from several different length and gain antennas . . .

A. ***RuffRider Junior***™. Premium. short 16½" antenna fits in any garage on any auto. ¼ Wave on 2 Meters, ½ Wave. 3 dB gain on 440 MHz, 100 Watts. No fold-over.

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144/440 MHz Antenna Tuner with *built-in SWR/Wattmeter*

Covers 136 to 175 MHz. Handles 150 Watts. Compact 4x2¼x1½". *New!* MFJ-922 **$79.95**

MFJ *RuffRider*™ super heavy duty Antenna Mounts

MFJ-345 Lip Mount is shown mounted vertically to a mini-van's angled hatchback lip. Note extra-wide mount with reinforcing tab at right -- safely secures heavy antennas. Swivel mount is adjusted so antenna is near vertical away from mini-van to clear luggage rack.

Trunk/Hatchback *Lip* Mount

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MFJ's *RuffRider*™ super heavy duty solid steel Trunk/Hatchback *Lip* Mount mounts to any lip on your vehicle.

Extra-wide *four* inch lip and large reinforcing tabs on each side safely distributes the load over your vehicle's lip.

Two large set screws on each end of the mounting lip locks your mount in place. A scratch-proof rubber guard protects your vehicle's finish.

Secures large VHF, UHF and medium size HF antennas even at highway speeds.

Mounts on lips at any angle. Two axis of rotation lets you position your antenna vertically, horizontally or at any desired angle. Serrated swivel joints locks securely in place with huge 3/8 inch set screw.

Has SO-239 base mount. Use adapter for NMO. Includes low loss coax with PL-259 connector, Allen wrenches and protection caps for SO-239 and locking screw. One year MFJ *No Matter What*™ limited warranty.

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MFJ's *RuffRider*™ Mirror/Luggage *Pipe Clamp* Mount mounts on support rod of mirror, luggage rack or spare tire carrier of your truck, van, RV or SUV. Mounts on any horizontal, vertical or angled rod or pipe up to 5/8 inches in diameter.

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Two axis of rotation lets you position your antenna to any desired angle. Serrated swivel joints locks securely in place with huge 3/8 inch set screw.

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Amateurs respond to Utah tornado

Jerry Wellman, W7SAR

As Snoopy could write: "It was a dark and stormy day." For many in Salt Lake City, it was the storm of the century. For Amateur Radio operators, it was an opportunity to serve.

Wednesday, 11 August 1999 will be remembered as one of those days where an event spawned hundreds of stories and created hundreds of heroes. Emergency service volunteers will point to the "Salt Lake Tornado" as reason to be prepared and as Robert Baden-Powell told Boy Scouting nearly a century ago, we must be "prepared for any old thing."

Salt Lake City is nestled among several mountain ranges and along the shores of the Great Salt Lake. To the east and west, mountain peaks shadow the city and the lake creates odd weather patterns often called the "Lake Effect." We get heavy snow, we get rain and thunder, we have experienced floods and mudslides, we have learned to expect an earthquake — but a destructive tornado isn't among the common potential emergencies we have learned to expect.

Shortly before 1 p.m. on the 11th, the skies darkened and several weather cells moved into close proximity, creating what one meteorologist called "bomb genesis." The result was a destructive tornado that ripped through downtown Salt Lake City and then into an historic residential area called the "Avenues." Along the way one man would lose his life, a hundred would be injured, homes would be destroyed, and commercial property damaged. The state Capitol would sustain damage as well as some minor damage reported at the Church of Jesus Christ of Latter-Day Saints' Temple Square. The LDS church is constructing a major assembly hall north of Temple Square and home video showed dramatic scenes as a giant construction crane collapsed. Damage from that collapse was limited to superficial hits on the outside of the new building and the crane operator had moments before felt ill and climbed down for lunch.

Aerial views showed homes with roofs removed, businesses almost leveled, and cars crushed under debris. The Delta Center, home of the Utah Jazz NBA team sustained major damage as the roof was lifted and windows blown out. The Wyndham Hotel sustained major damage as well as an outdoor retailers show being set up next to the hotel.

As the sky darkened, hail fell, and power failed, initial reports to the *Deseret News* were that an electrical power vault had exploded, presumably hit by lightning. The News building has a battery backup system as well as a large diesel generator with a three-day capacity. While much of the area was dark, reporters were not too alarmed as they rushed to cover what might be a "routine" storm-caused power outage.

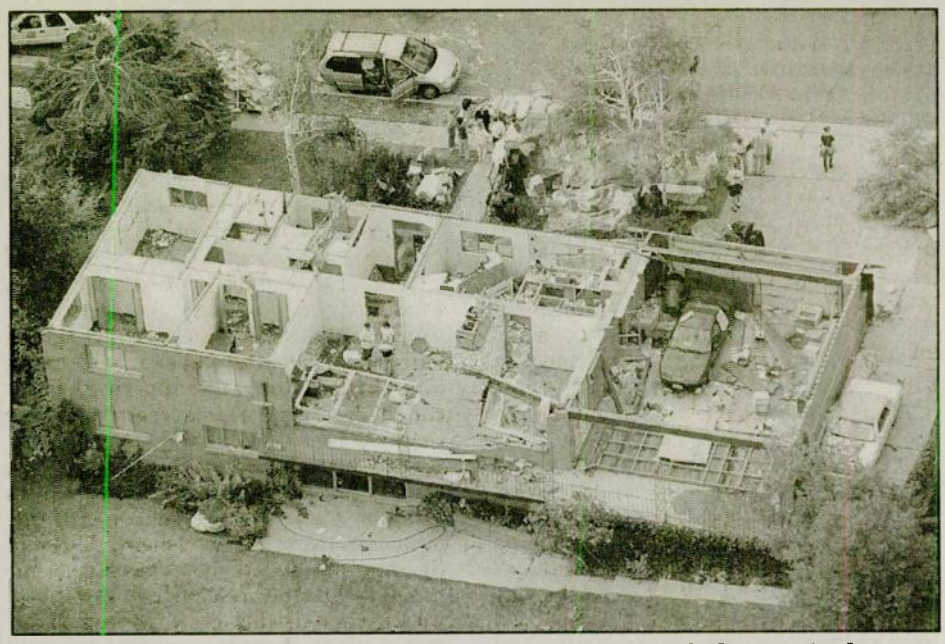
Moments later, the arriving Salt Lake City Fire Department captain radioed for additional assistance, asked for a mass casualty response and requested a three-alarm response. Some voiced the thought that this must have been a pretty significant power vault explosion. The fire command post was about two blocks away and several of us walked over to get an idea of what had happened. As we walked along Main Street and then South Temple, debris littered the street. As the Wyndham Hotel came into view, words cannot describe the eerie feeing as we saw scores of broken windows.

On the street in front of the hotel, the scene was surreal. Emergency crews scrambled among the wreckage of a huge outdoor tent. Sirens wailed as additional fire and law enforcement personnel arrived. Two hospital choppers hovered and then landed. Radios crackled with emergency pleas. People who had vacated nearby buildings stood in a shocked state as they watched the activity. Emergency radio frequencies could be described as wall-to-wall traffic.

For the first few hours cell phones were almost useless. Pressing the "send" button would give you a fast busy indicating all circuits were busy and often you would not even get a response, the phone appeared dead. Downtown phone circuits were also overloaded and perhaps one in five call attempts went through. Dark thunderclouds continued across the sky, alternating between light and dark, creating a spooky atmosphere. Once emergency personnel were on scene and the sirens quit, a silence enveloped the downtown area. Power was out to many businesses and people stood on corners wondering what had happened.

Many would shake their head in disbelief when told it was an F2 (130 mph) tornado. "Not possible," was a frequent reply and only when home video of the twister was shown on news programs would some believe that a tornado had struck the city.

Within minutes LDS Hospital activated the Salt Lake County Amateur Radio Emergency Service group pagers and Emergency Coordinator Don Scarlet, N7DIZ, opened an emergency net on the group's repeater. Minutes later the Ameri-



A house in the Avenues area lost its entire roof. Over 100 homes were damaged, about 40 to the extent of being uninhabitable. The Avenues area is in the northeast section of the city and just east of downtown. Injuries were minor which was a miracle. — *Photos courtesy of the* Deseret News.

can Red Cross also paged Scarlet. LDS Hospital wasn't sure what communications needs would be and told Scarlet simply they were on alert for a major casualty event. The ARC filled Scarlet in on more details and requested their emergency communications center be activated.

As trained during ARES meetings, local operators checked into the net and were assigned as the requests for operators came in. Several months earlier the Utah Amateur Radio Club along with ARES (most of us share dual or triple membership in various Amateur Radio organizations) had built a club station in the Salt Lake ARC Chapter's new office. The station is equipped with HF, VHF, packet, and assorted antennae for use as a club station and then under ARES direction during emergency activation.

Using the UARC club call W7SP, the ARC was soon on the air and responding with their "emergency response vehicles" (ERVs) with an Amateur Radio operator assigned with each Red Cross team. The VHF Society's 146.94 repeater would be the Red Cross main link for several days.

Members of the Davis County Amateur Radio Club, many of whom work in Salt Lake, quickly activated their system and bolstered the volunteer ranks. Several VHF and UHF repeaters were pressed into exclusive emergency operation.

Brent Thomas, AC7H, the State of Utah's Comprehensive Emergency Management communications officer, activated the state's EOC station and K7CEM was on the air. In minutes the Salt Lake County EOC was activated as operators manned that station. Other ARES members responded to area hospitals to augment communications and telephone systems. Over previous years, ARES groups in most counties have installed antennas and in many cases complete stations in readiness for disaster response. Knowing the potential for disaster and the need for reliable communications, the Intermountain Health Care (IHC) hospitals have purchased Amateur Radio equipment and worked with ARES members to have antennas and equipment in place.

During the next hours and days, Amateur Radio assisted linking hospitals and EOCs with command posts and volunteers with the Red Cross. As shifts ended, additional operators were ready to step in and continue the effort. While many were exhausted, there was a sense of purpose heard in their voices and common courtesy and established on-the-air protocols were observed. Several operators were sent to a special telephone center

setup near the command post and they helped field calls from people concerned about loved ones perhaps injured in the downtown area.

County ARES chief Scarlet was pleased that the system worked so well. He said the agencies knew how to activate the ARES pager system and area operators were prepared to respond and knew what to do when they arrived on scene. He was grateful that many agencies had cooperated in past years in establishing antennas and stations.

When the UARC club station was proposed, who could realize that shortly after its completion it would play a key role in the "storm of the century?"

Thomas was pleased in the Amateur Radio response, saying they were there with radio channel capacity and ready when needed. He responded to the downtown command post to assist with communication needs and discovered the overloaded public telephone and cell systems. He said that about one in ten cell calls would go through and attempts to use the phones was futile. He attributed much of the overload to people downtown wanting to call friends and relatives and tell them about what had happened, not realizing that their calls would prevent emergency calls from getting through.

Some of the concerns Thomas had about the radio response included the time needed to get operators on location. Many streets were blocked by downed utility lines, trees, and debris. What should be a five-minute trip took over an hour. Thomas suggested volunteer responders take time in advance to contemplate various routes to command centers and hospitals.

Thomas has since received calls from other state agencies asking for supplemental communication equipment for future events. Many of the state radio channels received heavy use, especially right after the initial reports were received.

Another observation from Thomas and the author's view suggest that initial reports, especially from electronic media, need to be carefully evaluated. The tornado touched down almost next to a major radio/TV broadcast studio, KSL. It was natural for the station to immediately show reports of the damaged Delta Center, Wyndham Hotel, and outdoor convention site. Certainly that was where the immediate action was with the lights, sirens, choppers, and confusion.

What wasn't apparent to Thomas and others, was the additional damage as the tornado made its way through the Avenues residential area. While reports were quick to come in and fill the information void, the initial thoughts were that this was a very confined area. Following the event, SLC's mayor asked businesses voluntarily to close and send workers home. A section of downtown SLC was cordoned off as well as areas of the Avenues. ARES members with ID cards were passed through roadblocks, pointing out the need for participation and registration in advance with such groups. Thomas said that having the "Amateur Radio" callsign license plate on a private vehicle was also an asset to volunteers.

Other suggestions for future planning include having Amateur Radio antennas installed on agency vehicles such as the Red Cross ERVs. Not having antennas degraded signals into the repeaters and caused unnecessary repeat of messages. Operators responding to staff ERV or other mobile needs should also have magnetic antennas and extra batteries as not all vehicles have lighter plugs or easy ways to connect radios to the vehicle power system.

Another area of concern would be that communication areas are close to decision-making areas. There were some delays as responses to messages required operators to walk considerable distance to the command personnel either in hospital or with agencies such as the Red Cross. The concept of having a "shadow" follow key decision makers creates the communication ability so quick responses can be made. The ARES has established a central repeater as the "meeting place" in time of emergency and that concept worked well as operators knew where to tune. Operators were commended by agencies and listeners for their on-the-air procedure and how professional they sounded. Instructions were acknowledged and information relayed accurately and in a timely fashion.

This event struck so swiftly the National Weather Service was unable to trigger an alert. Because emergencies often strike when least warned or ready, it is critical that volunteers are ready to respond with their equipment ready. Grab-and-go gear, vehicles, radios, batteries, distinctive jackets, ID cards, etc., must be ready when needed. As with this event, there was no time to go home and obtain gear and if there was time, the debris and traffic would delay any prompt response.

Salt Lake City may never experience another tornado, but this one will not be forgotten. After all the damage was assessed, the most important statistic was that only one life was lost. Property can be rebuilt. We are grateful and humbled that this disaster did not effect a greater human toll.

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Kaylee and Alexandra's Kid's Day

Mark King, KBØPPA

We have just finished up another enjoyable Kid's Day and would like to thank the Boring Amateur Radio Club for their efforts. This is not going to be a tale of how my young one grabbed the mike and began making contacts left and right after calling CQ. Or a story of defending "my" frequency from interlopers during the contest. Instead this is the story of a couple of ordinary girls who got a chance to play with Dad's equipment and talk to some very nice people from across the nation.

This year both of my daughters Kaylee, 9, and Alexandra, 7, participated. Last year Kaylee participated and she was looking forward to taking part again this year. One of the great things about Kid's Day at my house is that it has removed some of the mystery of what old Dad is listening to in the headphones in the basement. It has also brought some understanding of all that strange lingo of "CQ", "QSL", "QRZ" and "73" Dad uses.We did not make many contacts.Typical of a contest, Murphy stepped in and killed the beam rotor about five minutes into the contest with the antenna pointing straight North.When trying to work the U.S. from South Dakota this is not the optimum direction.So, undaunted, we switched over to the trusty dipole and went on.

Lesson to the kids, things don't always go as planned so make the best of what you have.

The girls were not up to handling a run and calling CQ so the hunt and pounce scheme was the way to go. We only run 100 Watts here, and with the dipole, we were definitely going to be 'little pistols'. At go hour we were perched on the microphone ready to pounce. Spinning the dial resulted in a whole lot of noise without the ability to pull out a good strong station from the mix. Without the beam, it was difficult to tune in a strong one, but after some tuning K8DHD popped out of the noise and the contest was started. Alexandra had won the privilege of first contact and she spoke in a nice clear voice to Matt after a few seconds of mike fright. After a nice contact, it was Kaylee's turn and she worked Cory at K8DHD making a nice "multi-to-multi" QSO. The girls took turns making contacts with Dad mostly trying to find loud stations in the clear. The girls learned to pick up on the flow of the contact. Listening for CQ or QRZ to plop their callsign out. They did a very good job of catching the calls, sometimes helping out old Dad who was usually talking to the one not on the air. There were a lot of stations on this year and it was a little frustrating finding stations in the clear we could work.

Another lesson was learned, however, as stations would come booming out of the clear, perseverance and patience does pay off. I did the tuning, but the girls sent out our callsign, learning to listen for a "Queue, Are, Zed" or "Standing By". They also learned to listen for parts of our callsign to come back and try and figure out if the other end was talking to us. All in all a very good lesson on listening.

Kaylee talks very fast and has a tendency to slur some of her words. She has worked with a speech therapist at school, but during the summer she picks up some of her old habits. After the first couple of contacts, she began to slow down and enunciate much more clearly. It made Dad happy to hear her speech improving with every conversation. Alexandra, after a few seconds of initial shyness, spoke into the mike in a very nice normal manner.

The girls had announced the contest at their Girl Scout meeting. After a bit, a couple of Girl Scouts showed up. Both girls were named Amanda. One of the Amandas, Amanda M., was instantly fascinated with the concept of Amateur Radio. She was thrilled that with this small box someone could talk to anywhere in the U.S. I generated a log sheet for her and found a nice strong station, W1HIC, and she made her first Amateur Radio contact. She was really hooked. She didn't want to play with the other kids and began an endless stream of questions and wanted to make more contacts. She ended up making four contacts with some very nice conversations. I got out some of my QSL cards, and they had a good time looking through them. The second Amanda never did overcome her mike fright and make a contact. Oh well, maybe next year.

We had a cheat sheet with the call sign written down in phonetics and the exchange filled out ahead of time. As the girls would make the contact we would point to the section they needed to say. It worked pretty well, except the girls kept forgetting to say "OVER" so there was a lot of dead airtime.

We finally wrote it on the sheets in big letters and underlined it — that helped. At first, I would hold the mike while they talked, but as they became more comfortable, they held the mike themselves. Kaylee and Alexandra are working on the code and studying for their license. I have a feeling Amanda will be joining them.

I can't close this up with out commenting on the fine operators we talked to. Jason, N5NU, a 16-year-old Extra from TX was having a ball and was very good in conversing with the other kids. K8DHD had a nice multi-kid operation spreading the news on Amateur Radio. Dave, K6LL and Kent, W5RRR, are both to be congratulated for providing excellent contacts. The kids' eyes when their ages were reported was worth the day. There were many contacts with several other great stations. Baseball, school, Barbie dolls, and the weather were all topics of conversation with several contacts taking a few minutes.

All in all I would rate this a very successful Kid's Day at our house. We didn't set any records, but I think some of the best aspects of the hobby were demonstrated — resourcefulness, respect for others, and the feeling of being a part of the Amateur Radio community.

Special Events

ANDY DEVINE DAYS

The Hualapai ARC, WB6RER, Special Event station from Kingman, AZ and its Andy Devine Days celebrations from 1500U 09 October-1900U 10 October. Suggested freqs: 3.900, 7.250, 14.250, 21.350 MHz. Certificates — QSL (which must include the contact number), and a 9 X 12 SASE (2 units of postage or $1.00) to: Hualapai Amateur Radio Club P. O. Box 4364 Kingman, AZ 86402.

FOX RIVER 75TH

The Fox River Radio League will be on the air operating W9CEQ to commemorate their 75th Anniversary from 1700Z 15 Oct. thru 2300Z 17 Oct. Suggested frequencies are SSB 7.260, 14.260. 21.300 CW 7.130, 14.100, 28.150. For a certificate, send a QSL and 9x12 envelope to Fox River Radio League, Box 673, Batavia, IL 60510-0673.

GIRL SCOUT CONVENTION

Special Event station WØS will be on the air from the 47th National Girl Scout Convention in Kasas City, MO. Operation will be on HF, Packet and 2-meter bands according to the following schedule:

10/14 1200 - 1830, 2030 - 2200
10/15 0800 - 0900, 1200 - 1400, 1700 - 2100
10/16 0800 - 0900, 1200 - 1400
10/17 0800 - 0900, 1200 - 1400
All times local.

TRANSYLVANIA HALLOWEEN

Transylvania County ARC will operate K4HXZ from Transylvania County, NC on 31 Oct. 1800 - 2359U. Freqs: 7.237, 14.295, 21.365 and 28.335 MHZ.

For a ertificate — send a business size or 9 X 12 SASE to: Transylvania County ARC, P.O. Box 643, Brevard, NC 28712.

FREMONT, OHIO SESQUINCENTENNIAL

Sandusky Valley ARC will be operating special event station W8NCK to celebrate the sesquincentennial of the City of Fremont, Ohio on 16 October. Suggested freqs: 7.225, 14.225, 15.325 and 28.235 MHz.

For a QSL, send your QSL and an SASE to SVARC, P.O. Box 1072, Fremont, OH 43420

Silent Keys

JAMES P. DUX, K3JD

Chemist and author James P. Dux, K3JD, has died in Lancaster, PA. A Doctor of Chemistry, he worked as a chemist and administrator of several chemical companies. James was adjunct professor at Lebanon Valley College and Millersville University. At one time he headed the Analytical Group of American Fiscose Corporation in Marcus Hook.

James co-authored a book for Amateur Radio operators, "Talk to the World," with Morton Keyser. Not only did he teach chemistry, he also taught Amateur Radio classes. James also volunteered to read to the blind, in both a one-on-one situation and over the radio.

Mr. Dux was a veteran of WWII. As an Amateur Radio operator, James earned his Extra class license in 1968. — *Mrs. Catherine A. Dux*

LEONA WALLACE, WA6OHB

Retured schoolteacher, Leona Wallace, WA6OHB, died 11 August. Mrs. Wallace had been a resident of the Las Vegas area for the past six years.

She was born in Winnipeg, Manitoba, Canada 10 August 1915. She spent her entire professional life as a schoolteacher in Livermore, CA, teaching the first and second grade. She taught Morse code to her first grade students, and after completing their Morse code lessons, Mrs. Wallace would take her students on a field trip to a local radio store for further study.

— *Mrs. Deecie Shelley*

Paddlette KP-3

Ace Jansen, N3AHA

Attention CW Operators! Looking for a small, lightweight CW paddle AND keyer? Then look no further! Now, the Paddlette Company makes super small CW paddles and a paddle/keyer combination. This paddle/keyer is ideal for mobile operators, QRP operators, backpackers and VHF rovers.

I had the privilege to operate and review the Paddlette paddle for the September 1998 issue of ***Worldradio***. The Paddlette paddle is 1" x 1-3/4" tipping the scales at a mere 1.5 ounces. The Backpacker, which I did not operate, is even smaller, only 3/4" x 1-1/4" and weighing an eye-popping 0.9 ounces. In my review, I called the Paddlette and Backpacker CW paddles "small paddles with big performance."

Well, now it's time to take a look at that Backpacker; however, this time, with a memory keyer included. Its size boggles the mind. A CW paddle and keyer with two 50-character memories is 1-1/2" x 2" and its weight including battery is 1.7 ounces. Wow! Paddlette Company calls this little gem the Paddlette KP-3; a miniature keyer-paddle. You call it what you want, I call it unbelievable! Here's a paddle and memory keyer about 1/4 the size of a Bencher paddle.

The KP-3 combines a Paddlette subminiature iambic paddle key with an Embedded Research TiCK-3 CMOS keyer integrated chip (IC). It's totally self-contained and includes the key, CMOS keyer circuitry, push-button momentary "on" switch, piezo sounder, lithium coin cell (200 milliampere-hour, 3-volt) and a 1/8" (3.5mm) output jack.

Keyer parameters

The TiCK chip provides a wide menu of functions, all accessed and executed by the single push-button switch and the two paddles. Selecting a menu parameter is as simple as pushing and holding down the push-button switch and listening for the Morse code characters emitted by the piezo. The piezo will cycle through 13 different Morse characters. Upon hearing the desired letter or number, immediately releasing the button will put the keyer in a wait state awaiting the operator's command. Then it's a matter of following the instructions for changing a parameter.

For example, if I want to increase the speed of the keyer, I push and hold the button. The first Morse character I hear from the sounder is "E," which will play the second memory message. I keep holding the push button until I hear the next Morse character, which is "S." "S" is the response I was listening for to adjust the keyer speed. I release the button and push the dah paddle to increase the speed and dit paddle to decrease the speed. It's that simple.

Other keyer adjustments are the following: tune (for placing the keyer in tune mode); input for the two memory messages; paddle select (are you a lefty and want dahs on the left?); audio select (turn sidetone piezo on or off); straight key select (either paddle can be used as a straight key); iambic mode (common iambic or older style iambic); and a beacon mode (play either of the two memory messages in a beacon mode).

I found the Paddlette KP-3 menu easy enough to use and quickly programmed memories 1 and 2. Fifty character memories are long enough for quite a bit of information. For example, my memory 1 contains the following: TU DE N3AHA/M UR 599 599 OPERATOR ACE ACE QTH VA VA 73 DE N3AHA/M. Not bad, eh? I think I had five or so characters to spare. These memories would be ideal for operating contests, especially ARRL Sweepstakes where the contest exchange is quite long. Another option would be using the beacon mode to call CQ until you hear someone returning your call.

I feel compelled to remind you to have the menu instructions with you if you take the KP-3 mobile or for a portable operation. You sure don't want to be out in the middle of nowhere and forget how to program your keyer. Having said that, once you set up the keyer, you may not make many changes; keyer speed and memories being the exception.

Magnetic hold-down

You may wonder how this lightweight keyer holds up against some of us finger-smacking CW operators. It holds quite well due to its magnetic hold-down system. The KP-3 comes with a 1-1/2" X 1-1/2" magnetic plate bonded to the bottom cover. A knee mount has an identical sized magnetic plate bonded to it. I've used the knee mount operating mobile during a contest and it worked great! The Paddlette Company provides two additional magnetic plates to place on a shack desk or portable location (in a car possibly). Additional plates are available from Paddlette Company for $1.00 for two plates plus $1.00 shipping. You'd be hard-pressed to find additional plates at a more reasonable price.

Coin cell

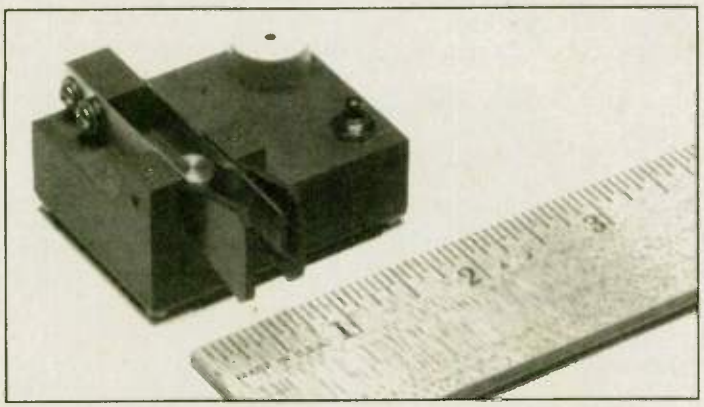
No need to worry about how long the battery (really a coin cell) lasts. Paddlette Company is running some life tests and discovering the cell will last a good long time, at least a year. Life tests simulating two hours of operation per day, 365 days per year — 50% sending, 50% receiving — prove the cell barely degrades after 1.6 years. Your mileage may vary!

However, the Paddlette Company gives the following warning about cell drain: "Pushing and releasing the push button causes an immediate current drain of about 550 microamps. Touching either paddle reduces this drain to 1 microamp (sleep mode). So if the pushbutton is actuated, be sure to execute the called-for procedure (every procedure involves touching a paddle). If you fail to do this, or at least touch a paddle, the 550 microamp drain will continue until the

battery is exhausted — around two weeks! Therefore, always send a dit or a dah before leaving the shack." In effect, touching a paddle serves the same function as an on/off switch.

This warning is important to heed, because the cells aren't like a watch battery that you pop in and close the cover. For one, the cells are not as readily available and two, installing the cells involves a little soldering.

Paddlette Company recommends replacement cells with welded solder tabs. Although cells are available from mail order electronics parts stores, Paddlette Company sells the cells with a transfer adhesive which aids installation. They're available for $2.00 each plus $1.00 shipping from Paddlette. One of the mail order houses, Mouser Electronics Shop (800/346-6873), sells the cells (Part #614-CR2032FV) for $1.43 plus $3.50 shipping. You're better off getting extra cells from Paddlette; they're cheaper and include the transfer adhesive.



The Paddlette KP-3, a miniature keyer-paddle

Operation

Now for the moment you've been waiting for; how's it work on the air? First off, I had to add a cable. Since this is an external keyer, I needed a shielded, single conductor wire with a mono 1/8" plug on the keyer side and a stereo 1/4" plug on the radio side. Once the cable was constructed, it was time to bang out some QSOs with the KP-3.

At first, the KP-3 didn't perform properly; it was not acting like a keyer. I called Paddlette Company and we quickly determined there was RF interference getting into the keyer. Since I was operating the KP-3 from my van and my antenna was not very far away, the paddle reeds were picking up RF and ultimately affecting the keyer.

The Paddlette Company quickly added two .01 microfarad capacitors to the paddle reeds to mitigate the interference and voila, problem fixed! Now that I've accomplished the Beta testing, you can rest assured that the KP-3 production units will perform flawlessly for you.

I demo'd the KP-3 mobile using a Yaesu FT-900 transceiver. IT WORKED GREAT! I quickly made a couple DX contacts using the memories in the keyer. It felt really strange to be driving — with both hands on the wheel — and sending CW at the same time. I felt liberated!

Here's a tip for you to consider. I disconnected the piezo sounder's side tone, opting instead to use my radio's side-tone. If I had to adjust the keyer, the piezo is still audible when using the push-button and cycling through the menu options. I noticed the piezo is difficult to hear at 65 mph with the van windows open. The volume of the piezo is not adjustable like the radio's side tone. You probably won't be making many menu parameter changes while driving, so hearing the piezo under those conditions is not a big deal.

Wrap-up

In about two years, Bob Hammond, KI7VY, of the Paddlette Company has sold almost 500 Paddlette paddles and roughly 170 Backpacker paddles. I am quite confident that it won't be long before sales of these KP-3s surpass previous paddle-only sales. A KP-1 (without memories) is priced at $72.00, but for an additional $10.00, you can get the KP-3 with two 50-character memories. The knee mount is an extra $7.75 and shipping and handling is an additional $3.75. The total for the KP-3 with knee mount and shipping and handling is $93.50.

If you are in the market for a CW paddle with memory keyer, I strongly recommend you contact Paddlette Company and add a KP-3 to your radio treasures. Not only will you enjoy your little toy, it will be a big hit with the crowd at your local club.

For more information, write the Paddlette Co. at bham379627@aol.com or P.O. Box 6036, Edmonds, WA 98026. You can also call Bob at 425/743-1429.

_ _ ... ... _ _ de Ace, N3AHA!

Letters to the Editor

Sample issue

Thanks for the free sample copy. I like your magazine.

I'm not a Ham; I just enjoy listening to SSB and short wave, — and reading about radio-related information.

Please start my subscription now. Also, could you tell me how I can purchase some back issues? Any information will be very much appreciated.

James Lueck
LAVALE, MD

(Ed. Back issues of **Worldradio** *are available for $2.00 per issue. We have most back issues, but some are not available. You can send a note to* **Worldradio**, *or e-mail us at n6wr@ns.net to see if the issue you want is available).*

Women Hams

I wonder how many women have joined Ham radio on their own, without introduction by a boyfriend or family? I've never met nor talked with such a woman in the nearly 30 years I've been licensed.

The September issue of ***Worldradio*** had an article from a young woman disappointed that females aren't represented very well in the hobby. The same issue quoted another woman as being quite turned off by the old-boy hierarchy of some Amateur Radio clubs in her area. (pgs.68 and 39, respectively)

Women love to communicate. And females, more than ever, are pursuing careers in technology. If we could only get the right mindset, it would not be difficult to recruit young women and girls to our ranks for the benefit of all of us.

The ARRL, as the representative association for Amateur Radio, should elect female leadership for a change, and overhaul its approach to membership so that it welcomes girls and women as effectively as it has recruited males.

I'd be glad to contribute whatever effort such a campaign would need, and I'm sure plenty of other men feel the same way. Meantime, I really don't know where to send details of ideas designed to encourage female participation.

Paul Courson, WA3VJB
WEST FRIENDSHIP, MD

VE session irregularities

Your September 1999 Newsfront article attributed to FCC, Newsline lacked both facts and logic. Yonkers borders New York City. It is not 25 miles away. Even from the far side of Brooklyn to the Yonkers racetrack wouldn't add up to 25 miles, and why drive? From Brooklyn to Yonkers, the subway is the best way to go.

I live in Virginia. I tested in Virginia, North Carolina, Georgia and Mississippi. So, what's strange about someone traveling a long distance to test? I think that it arouses less suspicion when elements are signed off by a variety of VE's.

William Bullock, KF4IKE
DINWIDDIE, VA

Professional Amateurs

I would like to comment on the article by Jerry Wellman, W7SAR, titled "PROFESSIONAL vs. AMATEUR", in the August of ***Worldradio***.

I read both the *911* Magazine and ***Worldradio*** articles, and wish to offer some input about what a "professional dispatcher" is. I have been a professional dispatcher in California for 20 years, and I manage a dispatch unit in Northern California. I have also been an "Amateur Radio operator" for eight years.

Mr. Wellman's article stated he was on the defensive with the word Professional. His question was, are we (dispatchers) full time paid agency employees, or someone who is a trained communicator?

The answer to Mr. Wellman's question is both, and then some. After a dispatcher is hired in California, they will complete 80 hours of classroom training, and then another 800 to a 1,000 hours of on the job training.

Dispatchers are trained in communications, radio procedures, penal codes, 9-1-1 procedures, computer-aided dispatch, hostage negotiations, dealing with suicidal persons, fire dispatch

procedures and safety, police officer safety, emergency medical dispatch, and the list goes on and on. They are also required to complete at least 40 hours per year of on going in service training.

The training manual alone for a California dispatcher, certified by the Commission on Peace Officers Standards and Training, is as thick as a Sears catalog. And when they are all done with training, they do get "magic initials" after their names. The initials are P.S.D, E.M.D — Public Safety Dispatcher, and Emergency Medical Dispatcher. We can talk a suicidal person into not to blowing their head off, or walk a hysterical parent through CPR for their drowned baby, and we will do it in a professional, calm and caring manner.

When it's time to setup the incident command post at a critical incident, we take the "professional" dispatchers and put them in the mobile command unit, and deploy it.

Don't get me wrong, Amateur Radio operators also play a role in the incident command post. I have, and will continue to use Amateur Radio Operators in the mobile command unit. Police, fire and dispatch managers are trained to use Amateur Radio operators. In emergency situations Amateur Radio operators are used for everything from an extra pair of eyes on patrol, monitoring a radio channel, to traffic control. Hams are a very important part of emergency communications. That's why my communications center, my mobile command unit, and my assigned city vehicle have Amateur Radios installed in them.

When we all work together, we are all "PROFESSIONALS" with one goal and one mission statement — To protect and serve the public.

Matthew B. Diridoni, KC6RUO
Rocklin, CA

(Ed. I encourage all of you who are volunteer communicators to make sure your professional counterparts have seen the column written by Jerry. It has several valid points. Matt's letter is a fine example of the attitude all "professional" communications managers should have.)

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.*

Only a pillow

His daughter-in-law had no idea what her handmade Christmas gift would mean to Bob Burns, N6ZH, of Sherman Oaks, California. (He's the son of the famous comedian and bazooka player.)

It was a small pillow, made of black and white satin, an exact replica of his favorite hand-held transceiver, complete with his call letters.

"It was very clever, so I showed it to all my friends, including Bob Jensen, W6VGQ, who took a picture of it. He then sent it to the publication ***Worldradio***, where it was printed.

"Well, imagine my surprise a couple months later when a letter came, forwarded from the magazine. It said, 'Dear Bob, could you possibly be my long-lost cousin for whom I've searched many years?

"I, too, am a Ham but not on the air as I live on an island in the San Juans of Washington and we have no power nor telephones. I hope to hear from you if you receive this letter.'

"Of course I immediately wrote back and so did he. In fact, he invited me and my wife, Naomi, to come visit. It sounded so interesting, we did.

"Getting to the island wasn't easy, but we arrived by a small boat to find a tiny community of people who shunned most city ways and conveniences. It was beautiful.

"After catching up on each other's lives, I brought out a small transmitter I had carried, plus a battery arrangement. We strung 'invisible wire' between trees for an antenna, so not to offend the conservationists.

"When I was back home, we started keeping regular schedules on the air and it was very good to have found my cousin, my friends.

"And all because of the pillow!"

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.

Mitnick sent to prison

A follow-up to a story we reported last week concerning computer hacker Kevin David Mitnick, N6NHG. Mitnick, who pleaded guilty earlier this year to computer and wire fraud charges, has been sentenced to federal prison and ordered to pay $4,125 in restitution.

On 09 August, U.S. District Judge Mariana Pfaelzer sentenced Mitnick to forty-six months in jail and imposed the fine. Pfaelzer also banned the thirty-five year old amateur from using computers or the Internet for three years after his release.

In issuing her ruling, Judge Pfaelzer called the $4,125 in restitution a token amount given the damage she said Mitnick had inflicted on companies whose computers he infiltrated. But the judge said she was imposing the fine because she wanted to set an amount that she could require him to pay as a condition of his release.

Mitnick has been in jail since February of 1995 for breaking probation on an earlier conviction and fleeing authorities. Given credit for time already served, he will likely be released from custody by early next year. No word on whether or not the FCC will seek to revoke Mitnick's license as it has for several other amateurs convicted of communications related crimes. — *Newsline*

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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.*

Ed Steiner, KF6KOW

One of the problems I discovered upon building my station was where to put all the stuff! Being a new Ham, I had grand ideas that I wanted a computer, HF, Packet, VHF, CB, scanner and any other type of communication toy I could think of. So, I came to the crossroads of how to I put it together. First I tried a table, then a book cabinet, and finally a stereo hutch — but nothing worked. So then I looked at a custom-built record and CD cabinet I had that really wasn't being used.

I couldn't believe it! My Astron RS-35M and VS-20 fit perfectly into the CD compartments. The HP 820C printer was easily placed, along with three other speakers. I built a shelf to hold the IBM-compatible computer on one side, and mounted the power strip on the other. Specially built shelving was used to support the Kenwood TS-570D and its speaker, Kam Plus, MFJ Versa Tuner II, Radio Shack TRC-485 CB, RS Pro 2036 scanner and HTX-242 2-meter rig. The two MFJ TNC switches fit perfectly, along with the MFJ-862 meters. Using shelves on the wall, I set my flatbed scanner, Radio Shack HTX-404, tape recorder and recharging stations. The computer is secured to the shelf with velcro.

I really enjoy the hobby and pride myself on neatness and a well-organized station. From a sitting position behind the computer everything is within easy reach on the right side, and nothing on the left. By drilling holes into the rear of the cabinet and using an MFJ-1118 power strip, I was able to place most of the wires out of view, thus giving a clean, custom-built appearance.

I work Packet, HF SSB, CW (on a 70-ft. shortened dipole up 36 feet) VHF and any other mode except microwave.

Amateur "Hi"

*Ever had a funny or strange experience with Amateur Radio, on or off the air? If so, type it up (or print neatly) and send it to us for consideration in our monthly AMATEUR "HI" contest. You could win a free year's subscription to **Worldradio!***

Earthshaking ground-plane antenna

Richard Stuart, WF7A

A month ago, I was asked by the editor of an ultralight aircraft magazine to write an article on how to build an inexpensive, easy-to-build antenna that would knock the socks off of the typical "rubber duck" antenna used with airband handheld radios. I said, "Sure — how about a groundplane antenna?" He liked my description of it and told me to go ahead and build one.

That afternoon, I threw together the 1/4-wave groundplane antenna, stuck its mast into the ground, layed out some coax, and the exact moment I pressed the PTT switch on my transceiver we experienced an earthquake — 5.2 on the Richter scale! After the rumbling subsided, I rushed to my computer to send an e-mail to the magazine editor: "Are you sure you want your readers to build this thing? It really packs a wallop!"

W-100-N

The following deserving DXers successfully completed the requirements for ***Worldradio***'s Worked 100 Nations Award:

553. Carlin Arao, AB6WQ
27 July 1999

554. Louis "LuLu" Thatcher N6VWF (All 20M SSB) 27 July 1999

555. Ed Broderick WL7ZA (All CW) 27 July 1999

One additional application was received, but unfortunately, we had to reject it. Several of the claimed contacts for Nations were DXCC entities. Such places as the Azores or the Balearic Islands are part of their parent nations, Portugal and Spain, and do not count as separate nations. The rules are printed every other month in ***Worldradio***.

CATZ

We're on a roll! These DXers also completed the requirements for ***Worldradio***'s newest award. Contact All Time Zones (CATZ):

10. Louise "LuLu" Thatcher N6VWF 27 July 1999

11. Jack A. Costa K6TTT 27 July 1999

12. Allen E. Bestwick W1PX 27 July 1999

Lulu's certificate has an endorsement for working "All IOTA Islands," the second one to be done as such. The first was to the late Dick McKercher, WØMLY.

Another application had to be rejected as the start date of 01 July 1996 for this award was not observed. Too bad, as everything else was in order.

Mauritius (3B8)

Ohio/Penn DX Bulletin reports that four Dutch DXers, PA3EPD, PBØAIT, PE1ALV, and PAØVHA, will be in Mauritius (AF-049), 23 September-10 October. An all-band operation is planned with CW, SSB and RTTY. There also may be some EME activity on 2 Meters. No specific call signs were mentioned, but no doubt their own calls will be used appended with the 3B8.

Annobon Island (3CØ)

Don't forget the Annobon Island (AF-039) DXpedtion scheduled to begin 14 September, discussed in the August issue. The call will be 3CØR and the operation is scheduled to last for about 10 days.

St Peter & St Paul Rocks (PYØS)

Karl Leite, PS7KM, reports that since the cancellation of the DXpedition to St Peter & St Paul Rocks (SA-014) last January, the Natal DX Group (of which Karl is a member) has received numerous requests for another try. Karl is happy to announce they will make another go at it.

It's estimated that the DXpedition will begin at the end of September or the beginning of October 1999 for ten days of continuous operation. They plan activity on all bands, 6-80 Meters, (sorry, no 160 Meters as there is insufficient space to erect an antenna). On CW the group will be signing with ZWØSP and on SSB they will use ZXØSK.

Johnston Island (KH3)

Look for some activity from Johnston Island (OC-023) by Bill Myerson, NH6D/KH3, who will be operating during various trips to the island during the next year. Bill prefers CW. QSL chores for Bill will be handled by Dick Wolf, N6FF.

Midway Island (KH4)

And from Midway Island (OC-030) Yarl Lundstrom, SM6FJY, and his wife, Monica, V63YL, will be on assignment this fall 04 September-04 December. They will be active as much as job assignment will allow signing with KH4/SM6FJY.

Tunisia (3V)

According to *Ohio/Penn DX Bulletin* a second official station will soon appear on the bands and should be on the air after September signing with 3V8ST. The suffix is to signify Scout Tunisienne.

Maldive Islands (8Q)

The *Daily DX* reports that Michael, DH3MIT, and HB9KOC, plan to operate from the Maldive Islands (AS-013) 26 October-02 November as 8Q7IT. They plan participation in the *CQ* Worldwide DX Contest. Look for them on 10, 15 and 20 Meters. Incidentally, if you have e-mail capabilities you might want to subscribe to this publication. Contact Bernie McClenny at bernie@dailydx.com for details.

Uruguay (CX)

If you're looking for a YL contact in Uruguay you might find Mariana Thevenet, CX1JJ, who, *425 DX News* reports, is very active on 17 Meters, CW. She is also active on weekends on 10, 15, 17 and 40 Meters.

Belau (T8)

On right now from Belau (OC-009) are Japanese operators: Jim Ogawa, JA3AJ; and Kazu Ebihara, JA3ART, signing with T88MM and T88JJ, respectively. They should be there through 19 September. They are on all bands, including 6 Meters.

Marshall Islands (V7)

Bruce Smith, AC4G, reports he will be operating as AC4G/V7, or possibly V73CW, from Kwajalein Atoll (OC-028)

DX Prediction — October 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 = 142. 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.

WEST COAST

UTC	AFRI	ASIA	OCEA	EURO	SO AM
10	*(14)*	*12	*22	*(12)*	*20
12	*(14)*	*12	*20	*(11)*	19
14	28	*11	*19	*23*	*34
16	32	*15	*24	23	*41
18	*34	14	*(20)*	19	*43
20	*33	*29	30	14	*43
22	*28	*29	*37	*(13)*	*42
24	24	*28	*41	*(12)*	*38
2	*19	*24	*41	12	*31
4	*17	*16	*36	11	*26
6	*(15)*	14	*30	*13	*23
8	*(15)*	*13	*25	*(12)*	*19

CENTRAL U.S.A.

UTC	AFRI	ASIA	OCEA	EURO	SO AM
8	*(14)*	*12	*21	12	*19
10	*(14)*	12	*19	*(11)*	*19
12	28	11	*18	*23	*33
14	33	*12	*27	*25	*38
16	*35	*(12)*	24	*24	*41
18	*35	*(11)*	(20)	19	*42
20	*33	23	31	14	*43
22	*28	*27	*37	13	*42
24	*19	24	*40	*12	*37
2	*17	16	*32	*12	*31
4	*16	14	*27	*11	*26
6	*(15)*	13	24	*12	*23

EAST COAST

UTC	AFRI	ASIA	OCEA	EURO	SO AM
7	18	*(12)*	21	*12	*21
9	17	12	*19	11	*19
11	*36	11	*18	*23	*30
13	*42	*13	*30	*27	*36
15	*44	*(12)*	25	*26	*39
17	*44	*(12)*	22	*24	*42
19	*37	*(11)*	27	*20	*43
21	*31	23	35	14	*42
23	*24	23	39	*13	*39
1	*22	15	*31	*12	*32
3	*20	14	26	*12	*27
5	*19	13	23	*11	*23

for the next two years. He informed *Ohio/Penn DX Bulletin* that he will give special attention to the WARC bands, plus 40 and 80 Meters.

Turks & Caicos Islands (VP5)

The Frankfurt Radio Club will be sending a contest team to Providenciales Island (NA-002) for the *CQ* Worldwide DX Contest this October. This will include team members: WA2VYA; K2WB; and John Imhof, N2VW, signing with VP5T operating as a Multi/Multi entry.

They will be on the island 26 October-02 November. They will be operating with appended calls outside of the contest periods, where they will concentrate on the WARC bands and CW.

Lakshadweep Islands (VU7)

The Daily DX notes the finishing touches are being made on a possible DXpedion to Lakshadweep Islands (AS-011), formerly known as the Laccadives. As of this writing not much more is known except the operation is to take place in September.

Chatham Island (ZL7)

The Daily DX reports that Lothar, DJ4ZB, is planning to operate from Chatham Island (OC-038) next year in February and March. He'll sign with ZL7ZB or ZM7ZB and will be active on all bands, 6-80 Meters, with emphasis on 10 Meters.

Marion Island (ZS8)

Chris Burger, ZS6EZ, reports through *The Daily DX* that after lengthy negotiations, the Prince Edward Island Management Committee has refused permission for Deryck Yelverton, ZS8D, to erect his tribander on Marion Island.

Deryck has been active with a resistively-loaded broadband dipole, but his signal leaves much to be desired. The tribander and amplifier were donated by the NCDXF, and will provide a substantial improvement in signal strength. The tribander is assembled, and ready to be erected if permission is granted.

Chris is preparing a submission to get the decision reconsidered, and is looking for two types of support: 1) anyone who can supply substantial information about the bird-strike hazard associated with rotary beams; and 2) general shows of support. This is the kind of message where you are suffering from some unspecified dread disease, and won't die a happy man unless you can work and confirm Marion Island this year. You have been sitting up for weeks listening for him, but his signal is just never quite loud enough.

Unfortunately, the first committee hearing was held on the basis of some rather parochial reasoning, and Chris would like to expand the horizons somewhat. If they can see that there really is global demand for activity from Deryck, and that real antennas are necessary, they may relent.

Please respond directly to Chris at his e-mail adress: crb@nanoteq.com. He will compile them into a suitable format and include them with the submission.

IOTA

July was an active month for IOTA island chasing, which also included the annual RSGB IOTA Contest. In spite of the poor conditions there was much activity reported. We hope you managed to work some new IOTA islands during the affair. Here is our monthly listing of some of the large amount of IOTA activity.

AN-015 8J1RL	Ongul Island	02-27 Jul
AN-017 FT5YG	Petrels Island	20-28 Jul
AS-005 RAOBK	Dickson Island	18 Jul
AS-015 9M2TO	Pinang Island	03-27 Jul
AS-024 JH1MKU/JR6	Hateruma Island	16-18 Jul
AS-024 JS6LIH	Taketomi Island	04 Jul
AS-026 HL4HLD	Cheju Island	17 Jul
AS-028 UAOQBA	Kotelny Island	03-27 Jul
AS-040 JH6TYD	Goto Island	08-18 Jul
AS-045 HL5FUA	Ullang Island	16-27 Jul
AS-053 HSØ/IK4MRH	Phuket Island	01-27 Jul
AS-079 JA5CKD/6	Miyako Island	01-11 Jul
AS-080 DS1BHE/3	Chugchgn Island	23-25 Jul
AS-083 RA9LI/9	Belyj Island	14 Jul
AS-090 6MØHZ/2	Tokchock Island	18 Jul
AS-093 HLØY/4	Daehuksan Island	25-27 Jul
AS-094 BG7YB	Hainan Island	11-20 Jul
AS-094 BG7YC	Hainan Island	11-17 Jul
AS-103 BV9AAC	Penghu Island	05-07 Jul
AS-103 BV9AYA	Penghu Island	15-17 Jul
AS-107 HS2AC	Ko Sichang Island	26-27 Jul
AS-113 BV3ME	Mitsu Island	14-15 Jul
AS-113 BOOM	Matsu Island	25-27 Jul
AS-117 JE3DST/3	Awaji Island	25 Jul
AS-136 BD4ED/4	Chong Ming Island	03-27 Jul
AS-142 UAOZY/P	Kambalny Is	14-17 Jul
EU-009 GM3POI	Orkney Islands	05-17 Jul
EU-009 GM4FDM/P	Orkney Islands	13-14 Jul
EU-010 2S3JJJ	Isle of Lewis	07-28 Jul
EU-010 2AOAPF/P	Outer Hebrides	11-16 Jul

EU-010 2SØGNK	Outer Hebrides	10 Jul
EU-011 GBØSM	Isles of Scilly	22-28 Jul
EU-012 2A/DJ6AU	Shetland Islands	01-19 Jul
EU-016 9A4W	Brac Island	17-20 Jul
EU-016 9AØDX	Korcula Island	27-28 Jul
EU-016 9A2GF	Brac Island	04-14 Jul
EU-036 LA8LA	Hitra Island	07 Jul
EU-036 LA4XGA	Frei Island	19 Jul
EU-037 SM7CRW	Oland Island	07-09 Jul
EU-037 SM7DLZ	Oland Island	02-08 Jul
EU-038 PAØSKV	Vlieland Island	02 Jul
EU-038 PA6TEX	Texel Island	23 Jul
EU-041 IMØ/IK2AEQ	Maddalena Islands	13-20 Jul
EU-041 IMØ/IN3YGW	Maddalena Islands	19-21 Jul
EU-042 DL6ZAT/P	Amrun Island	09-10 Jul
EU-042 DL4FCH/P	Pellworm Island	18-27 Jul
EU-042 DK8OL	Isle of Sylt	05-16 Jul
EU-042 DH3RB/P	Isle of Sylt	17-26 Jul
EU-044 LA/IK3GES/P	Mageroya Island	09-10 Jul
EU-048 F5SNY/P	Belle Ile	26-28 Jul
EU-049 SV8DCY	Lesvos Island	01 Jul
EU-049 SV8DTL	Lesvos Island	21-22 Jul
EU-050 IL7/IK7VJX	San Domino Island	04 Jul
EU-050 IL7/IK6CAC	Tremiti Islands	16-18 Jul
EU-050 IL7/IZØCKJ	Tremiti Islands	16-18 Jul
EU-052 SV8/HAØHW/P	Kerkira (Corfu) Island	21 Jul
EU-052 SV8AQY	Ionian Islands	16 Jul
EU-052 SV8/DL1EJD	Corfu Island	05-07 Jul
EU-052 SV8/IK7XIV/P	Lefkada Island	22-25 Jul
EU-057 DL5KUD	Ruegen Island	09 Jul
EU-057 DLØMVT	Reugen Island	12 Jul
EU-060 SVØLR	Evia Island	02-10 Jul
EU-060 SV/HB9LDR	Evia Island	08-09 Jul
EU-062 LA6WEA	Alsten Island	01-06 Jul
EU-064 TM5J	Noirmoutier Island	22-23 Jul
EU-064 TMØY	Yeu Island	19-23 Jul
EU-065 F5SNY/P	Molene Island	18-21 Jul
EU-065 TM5ON	Oessan Island	21-23 Jul
EU-067 SV8/DL7VSN/P	Mykonos Island	14-23 Jul
EU-070 F/IK1TTD	Porquerolles Island	11-13 Jul
EU-072 SV8/DL8MCA	Skiathos Island	15-23 Jul
EU-076 LA/DF8YO/M	Lofoten Islands	06-11 Jul
EU-082 U1ZA/A	Kildin Island	02-17 Jul
EU-084 SKØHS/5	Vassero Island	27-28 Jul
EU-084 SM5OIG	Roslagen Island	01-22 Jul
EU-087 SM3LF	Alno Island	06-17 Jul
EU-088 OZ/DL2HEB/P	Laesoe Island	27 Jul
EU-089 CU8AH	Corvo Island	04 Jul
EU-089 CU8/ON7ZM/P	Isla Flores	06-07 Jul
EU-089 CU9AC	Corvo Island	03 Jul
EU-095 F5TBF/P	Embiez Island	26 Jul
EU-098 DLØSOP	Poel Island	03 Jul
EU-102 RF1P	Dolgy Island	17-25 Jul
EU-120 GB1ØØRN	Isle of Wight	10-11 Jul
EU-120 GØGBD	Isle of Wight	05 Jul
EU-120 MØBMJ/M	Holy Island	17 Jul
EU-120 GB2BLE	Lundy Island	09 Jul
EU-120 GB2LI	Lundy Island	28 Jul
EU-123 GM3VLB/P	Isle of Ewe	13-14 Jul
EU-124 GWØMOI	Anglesey Island	01 Jul
EU-124 2CØSLM	Anglesey Island	05 Jul
EU-124 MWØAUX	Anglesey Island	06 Jul
EU-129 DL8JS/P	Usedom Island	12-19 Jul
EU-129 DL5RFF/P	Usedom Island	22-23 Jul
EU-129 DL6NBR/P	Usedom Island	19-23 Jul
EU-129 SL1JEQ/P	Usedom Island	20 Jul
EU-131 IK3QAR/P	Campalto Island	04 Jul
EU-131 IK3ABY/P	Campana Island	11 Jul
EU-131 IK3TTY/P	Sant'Erasmo Island	11 Jul
EU-132 SNØWI	Wolin Island	21-23 Jul
EU-132 SP6CZ/1	Wolin Island	23-27 Jul
EU-132 SP6ECA/1	Wolin Island	19-22 Jul
EU-132 SP2LLW/1	Wolin Island	26-27 Jul
EU-133 UE1CIG	Gogland Island	23-28 Jul
EU-133 UA1AOQ	Kotlin Island	01-06 Jul
EU-136 9A6DCR	Krk Island	18-27 Jul
EU-136 9A9JH	Rab Island	09-13 Jul
EU-136 9A/DK3ID	Losinj Island	05 Jul
EU-141 LA5SJA	Vardo Island	26 Jul
EU-144 ID8/IK8TWX	Dino Island	01 Jul
EU-144 IZ8CCW/8	Dino Island	17-18 Jul
EU-144 IK8VVS/8	Dino Island	17-18 Jul
EU-144 IK8BIZ/8	Dino Island	17-18 Jul
EU-144 IK8WEJ/8	Dino Island	17-18 Jul
EU-149 ES4BG/2	Mohni Island	22-27 Jul
EU-149 ES4ABO/2	Mohni Island	23 Jul
EU-153 RZ1OA/A	Lyasomin Island	24-28 Jul
EU-158 SV3/I2YYO	Potri Island	03 Jul
EU-165 ISØLYN/IMØ	Piana Island	12-15 Jul
EU-166 IT9FXY/P	Isola Lunga	16-18 Jul
NA-019 WL7EM	Kodiak Island	10 Jul
NA-025 J8OB	The Grenadines	05 Jul
NA-034 KM4RX	Anna Maria Island	27 Jul
NA-036 VE7DXQ	Vancouver Island	20 Jul
NA-041 KL7KG/P	West Wilson Island	14 Jul
NA-044 VA3MER	Henley Island	13 Jul
NA-051 VE7TLL	Queen Charlotte Is.	16-19 Jul
NA-059 NO7F/KL7	Unalaska Island	12-17 Jul
NA-061 VE7QCR/P	Kaien Island	21 Jul
NA-061 VE7TLL/P	Kaien Island	21-22 Jul
NA-062 KE8M/4	Key West	26 Jul
NA-065 N6FD/7	Fidalgo Island	02-23 Jul
NA-066 KI6T/P	Santa Catalina Is.	22-26 Jul
NA-067 KU4OJ	Roanoke Island	07 Jul
NA-067 VE3XZ/W4	Ocracoke Island	09 Jul
NA-067 WB8YJF/P	Okracoke Island	25-28 Jul
NA-072 3E1AA	Contadora Island	11 Jul
NA-072 HP1XVH	Contadora Island	01-15 Jul
NA-080 MØCIL/C6A	Abaco Island	27-28 Jul
NA-085 KF9YL	St George Island	01-02 Jul
NA-110 AC4WW	Hunting Island	07-09 Jul
NA-110 AA4V/P	Isle of Palms	08 Jul
NA-110 WB4WTY	Folly Island	18 Jul
NA-113 C6GI	Great Inagua Is.	10-13 Jul
NA-118 VE7QCR/P	Dundas Island	23-26 Jul
NA-118 VE7TLL/P	Dundas Island	23-26 Jul
NA-118 CF7KDU/P	Dundas Island	23-26 Jul
NA-139 N8WNB/3	Assateague Island	05 Jul
NA-140 W3YN	Kent Island	14 Jul
NA-169 AD7U/P	Waadah Island	22-23 Jul
NA-169 W7W	Waadah Island	21 Jul
NA-169 N6VV/7	Waadah Island	21-23 Jul
NA-173 VYØO	Grass Island	01 Jul
NA-198 VO1XC/M	New World Island	14 Jul
OC-008 P29PB	New Britian	03 Jul
OC-013 ZK1AXA	Rarotonga Island	03 Jul
OC-022 YC9BU	Bali Island	03-26 Jul
OC-027 FO5QG	Nuka Hiva Island	02-10 Jul
OC-046 FOØMSN	Morea Island	12-18 Jul
OC-046 FOØCAB	Tahiti Island	15-18 Jul
OC-049 A35EX	Tongatapu Island	14-16 Jul
OC-059 V63AO	Kosrae Island	14-27 Jul
OC-067 FO5NL	Raiatea Island	10 Jul
OC-067 FOØDEL	Bora Bora Island	11-15 Jul
OC-075 YC5TA	Batam Island	12 Jul
OC-075 YC5TML	Batam Island	18-25 Jul
OC-075 YC5YAS	Batam Island	01-19 Jul
OC-119 DU8ARK	Jolo group	04 Jul
OC-129 DU5TA	Leyte Island	09 Jul
OC-130 DU8DJ	Mindanao Island	15-19 Jul
OC-133 9M6NA	Labuan Island	16 Jul
OC-137 VK4LV	Bribie Island	05 Jul
OC-137 VK4CY	Lamb Island	03 Jul
OC-147 YC9YKI	Yapen Island	26-28 Jul
OC-148 YC9MKF	Timor Island	05-27 Jul
OC-149 H44NC	New Georgia Is.	03-12 Jul
OC-149 H44JN	New Georgia Islands	23 Jul
OC-151 YC9LQA	Flores Island	04-05 Jul
OC-154 VK8AN/6	Troughton Island	14-23 Jul
OC-164 VK6NU/P	Rostnest Island	21-23 Jul
OC-185 VK8BB	Elcho Island	03-04 Jul
OC-195 VK7FLI	Flinders Island	09-12 Jul
OC-210 YC8RRK	Sangihe Island	02-28 Jul
OC-210 YC8TXW	Sangihe Island	15-17 Jul
SA-028 ZY2SS	Sao Sebastiao Is.	22-26 Jul
SA-028 ZW2SS	Sao Sebastiao Is.	23-26 Jul
SA-040 HK3JBR/1	Rosario Island	17-20 Jul
SA-081 5K8T	El Moro Island	25-26 Jul
SA-081 HK3JJH/8	El Moro Island	25-26 Jul

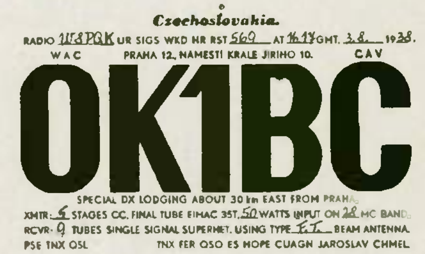
The following IOTA operations have been approved by the IOTA committee upon receipt of acceptable validation material:

EU-108 GB5TI	Treshnish Isles	May 1999
AF-002 3C2JJ	Corisco Island	May 1999
AS-036 JA6CM/6	Tsushima Island	Apr 1999
AS-049 JI3DST/6	Tokara Arch.	Apr-May 1999
AS-049 JF6WTY/6	Tokara Archipelago	May 1999
AS-049 JL6UBM/6	Tokara Archipelago	May 1999
AS-049 JM6NWR/6	Tokara Archipelago	May 1999
AS-056 JA4PXE/6	Danjo Arch.	Mar & May 1999
AS-067 JA4PXE/6	Kusagaki Island	Apr 1999
AS-122 HLØIHQ/2	Paongnyong Island	May 1999
AS-136 BI4CM	Chongming Island	Feb 1999
NA-074 KL7AK	Nunivak Island	Jun 1999
OC-165 9M8QQ	Satang Island	Mar 1999
OC-183 VK6ISL	Green Island	Jun 1999

Just finishing from Ilha de Santo Antonio (SA-046) is ZV7G, who is scheduled to be on through 13 September. You might be able to find ZW7G 24-27 September operating from Ilha de Itamaraca (SA-046). Both operations are on CW and SSB, 10-80 Meters.

Antique QSL Department

The following three antique QSL cards were provided by Orv Bailey, W7QPT, formerly of Warm Springs Indian Reservation in Oregon. They came from the collection of a longtime friend, Paul Young, W7FHJ, and were given to Orv by Paul's daughter after Paul died.



Once upon a time Amateur Radio operators took pride in their stations and were not afraid to show it. So goes the photo QSL card for W9OMD in Muncie, Indiana. Notice the neat arrangement of the equipment and the D-104 microphone in the upper left. The operator was William Quick. Buckmaster reports that this license expired and was not renewed.

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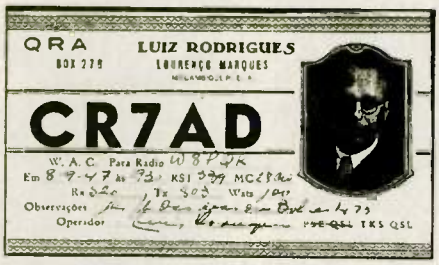
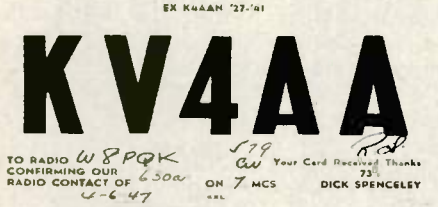
However, it indicated that the operator was born in 1902 and judging by his photo it probably was taken during the late 1930s. Perhaps he is now an SK?



The second card is for KH6BV, the call assigned to Camp Catlin Amateur Radio Club in Hawaii. Hawaii was still a territory and wasn't granted statehood until 12 years later. Apparently, the operator, Stan Dynak, is no longer involved with Amateur Radio and may be an SK. The call KH6BV has been reassigned.



The third card is from China. Paul worked this one in October 1947. In the years following WWII activity was plentiful from China, then they were gone for many, many years. The card for C1CH indicates that he was formerly XU8CH.

Orv submitted these cards over six years ago and in the meantime has also become an SK. Orv had been involved in Amateur Radio since 1933. Orv passed on a very interesting comment: "The biggest mistake you can make is to believe you are working for someone else..."

QSL information

The new address for the 9th Call Area QSL Bureau, is: Northern Illinois DX Association, W9 Incoming QSL Bureau, P.O. Box 273, Glenview, IL 60025-0273.

Charlie Harpole, K4VUD, reports he has been erroneously listed in some sources as the QSL manager for 9N1AA, which should go via N4AA.

Charlie also says he made a minor error in his 9N7UD cards for some of the 15M CW contacts. He mistakenly listed the frequency as 14.224 instead of 14.024 and the date and time being six hours off. However, he sees no problem with acceptance at the DXCC desk as the band, mode and year are correct.

Karl-Heinz Kuehlborn, DL2FAG, reports that direct QSL requests for their S79YL, S79ZG and S79FAG operation should be in the mail by now after receiving the cards from the printer during early July. All other requests will be answered via the bureau later this year.

The address for VU3TOM listed in the August QSL Routes should now go to Tom Jones, RR1, Box 438, Addison, ME 04606. Tom's stateside call is KR4ZY.

Thanks go to the following contributors for this month's column: DL2FAG, EA5BY, PS7KM, N2VW, K4VUD, KR4ZY, N5FG, N6FF, W7QPT, Western Washington DX Club (WAØRJY), Northern Arizona DX Association (W7YS), WebCluster (OH2AQ), *425 DX News* (I1JQJ,), *The OPDX Bulletin* (KB8NW), *DX-News* (NJDXA), *The Low Band Monitor* (KØCS), *The Daily DX* (W3UR), and *QRZ DX* (N4AA).

Near the end of July we drove up to the Portland area for the annual Pacific Northwest DX Convention and then visited our daughter and her husband over on the coast. The convention is always a small, but friendly group. Those of you DXers in the Pacific Northwest who have never attended should consider doing so. Next year it will be in Vancouver, and the Canadians promise it will be well worth your while to attend that one.

— Very 73, de John N6JM. — John can be reached at: P.O. Box 310, Carmichael, CA 95609-0310 or via e-mail: n6jm@pacbell.net.

Smiling from the Ukraine is Igor Slakva, US1IDX/US1I. According to the note on back this is his "working place" where he sends daily e-mails to his QSL manger, Floyd Gerald, N5FG. Notice the 5BDXCC plaque behind him. ***(Photo courtesy of N5FG).***

ARRL seeks nominees

Nominations are open for the 1999 ARRL International Humanitarian Award. This award is dedicated to those amateurs who, through Amateur Radio, are devoted to promoting the welfare of mankind. The prize goes each year to truly outstanding Amateur Radio operators in areas of international humanitarianism and the furtherance of peace.

Any radio amateur or group of amateurs worldwide who has provided extraordinary service through their Amateur Radio skills for the benefit of others in times of crisis or disaster is qualified to receive the award.

All nominations and supporting materials for the 1999 award must be submitted in writing in English to ARRL International Humanitarian Award, 225 Main Street, Newington, Connecticut 06111. Nominations must be received by 31 December. *— ARRL, Newsline*

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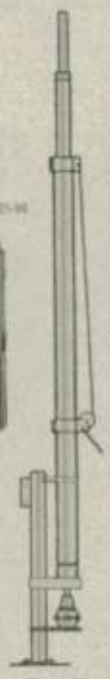

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BG4RAT	BY4RSA
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BG4RCO	BY4RSA
BG4RCV	BY4RSA
BG4RDE	BY4RSA
BG4RDN	BY4RSA
BG4RUJ	BY4RSA
BG4RUK	BY4RSA
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BG4RUP	BY4RSA
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ED6EIG	EA6VC
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G6G	GØLII
G7G	MØADU
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GB2LBN	GMØCLN
GB2LI	GWØMXG
GB5GI	GWØANA
GCØSTH	G3DIY
GD3IZD/P	G3IZD
GMØBPU/P	GØBPU
GNØSTH	G4DIY
GU3VXJ	G3VXJ
GU7D	G3LZQ
H2T	5B4XF
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HBØ/IK4RQJ	IK4RQJ
HBØ/IK4VET	IK4VET
HBØ/IK4XCL	IK4XCL
HBØ/IK4ZGY	IK4ZGY
HBØ/PI4TUE	PI4TUE
HB7OGR	HB9AAQ
HC4/HK3JJH	HK3JJH
HG5I	HA5LN
HI3LFE	AD4Z
HLOY/4	HLØY
HS2AC	G3NOM
HS4BPQ	E21EIC
HU4U	EA4URE
HZ1AB	K8PYD
IBØ/IZ0CBB	IZ0CBB
IBØ/IZ0CKJ	IZ0CKJ
ID9/I2IAU	I2IAU
IJ7/IK7DXP	IK7DXP
IK7DXP/P	IK7DXP
IK7JWX/7	IK7JWX
IK8TWX/8	IK8TWX
IL3/OE8Q/P	OE8KDK
IUØC	IØYKN
I28AG	J28NH
J3/GØSTR	GØSTR
J45K	DL9USA
J48CT	ON5CT
J48QEI	IK2QEI
JW/DF6VI	DF6VI
JW/DL4OCM	DL4OCM
JW5NM	LA5NM
JW5RIA	LA5RIA
JY9QJ	DL5MBY
K2L	WB2YOH
KHØ/7K4KNE	7K4KHE
KHO/AE4SU	JA3KWZ
KHO/K7IL	JF3PLF
KHO/KF8TW	JH3TXR
KHO/N3JJ	JA3ART
KHO/N7EIU	JA3AJ
KHO/NH7V	JI3NST
KHO/W8YAQ	JA3YAQ
KHOHT	JR7FBR
KHOHX	JH7WKQ
KH3/NH6D	NN6FF
KH3/W5RXP	W5RXP
KH4/SM6FJY	SM6FJY
KP2/AA1BU	AA1BU
KP2/EI7CC	KU9C
L27EE	LU7EE 1999
L2E	LU7EE 1991-1992
L36E	LU7EE 1998
L59L	LU4LG
LS7D	LU7DW
LS7EE	LU7EE 1995
LT5Y	LU1YU
LV4V	LU4VZ
LXØRL	Bureau
LY/OH1NOA	OH1NOA
LZØSUN	LZ1KDP
LZ99HQ	LZ1UQ
MØBYF	OH6YF
M6T	G4PIQ
M8M	G3SXW
MJ/OM3LA	OM1APD
MW7Z	G5LP
N4H	KO4PY
N98ITU	NØJPH
NHØI	JA7DLE
NHØL	JH7YCE
NHØM	JA7YCE
NHØM	JH7YCE
NHØP	JA7SYA
NH7A	W6QK
OD5/9K2MU	WA4JTK
OD5PN	LX1NO
OD5QE	IØWTD
OD5SB	IØWTDO
HØDJ7ST	DJ7ST
OHØ/K7BV	KU9C
OHØHSV	SP5XMU
OHØZ	OH1EH
OJØ/K7BV	KU9C
ON5ØGDV	ON5PL
ON7SUN	ON4LCV
ORØOST	ON6HC
OT9T	ON4UN
OX3NUK	ON4GO
OZ5L	KP3YL
P29TR	W7TR
P29VHX	DJ9HX
PA6STM	PAØGIN
PA6T	PI4TIL
PA6TEX	ON4ALW
PJ7/PA3EWP	PA5ET
PJ7/PA3GCV	PA5ET
PJ7/PA4EA	PA5ET
PJ7/PA4WM	PA5ET
PJ7/PA5ET	PA5ET
PJ7/PA7FM	PA5ET
PJ9/WØCG	WØCG
PJ9I	ON4CFD
PT4M	PY4FQ
PV1S	PY1KS
PYØFZ	PY7ZZ
PZ1DV	W9GW
R1AND	RW1AI
R1ANF	RK1PWA
R1ANL	UA6AH
R1ANZ	UW1ZC
R1FJL	UA3AGS
Only Russia	
R1FJO	UA3AGS
Only Russia	
R1FJV	UA3AGS
Only Russia	
RAØBK	DL8KAC
RF1P	UA1RJ
RI1P	UA9KM
RZ1OA/A	RZ1OA
S58N	S57MX
S79MAD	GW4WVO
SI9AM	SM3CVM
SKØHS/5	SMØMPV
SNØWI	SP2LLW
SNØZPW	SP9IIL
SN1I	SP1NQF
SN2KM	SP2BIK
SV1/TA3J	TA3J
SV1/TA3YJ	TA3YJ
SV8/SM7BCX	SM7BCX
SV8/SM7DXQ	SM7DXQ
SV8/SM7EQL	SM7EQL
SV8/SM7GIB	SM7GIB
SV8/SM7MPM	SM7MPM
SV8/TA3J	TA3J
SV8/TA3YJ	TA3YJ
SV9/G4FRE	WW2R
SV9/LX1SU	LX1SU
SW8L	SV8CRI
T22TK	JA3MCA
T5RT	Pirate
T88DX	JI3DLI
T88JR	JH3FJG
TAØS	DL6DB
TA2DS/0	WA3HUP
TA3JJ	OK1JJ
TA3ZI	DL8OBC
TF1/LX9EG	LX1NO
TF7/LX9EG	LX1NO
TJ1PD	N5DRV
TMØY	ON4AMM
TM1OTA	ON4ADN
TM1SUN	F6KRD
TM2F	F5LJA
TM5BMA	F5ORQ
TM5ECL	F6KWP
TM5J	F8CIQ
TM5K	ON4ON
TM5ON	ON4ON
TM5SOL	F5INJ
TN7OT	AL7OT
TU5IJ	I2AOX
UA1OLM/A	UA1OLM
UA9JMM	KOXQ
UE1CIG	RZ1AWD
UE1NWE	RZ1NWE
UE1TTT	RN1TN
UE6AEK	RA6AAW
UK8OM	IK2QPR
UN7EG	DL8KAC
UN7FK	W3HNK
UR4WWT	WR3L
UT8AL	DJ9YE
UU4JXM	UU7J
UU7J	UU7J
V26E	AB2E
V47CV	PA5ET
V47EA	PA5ET
V47ET	PA5ET
V47FM	PA5ET
V47WM	PA5ET
V47WP	PA5ET
V63EC	JK1FNN
V63PD	VK4AAR
V63YL	SM6FJY
V7/AC4G	AC4G
V73CW	AC4G
V73ZZ	K7ZZ
VC6MP	VE6NRJ
VD7D	VE7TLL
VE2/VE3ZZ	VE3ZZ
VKØTS	VK1PJ
VK6NU/P	VK6NU
VO1SDX	VO1HE
VP2E/PA3EWP	PA5ET
VP2E/PA3GCV	PA5ET
VP2E/PA4EA	PA5ET
VP2E/PA4WM	PA5ET
VP2E/PA5ET	PA5ET
VP2E/PA7FM	PA5ET
VP5CW	K4LT
VP9/KG8XV	JH1ROJ
VP9/N0ED	NOED
VQ9DJ	AB7JN
VU2JPS	VK9NS
VU3MCV	ON7LX
VX2BK/P	VA2BK
W1L	W1KSZ
W2W	W3MR
W4T	WA3HUP
W7W	W5DX
W98ITU	NØJPH
WHØ/WH2M	JA7FWR
WP2Z	KU9C
WP3C	W3HNK
WP3R	W3HNK
XE1/SMØOUG	SMØCCM
XF4L	OH2BU
XX9TRR	N6XJ
YC9WZJ	W6MD
YJØAFL	VK4FL
YJØAXC	JE1DXC
YLØH1NOA	OH1NOA
YR99E	YO3KPA
YV3OT	YV5ARV
YW7C	W4SO
Z31JA	NN6C
Z32FD	DJØLZ
Z32ZM	I2JSB 01/01/99
Direct	
Z37GBC	NN6C
Z38/NO6X	ND6A
Z38X	ND6A
ZC4ATC	5B4YX
ZC4JP	GØWSA
ZD7DP	W1ZT
ZD7SM	W1ZT
ZD7WRG	WA2JUN
ZF2JM	KD3YK
ZF2ZW	K4ZW
ZK1MGS	JJ8DEN
ZL2K	ZL2NX
ZL6QH	ZL2WB
ZM1OSJ	ZL1CDX
Bureau	
ZM1OSJ	ZL1OSJ
Direct	
ZM2K	ZL2NX
ZS8D	ZS6EZ
ZVØSB	PT2GTI
ZVØSW	PT2GTI
ZW2SS	PT2GTI
ZW4M	PY4FQ
ZX7XX	PY7XC
ZY2SS	PT2GTI
ZZ4W	PY4KL

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HF antenna feedback

If you write to me, note my new address at the end of this column. But most of you send your comments by e-mail, and that address has not changed.

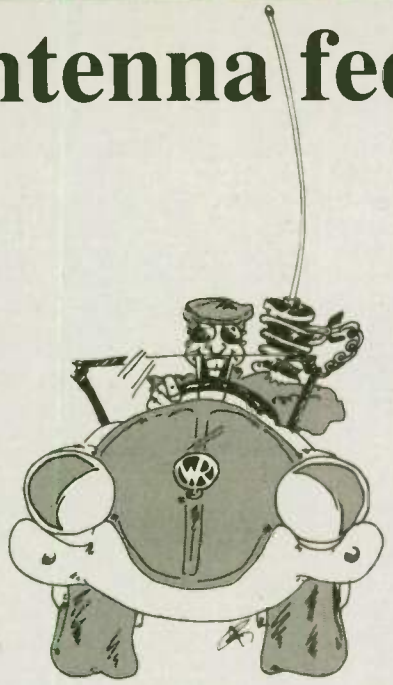
Just before my PC went off for my move, Dan Schobert, W9MFG, sent me this interesting e-mail:

"It may be of interest that for some 18 years I ran HF mobile from an 18-wheeler. My first antenna was a single Hustler mast and a single resonator, changing these when I wanted to change bands. This got to be tedious, so I devised a multiband thing. Using a piece of tubular steel attached to the side of the tractor, I drilled several holes in the tube and had several resonators on line at once, but this tended to collect attention as well as ice.

"When I switched to a conventional (long nose) Kenworth, on top of the steel cab was a fiberglass wind deflector. This was attached to the cab on several steel tabs. Toward the back of the deflector there were two of these tabs separated by about seven feet. I got a piece of angle aluminum and drilled six holes in it to accomodate five resonators, and one coax connector. I also drilled two mounting holes. The bar was attached to the steel tabs holding the wind deflector but was insulated from the cab steel. The ground side of the coax was specially connected to the truck ground so that a line from the xmtr put all resonators on line at the same time, but only the one with the least SWR would be active. Being behind the wind deflector pretty much kept the resonators from getting much ice, and little attention when I drove into questionable neighborhoods. There didn't seem to be much interaction between these resonators and the trailer so close behind. And the signals seemed to do well. When I operated on 75, 40, or 20 I seemed to have little trouble being heard. About the only problem was the highway shock. The resonators got to whipping around quite a bit, and even broke one whip off. So, if I were to do this again, I would put base springs on each. Actually what I did wasn't so special, it was simply a variation on the idea of putting several resonators on a single Hustler mast, something I did try, but found it wobbled too much in the wind."

I've never gathered too much ice driving my 1/2 ton pickup in California. Thanks Dan.

In the August column, Rick Cochran, WO8L, agreed with the previous comments regarding using Hamstick type antennas for dipoles. You are always better off using resonant antennas rather



than compensating with a tuner. I got a nice message from Bill Ross, K6MGO, that questioned this on the basis of a flyer or pamphlet suggested by Kurt N. Sterba some time ago. This apparently, among other things, described a clandestine antenna that could be built as a dipole from a pair of 80-meter Hamsticks. With balanced feed and the proper tuners, this was supposed to function up to two meters. Without trying it, I won't dispute that this configuration could be tuned to all bands. But Kurt would agree that changing to individually resonant whips would be more efficient. Not more convenient, but things never work out that way.

I've tried to round out the HF mobile subjects that we cover, but since we touched on RV mobile, most of my correspondence has been about that. While I was moving, I got a detailed letter and photo from Bill Schuchman, W7YS, describing his TS-140 mobile installation in his 21-foot fiberglass body motorhome. To hit the high points, he uses a Hustler configured with a plate that allows multiple resonators to be mounted on the bottom rod. I have a similar adaptor made by Hustler, but the mental image of all that mass has so far prevented me from using it. Bill is not concerned about that because like many Ham RVers he only sets up and operates when stopped. He uses a resonator in the fourth (center) position, where Hustler suggests using only three with their adaptor plate. He solved the infamous fiberglass ground plane problem by running a square loop of wire totaling 48 feet around the roof. Since the corners were attached to molding mounting screws, he may also have electrical contact with metal under the fiberglass. This fix allowed the antenna to load on all bands intended, but RF feedback giving him a rough note on 10M CW had to be removed with a ferrite bead on the coax at the base of the antenna, and another in the RV.

Bill is using RG-7 coax he had on hand for a 12 volt lead to power the rig. What? You don't have any RG-7? Without going into the details, Bill had a fuse problem which he traced to running the RG-7 too close to the exhaust pipe. Something about 12 inches of RG-7 jacket gone.

Another subject that has come up has been the use of HF digital e-mail nodes. I have received e-mail from Hams using these nodes, and had it demonstrated to me by Frank Clements, W6GZI, of the Sam's Radio Hams, using PACTOR. But I don't have any first-hand knowledge. It is documented on the web. Try http://www.win-net.org for a start.

The Sam's Radio Hams came up to Northern California in June, and I spent most of a day at their campground in Pine Grove renewing acquaintances and looking over their mobile installations. Frank's PACTOR demonstration that I just mentioned was the main thing since our last visit.

I heard again from Marten du Preez, ZS6ZY, Pretoria, South Africa, a member of the Radio Amateur's Caravan (RV) Club: "Three of us, Bill Ingleson, ZS6KO, Ronnie Watt, ZS6BUG and M.J. du Preez, ZS6ZY and a friend of mine leave for a week in the caravan (RV) park in the Ben Alberts game reserve about 200 km from Pretoria. We are leaving Monday morning and return on Friday, 23 July. I haven't been there before, only passing by en route to the Botswana border where a doctor friend of mine has a game farm. On the about-2000-hectare farm there are a substantial variety of antelope but fortunately no predators. We shall operate HF, mostly on 40 Meters, but in the park on 2M, since we can contact one another while we are travelling on different routes and thus call if we see something for the other Hams to come and see."

Let me hear from you on any HF mobile subject! Send e-mail to lcobb@compuserve.com, or write: Les Cobb, 4114 Horgan Way, Sacramento CA 95821. More at http://home.pacbell.net/lcobb/.

Antennas in the field

Many years ago I worked next to a crusty news editor who was always misplacing things. He would get upset as he moved piles of wire story printouts seeking some lost item. Finally he would find the lost item, smile, and announce: "I held an investigation and the culprit was me!"

How often do we get upset at something only to discover we had done it to ourselves? Take for example something that just bothers me. I'll be driving along a long stretch of road and the car in front has the blinker on — for miles and miles. The driver seems to be oblivious to the indicator or the almost-subaudible click of the flasher relay. In my younger years I would flash my lights or turn on my own blinker in an attempt to let the driver in front know about the perpetual indicator. All to no avail.

Some months ago I obtained a 1984 Pontiac Fiero. You guessed it, if I signal a left turn, the blinker stays on until I move the lever back to the off position. Now the shoe is on the other foot. I used to get mad and upset concerning the "no good, unaware, poor" driver who didn't notice the signal was on. Now, when the "culprit" is me, I give an embarrassed smile and say "oops."

Isn't it interesting how irritating something is until we're guilty of the same thing? When someone else does something odd on the radio, we're irritated, but let us do the same thing and it's OK, we were "tired" or we were "not thinking" or we were "clowning around" or — you get the idea. I guess the old editor was wise after all — "the culprit was me."

Field antennas

A newly licensed Texas Amateur Radio operator (and reader) wrote recently seeking guidance concerning setting up field antennas for search operations. It impressed me that he would see the need for communications within his SAR group and take the time to study for and obtain an Amateur Radio license. Because of his effort, he is now the team's communications specialist and his vision has expanded to where he can see great benefits in establishing a more efficient field station. He's also willing to learn and ask others to share their expertise.

Some of his needs included an antenna for the General Mobile Radio Service (GMRS), a VHF public safety frequency along with Amateur Radio VHF and UHF. Because other readers in past years have inquired about field antennas, I thought a general discussion might be in order.

My frame of experience comes from field operations over many years in Utah and Wyoming. If you look at land features in both states you will find both mountain and flat terrain. We also experience weather extremes (dry, hot, cold, snow) but few tornadoes and no hurricanes. The ideas I'll present come from experience during operation in this area. As always, your mileage may vary based on where you live and your unique set of circumstances.

As I am quick to tell anyone with an antenna question, the first goal is ease of setup (simplicity) and reliability of use. Because many of us are volunteers with a limited amount of funding, I also try to factor in cost so losing an antenna isn't a damper to my involvement. It's also a good idea to plan a system for the "most likely" scenario and not the infrequency or special one-time event. You can always customize your equipment for the optimum scenario but this injects complexity, dollars, and setup time into your plans.

My basic gear includes two Ringo Rangers, two Ringos, two HF dipoles, a G5RV, a Midland CB antenna, a variety of j-poles, and several NMO magnetic-base antennas with a variety of coils and whips. Most of these were obtained at swap meets or pawn shops at a fraction of the "new" cost. I do have an 11-element yagi as the most complex of my field antennas but it is rarely taken unless I know there will be terrain or distance challenges.

The favorite of the bunch (I'll talk about it first) is the Hygain Tape Doublet (a dipole). Picture two metal measuring tapes connected together and you'll get the idea. This is a compact dipole that essentially covers up to 80 Meters. It has a coax connector in the center and you pull out the two metal "tapes" to the proper length (the tapes are marked in inches), hang it from a tree or portable mast, and you're on the air. This doesn't get used often because most SAR operations are local in nature, but it does get exercised during Scout and youth camps. If the need arises for HF commo, it is easy to set up.

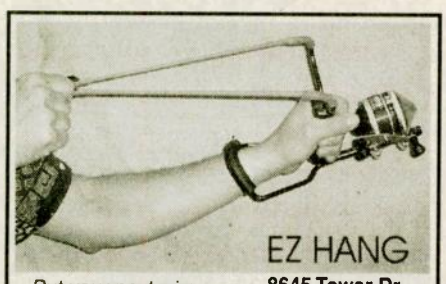
The workhorses of the group are the VHF Ringo Rangers and I like them because they can be tuned across most of the 140-160 MHz spectrum. I carry a chart of measurements for the most common frequencies so that with a tape measure I can quickly adjust the antenna for efficiency. I've checked the SWR and confirmed the adjustments in advance so I don't need to take the time during a search or in bad weather. Because these antennas get used mostly for Amateur Radio, I've marked the settings with a black marker on the antenna itself so even my kids can expand the antenna quickly.

I have a couple of regular Ringos that work well for UHF and 220 MHz and find they are easy to tune and rugged enough to last through many field trips. These are pretty common at swap meets and often sell for under five bucks.

The next most common are my j-poles and I've got quite an assortment. They're all home-made and cost about eight bucks each to make using half-inch copper pipe. I have j-poles for Amateur and Public Safety VHF and UHF as well as for aviation, GMRS, and 220 MHz. All of mine are fixed tuned and built for the most commonly used frequencies. I carry a bag of hose clamps (purchased at garage sales for about five cents each) and use these to attach a j-pole to any nearby upright object (fence poles, vent pipes, traffic sign, etc.). The j-pole is nice because it doesn't need to be grounded, i.e. attached to a metal pole or mast. It works quite well hanging from a tree, clamped to a plastic vent pipe, or even stuck into the ground.

The Midland CB antenna was not built for efficiency, but then CB isn't a band you use for distance anyway. Once in a while some group will have only CBs and I find this is better to use than an extended whip or a rubber duck for base camp needs.

The magnetic NMO mounts are great for that "right now" antenna. I have a variety of loading coils or quarter-wave whips so I can add an extra antenna for immediate use. These cling to cars, trash cans, filing cabinets, window wells, fence posts, and any other steel structure and



make for a quick temporary solution until the portable mast is erected.

The portable mast

In almost three decades of trial and error, I've yet to find a consistent need for a crank-up tower. It's great for Field Day, but almost never needed for an emergency services event. I'm not saying it would not be useable; it's one of those higher cost, complex to set up things we can make do without.

I've also tried various fiberglass and plastic pipes and other assorted military surplus and commercial masts and have determined I like the military aluminum antenna masts the best. These are about an inch-and-a-half in diameter and come in three- and five-foot lengths. They fit together and a Ringo Ranger slides easily onto the end!

It takes some looking to find these mast poles but many times an Army/Navy surplus store will have them and won't know what they are. (One store thought they were tent poles!) I've taken one into surplus stores to show the clerk and they'll dig around and find them buried in the back. Because they often don't know what they are, you'll find them at rather inexpensive prices — but you do have to have patience and look around.

You might also be able to find a tripod adapter for these mast sections but you can also use a roof-top tripod mount found inexpensively at your local Radio Shack store. The Shack also sells antenna masts that fit together, but they're steel, not aluminum, and get heavy and unwieldy when you stack two 10-footers. The military aluminum masts are sturdy and lightweight, can be extended to 50 feet, and erected by one person.

My usual setup is two military masts (with a tripod base), each holding one Ringo Ranger and a side-mounted j-pole, and one supporting a dipole or G5RV HF antenna. If I extend the masts above 15 feet or if the weather looks ugly, I use three guy ropes for each setup.

Here's the deal. If my teenagers are along to help, the needed antennas can be quickly set up with minimal instruction. The j-poles don't need adjustment, the Ringos are pre-marked and are simply extended to the proper length and the clamps tightened, or the G5RV attached with no adjustment. We simply fit the antennas to the mast, connect the coax and possibly guy-ropes, raise them to vertical and we're ready to go.

Best of all, the masts, antennas, coax, and guy ropes are easily carried in the back of the Ford Explorer. They're lightweight, durable, and they work well for our needs. I'm considering painting some of the j-poles for a color-coded setup and even painting the masts for ease of identification. When others are helping me, I could say "take this end of the coax to the red mast" or "put the blue antenna on the yellow mast." I think having bright colors would also add to having a safe setup and make the command post easier to find as in "see the incident commander in the trailer under the tall yellow antenna mast."

Consider the coax

No discussion of antennas would be complete without an urging that you don't cut corners when it comes to coax. The finest and best-tuned antenna works only as well as the quality (and loss) of the coax. It has often befuddled my brain to see a nice new UHF/VHF antenna erected at a Scout event only to be connected by some cruddy old RG-58 coax. (And, yes, I've been guilty of the same!)

I know some antenna theory experts will tell you it's OK to use RG-58 for HF because loss isn't as critical as with UHF. This is good advice except I never know if I'll need an HF antenna and two VHF antennas or three VHF antennas and a UHF antenna when I set up at an emergency operations center. I never know whether I'll need a 10-foot run or a 75-foot run, so I plan on worst-case scenario and purchase good quality coax that I could use for VHF, UHF, GMRS, CB, or HF.

My wire of choice would be Belden 9913, a good-quality, moderate-cost, heavily shielded, air core coax. But it's difficult to use (especially cold) and if you kink the coax, it's no good. I have a couple of 100-foot coils in case I need a high-quality coax run, but I favor RG-8 and RG-214. Both offer a good tradeoff between ease of use and loss across my most-used spectrum. The RG-214 I like because it is double shielded and remains flexible in cold weather.

You may have already figured it out, but even RG-8 carries different pricing. Recall the adage, "you get what you pay for." If it's cheap, there's a reason. A good roll of coax will last you many years if you take care of it. I've also noticed that cheap RG-8 is very difficult to use when cold while better quality RG-8 remains more flexible in extreme cold. Don't be fooled by cheap prices and unknown brands. My advice is to stay with known quality and pay the extra few cents per foot so you know what you're getting!

Connecting it together

A final thought that while you're contemplating your own antenna and coax needs, don't scrimp on the PL-259 connectors. I use "silver teflon" connectors and highly recommend them. They're easier to solder than the cheap varieties and seem to last longer and connect easier. They'll cost you a little more if you buy them from a commercial vendor but I've found them in plentiful quantities at swap meets and even from military surplus vendors.

I would encourage you to learn how to install PL-259 connectors properly because they'll be the stress-point of your installation. You want a solid connection so you're not trying to fix a poor solder job on-scene in bad weather. I stole an idea from another operator and when I coil my coax, I install an SO-239 barrel connector between the two ends. This keeps the ends from being damaged in transit (or filled with dirt) and gives me a way to connect two lengths together without having to go look for a barrel adapter.

Another suggestion is to avoid electrical tape when you coil the coax. There are some nifty Velcro strips available at a reasonable cost that don't leave a sticky residue behind when used for a long period of time or in hot weather.

As with stuff you take to the field, affix a label to everything with your name and call sign! With a label, you have a higher chance of recovery when you loan gear in the heat of the emergency.

Until next month, be prepared. 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.*

BASIC Loops

```
10 PRINT "LIL_LOOP.BAS, BY KD5DL, 10/99": PRINT
 20 PRINT "  COMPUTES THE OPERATING FREQUENCY, RADIATION RE-
SISTANCE AND EFFICIENCY OF"
 30 PRINT "  COMPACT LOOP ANTENNAS, BASED ON CONDUCTOR SIZE
AND LOOP DIAMETER.": PRINT
 40 INPUT "  CAPACITOR VALUES (pF) MIN,MAX"; A,B : C=A
 50 INPUT "  CONDUCTOR DIAMETER (IN)"; D
 60 INPUT "  LOOP DIAMETER (FT)"; E: F=37.7*E: G=4*F/D
 70 PRINT: H=.00508*F*(2.303*(LOG(G)/LOG(10))-2.451)
 80 PRINT "USE A";INT(20*E)/100;"FT DIA. COUPLING LOOP:"
 90 PRINT "LOOP INDUCTANCE IS";INT(1000*H)/1000;"uH."
100 PRINT "  CAP   FREQUENCY    RAD RES    LOSS RES     EFFICIENCY"
110 J=159.155/SQR(C*H): K=2.02375E-03*(E*6)^2
120 L=197*(E*3.14159/(984/J))^4
130 M=E*3.12903E-06*SQR(J*1000000)/D: N=100*(L/(L+M))
140 PRINT USING "####   ###.##     ##.####     ##.####       ###.#";C;J;L;M;N
150 IF C=>B THEN 200
160 C=C+5: GOTO 110
170 PRINT:INPUT "RECOMPUTE ANOTHER LOOP DIAMETER (Y/N)";A$
180 IF A$="y" OR A$-="Y" THEN C=A: GOTO 60
190 INPUT "RECOMPUTE FROM SCRATCH (Y/N)";A$
200 IF A$="y" OR A$="Y" THEN 40 ELSE END
```

Who says they don't have room for an HF antenna? If you have room to stand up and stretch out your arms, you have room for a compact loop!

The type of antenna we're talking about is nothing more than a resonant tank circuit with a relatively large inductor. It has a low radiation resistance and narrow bandwidth, but it also has a radiation pattern favorable for local and DX work, and it doesn't need to be elevated very high to get the signal out. Amateur-built loops less than seven feet in diameter have been known to work stations from Asia to South Africa.

The antenna is not a new invention—it has been around since the late 1950s. It first caught the attention of amateurs during the mid-1960s when word got out about a new type of antenna the Army was using in Vietnam. The military version consisted of eight 5-foot lengths of tubing that, when assembled, formed an octagon-shaped loop about 12-feet in diameter. Its matching/tuning system allowed it to perform in the 2.5- to 5-MHz range, and it was said to be at least as effective as a 40-foot high full-sized dipole.

However, the antenna did not quite catch on. Amateurs who attempted to duplicate the Army's claimed performance just couldn't see the signal advantage over a good dipole or vertical. They were probably looking for superior performance from a small antenna, and were disappointed when they didn't get it.

Of course it didn't hurt that the Army's antenna had gold-plated joints, used special sleeve clamps to insure low ohmic losses, and used the best available components in its matching network. Amateurs, more used to working with thin-wire antennas, undoubtedly skimped in their efforts at duplicating "military specs."

Nonetheless, the compact loop remains a viable antenna when it is properly constructed. Because it is an electrically small antenna, its radiation resistance will also be quite low, and unless something is done to counter electrical losses, the antenna can be very inefficient. Four ways to reduce losses include plating all joints with gold, as the Army did; eliminating the joints altogether (we'll soon see how); making the loop surface as thick as possible; and using materials that conduct current well.

Copper water pipe is a good choice for loop material. The rigid pipe can be cut into individual sections and soldered or brazed together with 45-degree elbows to make an octagonal loop. Flexible copper tubing can also be used, and has the added advantage of eliminating joints altogether. It can be shaped into a circular shape quite easily.

The other half of the tank circuit, the capacitor, has to be high quality, low loss as well. At higher power levels current and voltage in the loop will be quite high—as much as 45 or 50 kilovolts at 1000 watt input levels. For this kind of voltage the capacitor's plates need to be at least a third of an inch apart. Of course, smaller capacitors can handle lower power levels.

The capacitor should have a low-impedance connection to the loop. Bolting the capacitor's sections directly to the loop is one method; using copper braid or low impedance strap material to solder the loop and capacitor together is another. At least one experimenter recommends using a split-stator or dual-ganged capacitor to avoid having to electrically connect the capacitor's shaft to the loop, and another experimenter, Ben Smith, W4KSY, has used a homemade coaxial capacitor in one of his 40-meter loops.

Since loop antennas have so little bandwidth, several experimenters have found it convenient to attach a slow r.p.m. motor to the capacitor's tuning shaft for remote-controlled tuning.

Finally, there's the question of "feeding" the loop. The earliest loops used a capacitive tuner/matcher (figure at a). Figure b shows a similar design that uses only two capacitors. A gamma match is used at c, and a coupling loop, about one fifth the diameter of the main loop, is used at d. As with the main loop, matching components need to be as efficient or as lossless as possible (eg. the coupling loop should be something more substantial than a small wire).

While an antenna analyzer, such as MFJ's model 259, can aid in matching, nothing more than an SWR indicator is needed. Simply feed the loop at low power and tune it for minimum SWR. When it's matched, boost the power and fire away.

Capacitor size will probably be the limiting factor when it comes to building a loop. My junk box yielded several candidates, and I found a few more in the $5 to $10 range at a recent hamfest. They can be purchased new from parts suppliers, like Kilo-Tec (P.O. Box 10, Oakview, CA 93022), or as surplus items (try Fair Radio Sales, P.O. Box 1105, Lima, OH 45802; fairadio@wcoil.com or Surplus Sales of Nebraska, 1502 Jones St., Omaha, NE 68102; grinnell@surplussales.com.

Because the capacitor is the big variable (no pun intended), this month's BASIC listing allows you to use any particular capacitor values in the design of compact loop antennas. The other variables are your choice of loop material and size.

The program allows you to enter minimum and maximum capacitor values, conductor size, and loop diameter. The program then computes the inductance of the loop, its frequency of operation, its radiation resistance, its loss resistance (assuming it's made of copper), and its overall efficiency. The data is presented in tabular form, computed at five pF intervals between the minimum and maximum capacitances you entered.

At the bottom of the table is an option

to recompute for a different size loop. If you answer "Y"es, the program allows you to change only the loop diameter for a recomputation of the table. If you want to redo all parameters, answer "N"o to the option and "Y"es to the following option. Answering "N"o to both ends the program.

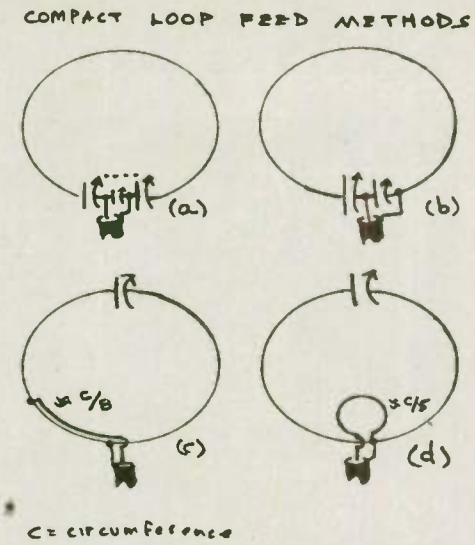
Lines through 60 are self explanatory. Line 70 computes the inductance of the loop and line 80 suggests the size of the coupling loop.

Line 100 prints the header line. You may want to play with the spacing of the column heads here and the ### marks in line 140 to get the columns to line up the way you like.

The variables J, K, L, M, and N in lines 110 through 130 represent frequency, loop area (in square meters), radiation resistance, conductor resistance, and loop efficiency, respectively. These values are for copper conductors only—if you use aluminum change the "3.12903E-06" in line 130 to 5.31935E-06 instead. The remainder of the program prints the table and provides the two recomputation options mentioned earlier.

As a check, if you were to run the program using capacitor inputs of 70,80, a conductor diameter of 1 inch and a loop diameter of 4.25 feet, you should see the following values. If not, recheck your program listing.

Use a .85 ft dia. coupling loop:



loop inductance is 3.266 uH.

Cap	Freq.	Rad Res	Loss Res	Eff.
70	10.53	0.0820	0.0431	65.5
75	10.17	0.0714	0.0424	62.7
80	9.85	0.0627	0.0417	60.1

If you've gotten this far, building the loop is as simple as following the diagrams.

For more information check out the "Small High Efficiency Loop Antennas..." section in the ARRL Antenna Book. Ted Hart, W5QJR, provided the information for the section, which has a lot of practical information and operational hints to pass along.

Hart has also authored "The Loop," a book on his experiments and experiences with loop antennas. The book is available in a soft-cover version for $16.95, a diskette version for $14.95, and as a computer download for $12.95. See www.antennex.com/Sshack/loopbk.htm for details.

Another loop design appeared in the May 1994 issue of *QST*. Robert Capon, WA3ULH, shows how to make a 2'8" diameter loop with a Ten-Tec 2-100 pF variable capacitor that covers the Ham bands between 10 and 25 MHz. It is Capon's idea to feed these antennas with the small coupling loop.

There's also a section on compact loops in the RSGB book, HF Antenna Collection. And, of course, the original *QST* article of March 1968 makes interesting reading from the historical standpoint.

There you have it. There's no reason you can't start designing a compact loop right away, using junk box and scrap heap parts. Even if you don't have copper pipe, you can experiment with other loop materials, such as aluminum tubing or even RG-8 coax. — Build and enjoy. And remember, as fellow amateur Al LaPlaca, W2WW, likes to say, Amateur Radio is a Contact Sport.

HANDI-HAMS Y2K

Patrick Tice, WAØTDA

Y2K this, Y2K that! Are you as tired of hearing about Y2K as I am? The popular media have hyped the disaster potential of the computer date changeover so much that people are beginning to tune out. Hams, for the most part, are practical sorts who know that if problems do surface, they will be found and corrected. Perhaps Amateur Radio can help in the meantime, but in any case someone will finally be able to see the problem and work toward a fix.

I suppose this attitude comes from working on equipment with intermittent problems, as in, "If only this darned rig would fail completely, so I would know what to fix!"

Nothing will stop the calendar from rolling over on December 31st, so the best we can do is fix what we know needs fixing, and be ready for whatever shows up to greet us in 2000.

At HANDI-HAMS, we have been methodically working our way through our member database, correcting potential errors in dates of birth, and Courage Center, our parent organization, is switching from a mainframe computer system to a PC-based system with network servers. We expect no problems, but doggoned if we didn't take the precaution of getting a complete data dump and dropping it into an Excel file. Not that I don't trust the gee-whiz technology, but you never know, do you?

So we don't expect any disruption of services. Everything may not be perfect on January 3rd, the first Monday in 2000, but we have workarounds in place. We even have HANDI-HAM Y2K baseball caps ready for the occasion, complete with the HANDI-HAM logo, and guaranteed to be Y2K compliant!

Bob Beach, W8LCZ, seen here acting as a telephone pole, volunteers at HANDI-HAM Radio Camps and serves on our Advisory Board. I promise, and so does Bob, that most of our volunteer activities will be more challenging than this! (But think of the megabytes of information slipping through Bob's fingers in this photo!)

Y2K

The dawn of a new millennium does mean more than potential computer problems. If only things could be that simple! It also means that we are looking closely at the direction Amateur Radio is taking, and what services we can, and should, offer to our members. In fact, we are even asking ourselves who should be members of HANDI-HAMS. Does the simple fact that a person has a physical disability qualify him/her for membership? Should we continue to teach Morse code as we always have, or should we emphasize something else? What about computing and the Internet? Can those things take the place of Ham radio for some functions but not others, and if so, what do we tell our members? Maybe computing and radio are merging in important ways that we cannot ignore. If that is the case, how do we teach our members about the new technology, or even decide what parts of the new technology are right for them? Who will volunteer to do this work? HANDI-HAMS, like so many other organizations in Amateur Radio, is volunteer-driven, and the average age of our volunteers is climbing steadily. Will there be any new volunteers to read books onto tape for the blind, or scan print material into computer text files for blind screenreading programs? What will Amateur Radio Restructuring mean for the Amateur Service and the Courage HANDI-HAM System?

These are questions that we are either addressing now or in the first few months of the New Year, and we want you to help us. Volunteers like Bob Beach, W8LCZ, will have direct input at Advisory Board meetings, but you can be heard too! If you have comments about how we should serve people with disabilities, let us know by either dropping us a line or e-mail. Please be sure to send written comments only — telephone comments cannot be transcribed and will be lost. This is your opportunity to let us know whom you think we should serve, and what services we should offer. I like to get mail, so send it to my attention!

Best 73, Patrick W. Tice, WAØTDA, Courage HANDI-HAM System, 3915 Golden Valley Road, Golden Valley, MN 55422; handiham@mtn.org.

AMSAT symposium set

Recent and future development in Amateur Radio satellites will be presented during AMSAT-NA's 17th Space Symposium and AMSAT-NA Annual Meeting 08-11 October in San Diego, California. AMSAT-NA also will sponsor an Amateur Satellite Workshop for Colleges and Universities Thursday, 07 October in San Diego, aimed at colleges and universities proposing to use the radio spectrum for their small satellite projects. More information on the AMSAT Symposium is available by e-mail from Duane Naugle, KO6BT, at: ko6bt@amsat.org. For more information on AMSAT-NA, visit http://www.amsat.org or call 301/589-6062. — *ARRL Letter*

Visit Your Local RADIO CLUB

ARIZONA

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/bcorski/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. 9/00

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

Golden Triangle Amateur Radio Club. P.O. Box 1335, Wildomar, CA 92595. Meets 4th Mon./monthly, 7 p.m., Beverly Health Care, 24100 Monroe Ave., Murrieta, CA 92562. Rptr: KE6UES 146.805(-) PL 100. Info: Norb Dean, AD6F, (909) 767-0449. E-mail: norbjudy@pe.net 8/00

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

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

Sacramento Amateur Radio Club. Meets 2nd Wed./monthly, 7 p.m. Sac. Blood Ctr., 32nd St. & Stockton Blvd., Sacramento, CA. Info net, noon on rptr. W6AK/R 146.91(-). S. Cates, KC6TEV, (916) 391-7341 or L. 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. Info: 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

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

For information on how to get your club listed in *"Visit Your Local Radio Club,"* plus receive many other benefits, write to: Club Liaison, *Worldradio* 2120 28th St. • Sacramento, CA 95818

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. 9/00

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: 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

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. 8/00

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

Westside Amateur Radio Club. P.O. Box 11092, Marina del Rey, CA 90295. Meets 4th Tues./monthly, 7:30 p.m., W. Dist. R. C. Bldg., 11355 Ohio Ave., W. L.A., CA (VA Cntr. grounds). Net Tues., 8 p.m. 146.67(-) except mtg. night. Website: http://www.qsl.net/wa6rc Voice Mail: (310) 478-7555 9/00

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. 9/00

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 rm 1107, 325 So. Broadway, Boulder, CO. Talk-in:146.70(-). Info: (303) 380-6540, e-mail: BARC5O@arrl.net or www.thisistrue.com/barc.html 8/00

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, W4QT. 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., New Echota Methodist Church, 488 Red Bud Rd., 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. 8/00

HAWAII

Big Island Amateur Radio Club. P.O. Box 1938, Hilo HI 96721 Meets 2nd Sat./monthly, 2 p.m., Keaau Community Ctr., behind Fire Station on Old Volcano Rd., Keaau. Talk-in on 146.88(-). Lunch, 11 a.m. Fridays, Hilo Hawaiian Hotel - Queen's Court Restaurant. 9/00

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/ 8/00

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

Peoria Area Amateur Radio Club, (PAARC). P.O. Box 3508, Peoria, IL 61612-3508. Meets 2nd Fri./monthly, Red Cross Chapter House, 311 W. John Gwynn Jr. Ave., Peoria, IL. Voice mail: (309) 692-3378. Rptrs: 147.075(+) & 146.85(-). 8/00

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.wOsv.org/ 3/00

MISSISSIPPI

Jackson Amateur Radio Club, Inc. Meets 3rd Thurs./monthly, 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: nopr@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, NW7Q, (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

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

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: WOQOT/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. 145.05. 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

Ft. Tuthill, Arizona, Hamfest — what a treat!

This past July I made the long drive to the Ft. Tuthill Hamfest near Flagstaff, Arizona. Wow! This was my second time there, and I had a great time! The equipment for sale was plentiful, the guest speakers and forums were very informative and the people were very friendly. However, I couldn't help but notice one thing: all the youth! I must have counted around 40 young people who were walking around the flea market area. I don't know whether they were all licensed amateurs or not, but it surely was a nice sight!

Among the many who were there, I was able to speak with the folks from W7ASC, an Amateur Radio club station that's an exhibit at the Arizona Science Center in Phoenix. This group makes a great effort to introduce visitors, especially young visitors, to our exciting hobby, and they have done a great job! For more information, please go to their website at http://www.w7asc.org. Kudos, W7ASC!

I also had the pleasure of meeting Jamie Johnson, KC7MQY. Jamie is a 19 year-old Technician No-Code with aspirations of upgrading in the future. She is a third-year math major at Arizona State University, and is very enthusiastic about Amateur Radio. Ft. Tuthill is infamous for drawing many QRP groups, and featuring many QRP kits. Jamie received an Embedded Research TiCK kit, which is an electronic CW keyer device, and completely built it — on site! Sounds like an avid CW operator is in the works! And she offers this piece of advice to others: "Do not be afraid to try something new or that which seems too difficult. Chances are that even if you don't like it, you will learn appreciation for something else."

This kind of event is one that I look forward to because of the number of youth and youth groups present. I would like to thank the folks who put on this great annual Hamfest, and encourage all young amateurs to remain active in Amateur Radio — even by participating in a Hamfest. I've said it many times before, and will say it again: We are the only people in this world who will determine whether Amateur Radio will fly high or crash into the ground in the future. Keep up your great work!

Jamboree On the Air '99!

Attention all young amateurs! Are you interested in a weekend on-the-air event that was created particularly for youth involved or interested in Amateur Radio? Well, such an activity is due to happen shortly! The 1999 annual Jamboree On the Air (JOTA) takes place 16-17 October 1999, and you can be a part of the fun along with over 400,000 other young ones!

Jamboree On the Air was created in 1958 to allow Scouts and Scouters of all kinds to talk to one another through Amateur Radio. Although this is an event sponsored by the Boy Scouts of America and other Scouting organizations, its primary goal is to give every young person a chance to experience Amateur Radio up close and personal, whether they are involved in Scouting or not!

Unlicensed Scouts, Scouters and other youth may operate during this event as third-party operators, which means a licensed amateur must supervise all activities. The event begins Saturday at 0001 hours local time and ends Sunday at 2359 hours. Although these are the official JOTA times, participants are reminded that they can continue operating on the air anytime before or after this event if they wish. Please bear in mind that this is not a contest, although you will hear many participants calling "CQ JOTA!" The calling frequencies for JOTA are:

Band	Voice	CW
80 Meters	3.740/3.940 MHz	3.590 MHz
40 Meters	7.090/7.290-Region 2	7.030 MHz
20 Meters	14.290 MHz	14.070 MHz
17 Meters	18.140 MHz	18.080 MHz
15 Meters	21.360 MHz	21.140 MHz
12 Meters	24.960 MHz	24.910 MHz
10 Meters	28.990 MHz	28.190 MHz
	(Novice: 28.350 MHz)	

Please note that these frequencies are to be used ONLY to initiate a contact with someone else. Once this is done, please be courteous and move to a clear frequency to have your QSO.

If you are interested in participating in this event, either ask a local Amateur Radio club to help you get on the air, or ask a friendly amateur to use his or her station! Should you need more information about this excellent event, please go to the ARRL's Jamboree On the Air website at http://www.arrl.org/ead/jota.html. Have fun, and see you on the air!

Time to move on

I have been writing the Youth Forum column for ***Worldradio*** magazine since November 1996, and have been having the greatest time! However, as a 20-year-old (as of this month) electrical engineering Junior at the University of New Mexico, I feel it is time for me to move on and let another younger person capture this great experience, and be a representative to the youth of Amateur Radio. Although this was a hard decision for me to make, I think it is a wise one for a few reasons. First of all, a new Youth Forum columnist will have new ideas and new opinions about our great hobby, and feature stories I might have never thought of. Second, because of his or her age, a younger columnist will be able to represent the youth aspect of Amateur Radio better than I am able to at my age now.

I would like to offer my position as the Youth Forum columnist to any interested young Amateur Radio operator. Here are some things to consider if you are interested:

1. Although this column appears only four times a year in ***Worldradio*** magazine, you need to think of this position as a job. Deadlines need to be met, and columns should interest an audience of mainly young Amateur Radio operators.

2. You must have fun! Being the Youth Forum columnist has taught me many things about the future of Amateur Radio — the youth. I have had such a great experience writing about this hobby, and other people, and the ***Worldradio*** staff has been a great bunch of people.

Please contact ***Worldradio*** magazine or me if you are interested in taking this excellent position! I will be absolutely happy to give you a hand if you have questions or concerns about writing Youth Forum columns — as much as you need. I will also be happy to continue writing these columns until somebody steps forward to take this position.

Again, it has been a great experience, and I am very happy I have been a part of Amateur Radio in this way. I encourage you to think about writing about the youth of Amateur Radio for ***Worldradio*** magazine! You won't regret it, and will have a great time.

Thank you everybody! Continue to stay on the air, and keep up the hard work at school. Don't forget about JOTA, and keep in touch!

— Brian Mileshosky, N5ZGT, can be reached at: 1021 Dakota S.E., Albuquerque, NM 87108, or via e-mail: n5zgt@swcp.com, and the web: www.swcp.com/~n5zgt

Oak Ridge Convention sets high standard

Chuck Imsande, W6YLJ
10-10 19636

10-10 Convention

The 7th Biennial 10-10 Convention went off in Oak Ridge, TN, 11-13 June 1999, as scheduled with 226 attendees. The facilities were excellent, the attendees were friendly, and the banquet food was good and plenty. The Club station, W6OI, was on the air from early each day to late each night. A number of stations were worked each day in addition to the 10-10 Convention Net, which most of the attendees checked into. The assembly hall, the general meeting place for all to congregate, contained more Chapter Tables than your writer has ever seen at a 10-10 Convention. The Chapters were busy signing up new members and giving out Convention upgrades. The Chapters were also collecting Scholarship Donations. An informal contest between Chapters, to see which Chapter could collect the most donations, was won by the Electric City Chapter with not only the most donations but also the largest sum of donations. A plaque has been sent to the Electric City Chapter for "winning the Scholarship Donation contest."

The banquet was a sellout with 203 attendees — three more than the maximum number expected. Hugh Sullivan, WA4QZU #23166, was the Master of Ceremonies and did his excellent job in handling the festivities. President Tom Henderson, K4CIH #33233, surprised me with his announcement that the 1999 President's Award was being awarded to Chuck Imsande, W6YLJ #19636. This may be the first time that I was absolutely without words, but I recovered enough to thank the President.

Col. Ed Redwine, K5ERJ #11843, provided the banquet attendees with his humor and auction talent in "selling" a number of items, which provided the 10-10 treasury with a goodly amount of funds. The bidding was hot and heavy for several of the items and all present had fun with Col. Ed's auctioning skills.

Board of Directors meeting

The 10-10 BOD held their annual meeting at the Convention in Oak Ridge, TN 11 June 1999. All officers and directors were present except Directors Tom Michaelson, NØMT #55241 and Dick Russell, K6SSD #62500. Also present as guests of the Board were Gerry Gross, WA6POZ #21274, 10-10 Data Manager, L.B. Cebik, W4RNL #41159, 10-10 Internet Coordinator, Hugh Sullivan WA4QZU #23166, President's Advisory Board Member, and the new Editor of the *10-10 International News*, Steve Rasmussen, KBØWHY #68684.

After a moment of silence in remembrance of our silent keys, the president called for the annual reports of all officers and committee chairmen. The president reported that the Contest Committee had completed its work and has been disbanded, and that beginning with the first QSO Party in year 2000, we will revert back to the old rules of two points for a contact with a 10-10 member and one point for non-member 10-10 contacts. A motion was made and passed that dupe sheet requirements be changed to state that a dupe sheet would be required only if fifty (50) or more contacts are listed in the log. These rule changes will affect all members worldwide. The Scholarship Manager reported that the donations received during the past year covered the entire expense for the four (4) 10-10-funded $1000 scholarships. The President announced that with the resignation of Director Bob Ryan, K6YVG #18022, he was appointing Brad Kimble, KØDBK #55192, to serve the remainder of Bob Ryan's term.

A special thanks to Jim Whittlesey, KC4HW #57051, and his entire staff of hard-working volunteers for the excellent convention. It was well organized, well attended and a good time was had by all due to their never-ending effort. A big thank you and, believe me, it will be difficult to outdo the 1999 Oak Ridge, TN 10-10 Convention.

Treasurer Keith Schlottman, KR7RK #63324, made a motion that we increase from our current four annual $1000 scholarships to five annual $1000 scholarships. The motion passed and beginning in the year 2000, 10-10 will offer five $1000 scholarships. Information on how you can submit your relative's or friend's name to be considered for one of these five scholarships will be published in this column and in the *10-10 News* later in the year. You can become a 10-10 Scholarship Volunteer by sending your donation to Morrie

Goldman, W6EHM #4189, Scholarship Manager, at: 21518 Marjorie Ave., Torrance, CA 90503-6814. You will receive an attractive certificate for your donation. Make your check payable to the 10-10 Scholarship Fund. Your donation, no matter how small, will help 10-10 maintain this worthwhile cause.

The Board considered a proposal to present to the membership a challenge to bring in two thousand new members in the year 2000, This would be called "2K in 2K." The proposal was referred to the Membership Committee to work out the details and the type of awards that could be offered to members sponsoring the most new members. It was also proposed that the year 2000 offered another challenge in that a one-year QSO Party, to be called the "Y2K QSO Party," be offered to the membership. The idea is to make 2000 contacts in the year 2000. Both 10-10 members and non 10-10 members would count as acceptable contacts. Details and rules for this interesting and challenging QSO Party will be released in the October issue of the *10-10 News* and in this column in the December issue. Watch for additional details and be ready to start collecting your 2000 10-meter contacts 01 January 2000. As promised, there are many interesting things scheduled to happen in 10-10 in the new millennium.

New DX members

Carol Hugentober, K8DHK #29588, DX Membership Manager, reports the latest new members from the DX world to become 10-10 members are: VE9BW #70803, VE2DYC #70804, VE7SSJ #70805, VK3LEE #70806, and DK1EAW #70807. We welcome these new DX members into the 10-10 Net.

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 9x12 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 eight-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, PMB142, 643 N. 98th Street, 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.

— Chuck Imsande, W6YLJ #19636, 20815 Desert Sands Drive, Sun City AZ 85375-5443; e-mail: w6ylj@arrl.net

Book Review

NØUJR and His Friends by Greg Trook

For many, many years, ***Worldradio*** featured cartoons by one of the best cartoonists around, Bob Beasley, K6BJH. Bob poked fun at this wonderful hobby of ours and conveyed a curious sense of humor in his excellent cartoons. But with Bob's retirement his pool of cartoons in our file started started to drain rapidly. As we approached the end of his original cartoons, another rising star stepped up to the plate to fill the void.

Greg Trook, NØUJR, has had his work appear in numerous newsletters and magazines. His sense of humor is a welcome addition to the ***Worldradio*** family. Some of Greg's artwork has been appearing in ***Worldradio*** since the beginning of the year.

A new 112-page compilation of his cartoons is now available. An insight of what's to come is in his disclaimer — "NØUJR is a cartoon book. It is not intended for the 'humor impaired'. It may contain explicitly silly material. Do not eat. Do not read this book while driving, or operating heavy machinery."

Need I say more? Greg's cartoons poke fun at every aspect of this hobby, and his book is a welcome addition to my bookshelf. I highly recommend this witty and downright funny look at Amateur Radio.

NØUJR and his friends can be ordered from Greg Trook, NØUJR, 5111 Walker Ave., Lincoln, NE 68504. The price of the book is $12.95, plus $3 S&H.

For more information, see Greg's webpage at: http://incolor.inebraska.com/n0ujr. *— Rick McCusker, WF6O*

Straight key, "bug" or iambic — what's the best for a beginner?

Nancy Kott, WZ8C

A reporter from the *New York Times* called me the other day. Her editor had asked her to write an article about people who are using Morse code in this "Age of the Internet." I was happy to oblige and regaled her with tales of traffic nets, social ragchewing nets, working for wallpaper, how much fun it is to use a bug, until I noticed a silence on the other end of the phone. I asked if we had lost the connection, and she replied that she was there, but did not understand a word I had said. Playing with a bug while earning wallpaper? I knew I should restart the conversation with the basics.

In my enthusiasm, I neglected to realize that Amateur Radio is similar to other hobbies. It has specialized gear and slang that is foreign to people who are new to the hobby. This was reinforced to me when I received a letter from Michael White, KM5LS.

Michael wrote, "Thank you for your column in ***Worldradio***; it is one of the first I read when the magazine arrives, which leads me to a confession: although I have made it to Advanced class, I know nothing of CW except I had to pass the 13 wpm to get where I am. However, I am looking for new challenges and feel CW would be a good one. But as I said, I know nothing.

"So would you answer a couple of dumb sounding questions? What is a keyer? I read and hear about them but what are they and what do they do? What kind of key would be the easiest to use for a beginning CW operator? Where can I go to get practice and not be terribly embarrassed since my code speed is about 3-5 wpm at this point. Thanks in advance for your assistance."

Of course, there is no such thing as a dumb question. Although this amateur was brave enough to write and ask, there must be others who are wondering in silence. In the "good old days" experienced amateurs, known affectionately as Elmers, were plentiful. These days, if your local club is anything like the one in my county, you would be hard pressed to find someone who has a shack with a CW setup or a keyer! Consequently, we have a generation of new amateurs entering the hobby with a minimum of experience. We assume that because they passed the licensing test they know all the terms and gadgets that are so common to us Old-timers. When questions are asked, we need to educate and inspire.

When I was chatting with that reporter, I needed to start with the basics when talking about Amateur Radio. Maybe some of the no-code techs you know ARE no-code because no one has taken the time to show them what CW is all about. Maybe the new Hams are too intimidated to ask about the different types of keys and accessories. When the conversation turns to CW topics, new amateurs stand around nodding their heads sagely, all the while wondering what the heck is going on. I know that is what I did when I first got my license!

Let's start with the basics about keys and keyers. I think everyone should learn to send with a straight key. When I was trying to describe a straight key to the reporter, she said, "Oh, is that the one that looks like a stapler?" Exactly! In fact, I do have a novelty stapler that is fashioned as a straight key. Straight keys are economical to buy and easy to use and control. It also lets you get the "feel" of the code. Code is a very rhythmic and musical mode, and using a straight key to pound out the dots and dashes allows you to get a sense of the essential timing and rhythm. I think that tapping out the code also reinforces the code in your mind, which is very important when you are learning and acquiring "instant recognition." Using a straight key helps you avoid the trap of counting your dots and dashes, which can be a problem when you use an iambic key.

Bugs and iambic keys are two other types of Morse sending devices. Amateurs who are more traditional and appreciate the historical aspects of Amateur Radio tend to gravitate toward bugs, which was the type of key used most often by railroad and professional telegraphers. With a bug, there is a single lever which you push from side to side, instead of up and down as with a straight key. The dots are made by pushing the lever the one direction and the dashes are made pushing the lever in the opposite direction. You make the dashes manually, but the dits are made automatically by the momentum of a pendulum on the end of the key lever. It's called semi-automatic. As with a straight key, you don't need any extra equipment to use a bug.

Iambics have advantages. They are very easy on the wrist, since you squeeze two paddles together instead of using your wrist. This allows you to send quite quickly, as fast as you can move your fingers! Pressing one paddle will automatically make a series of dots and the other paddle will automatically make a series of dashes. As long as you press the paddle, a string of dots or dashes will be heard. Alternating dots and dashes are made by squeezing both paddles together at the same time. The longer you squeeze the paddles together, the longer the dot-dash string.

However, to use an iambic paddle, you need to have an additional piece of equipment called a keyer. It is the keyer, not the paddles themselves, that creates these dot, dash, and dot-dash sequences. These keyers also allow you to regulate the speed and spacing of the dots and dashes. Some upscale radios have built-in keyers, but often you need to buy it as a separate piece of gear.

Some keyers are quite sophisticated with memories and buttons for replaying. You can program in sentences, which then can be sent by just pressing a button on the keyer. Contesters use keyers that have sequential number responses, so they don't have to manually send the contest responses, it is done at the touch of a button. As you can imagine, this speeds things up considerably and enables you to get a higher score than when sending manually.

The confusion comes in when the terms are used interchangeably, and often technically incorrectly. All bugs are semi-automatic, but not all semi-automatics are bugs — there are also sideswipers also known as cooties! And the term keyer is often used when the person really is talking about an iambic key and keyer combination. It's just a question of knowing your way around the lingo!

As far as practicing, the Novice bands are a good place to start. If getting on the air is too big of a step for you, check out your local Ham club. You may be fortunate enough to have a good local club where you may find someone to have practice sessions with you. Most CW folks would be very happy to practice with an eager new amateur! Or start your own local practice group. You can get together at each other's homes and do practice tapes together or practice sending in roundtable fashion to each other off the air. I've heard of groups that have code practice over 2-meter repeaters.

The ARRL has eliminated some of the W1AW code practice transmissions, but they still offer them on a limited basis. Check the latest issue of *QST* for their schedule.

Some clubs, like FISTS, have code buddy programs, which pair up slower operators with more experienced operators for on the air practice.

There is no shortcut to getting up your speed. The "instant recognition" method I've written about in past columns is the best way I've heard of — and practice, practice and more practice!

Few aspects of Amateur Radio inspire us the way that Morse code does. As I sing along with the radio, I often change the lyrics of songs into lyrics with a CW theme. With apologies to Faith Hill, her song, "This Kiss," a song about kissing in the moonlight and in the rain, becomes "This Code," a song about sending code on Field Day in the moonlight and in the rain. Luckily, I'm alone in my car while singing this, so the men in the white coats haven't come for me with their straight jackets! The point I'm trying to make is that many poems have been written about Morse code. Irving F. Hazard, AA9QD, wrote The Legend of DX Joe, which I would like to share with you.

The legend of DX Joe

On the amateur bands
when there are curious fans
there are stories sometimes told,
of unique forays
and the good old days
where golden yarns unfold.

But of the tales that range
there are few as strange
as one some OPs know,
of a grand old man
an artisan
a Ham called "DX Joe."

With his old brass key
he'd chat endlessly
with Hams around the world,
'till he worked DX
in googolplex
while his autumn years unfurled.

And as his days grew dear
he told all who'd hear
that after he would go,
He'd work their pack
from a Heavenly shack
with a celestial radio.

"Don't bury me
without my key,"
he'd say with a big wide grin,
"and I'll pound that brass
while eternity lasts,
then do it all again."

So when he up-and-died
and his friends all sighed
while in a box he lay,
his old brass key
was put there for he
when they carried him away.

Now when the coffee's brewed
and the rag is chewed
and he's mentioned casually,
the OPs tell
and cast a spell
about a restless silent key.

For they claim somewhere
in the great out-there
where the radio waves all go,
there are symphonies
played by Silent-Keys
with a Ham called DX Joe.

And late at night
when the propagation's right
and the moon has a misty glow,
like the chirping of a bird
CW can be heard
with a call sign they all know.

If you have CW poems or anything you'd like to share for a future column, please write to me. I would love to hear from you. — *Nancy Kott, WZ8C, can be reached at: P.O. Box 47, Hadley, MI 48440-0047 or via email at: nancy@tir.com.*

The VE3DNL Frequency Marker-Generator

Remarkable, isn't it, how the simplest of pleasures can make a QRPer's operating experience all the more meaningful?

If you've been in the game for any length of time, you know what I'm talking about. And that notion really hit home recently with the Fort Smith (Arkansas) QRP Group's first kit: the VE3DNL Frequency Marker-Generator.

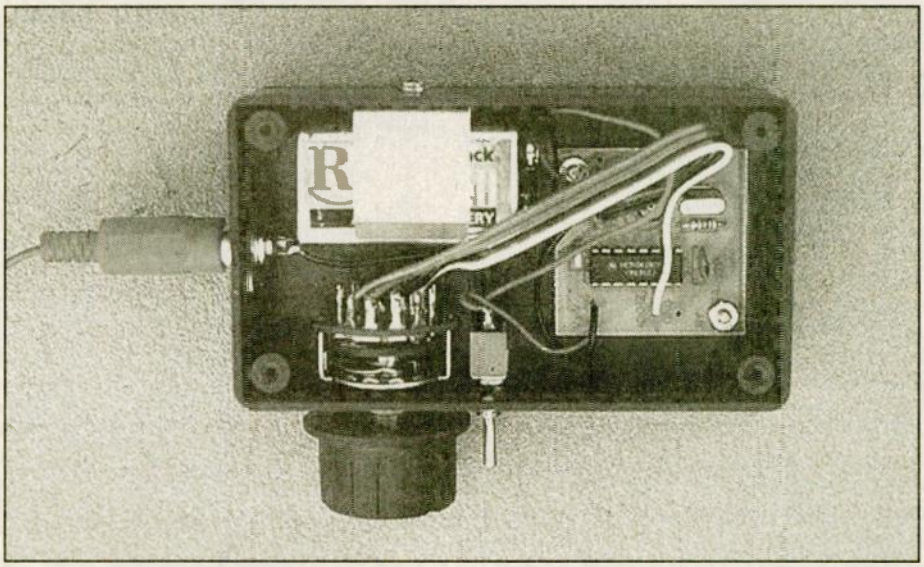
For an operator who was never too concerned with knowing my exact operating frequency, I've certainly done a 180-degree turnabout after building this great little unit.

The FSQG gets high marks for offering low power enthusiasts a top quality kit for just $12 that is a fantastic station accessory to boot.

On a printed circuit board about half the size of a credit card, the group has duplicated a simple circuit designed by Glen Leinweber, VE3DNL, that generates marking signals on a variety of frequencies that are extremely useful to anyone with an uncalibrated transceiver. In the QRP game, that's a whole bunch of people!

Most of the older, classic QRP transceiver kits, such as the NorCal-40, the Small Wonders SWL series, and Oak Hills Research OHR-100, -400, and -500, call for the operator to divine from an analog dial what frequency they've landed upon.

Now, with the push of a button or flip of the switch, the QRPer using the 'DNL marker-generator can calibrate the dial at 5, 10, 20 or 40 kHz intervals. For us guys who up to now have had to settle for merely knowing that we were "somewhere around 7.040 MHz," this kit opens up a whole new world. A few days with this accessory in the shack has turned me into a frequency-identifying fanatic.



Fort Smith QRP Group's "VE3DNL Frequency Marker-Generator" kit is a great addition to the QRPer's shack.

The VE3DNL Frequency Marker-Generator kit comes from the FSQG complete with a single-sided printed circuit board, a 5.120 MHz crystal, a trimmer capacitor, two fixed capacitors, a resistor, 9-volt battery clip lead, and an MC14060BCP 16-pin chip which serves as an oscillator/binary divider.

A comprehensive instruction sheet briefly describes the circuit's theory of operation: "If we use a crystal with a series resonant frequency of 5.12 MHz and divide it by 512 we get a frequency of 10 KHz; division by 1024 yields 5 kHz, etc." That's where the MC14060BCP is called into action.

With the 'DNL frequency-marker the builder can choose any one of four outputs (5, 10, 20, 40 kHz), or with the addition of a simple single-pole, four throw switch select any one of them at any given time.

"Since these outputs are nearly square waves there are a large number of harmonics present up to approximately 30 MHz," the manual says, "and these are used as 'markers' that we can hear in a receiver."

Some builders have reported having the 'DNL frequency marker-generator up and running 10 minutes after opening the parts bag. It's THAT simple to build.

At KI6SN it took a bit longer, however — about 45-minutes, I'd say.

Opting to use a 16-pin socket to mount the chip turned out to be a mistake. For some reason still unknown to me, the little circuit just wouldn't mark or generate unless the MC14060BCP was soldered directly to the board. It took a good half hour to figure this out — thus the delay in lift-off. The kit does not come with a socket for the chip, so given my experience I wouldn't recommend using one unless it's of stellar quality.

Once the chip was firmly in place on the board, and 9 Volts applied to the circuit, the little wonder quickly came to life.

It's up to the builder to choose which of the marker-generator's outputs best suit the needs of his station. Once selected, simply attach a 6-inch insulated "antenna" wire to the board and you're in business.

Solder it to the 5 kHz output and you'll hear a tone at every 5 kHz across the band. On 40 Meters you'd hear markers at 7.000, 7.005, 7.010, 7.015 MHz, and so on. Choose the 10 kHz output and you'll hear them at 7.000, 7.010, 7.020 MHz, etc. The same drill applies to the 20- and 40-kHz outputs.

Each of these outputs held great appeal to me, so I added a small wafer switch (available at Radio Shack) to change the "antenna" from one output to the next.

At KI6SN, tuning across the band I can loudly hear the marker at the frequency I've selected with the switch, while the other outputs can be heard very weakly. This is extremely useful, for example, for zeroing in on the 40-meter QRP calling frequency: 7.040 MHz.

With the 'DNL frequency marker-generator I simply switch to the 40 kKHz output and tune my NorCal-40 until I hear a loud marker at about the middle of the transceiver's tuning range. I can then tune slightly above to hear the 5 kHz marker faintly at 7.045, and tune below to hear it at 7.035 MHz. I then know I'm ready for QRP action.

This kit is also great for generating a nice reference signal for peaking the receiver section of QRP transceivers. You can attenuate the marker signal by simply moving it a few feet further from the radio you're aligning. Or you can remove the antenna from the marker-generator to achieve the same result.

Calibrating the VE3DNL Frequency Marker-Generator is as simple as this: Once all the parts are soldered on the PC board, the builder tunes a general coverage receiver to the time standard station WWV and zero beats the frequency marker-generator to it using the kit's board-mounted trimmer capacitor. That's all there is to it.

Here at KI6SN, the printed circuit board, an ON/OFF switch, a generator-selector wafer switch, 9-volt battery and an "antenna" output jack all fit nicely into a plastic experimenter's box 4.5 inches long, 2.5 inches wide and 1 inch high.

I keep mine at the operating position all the time. Checking my whereabouts on the band is just a switch flip away.

FSQG's Jay Bromley, W5JAY, has been one of the driving forces behind development of this great kit. "After a lot of personal expense went to the Fort Smith's hamfest QRP forum," he said, "Doug Hendricks (KI6DS), and Chuck Adams (W7QO) came up with the idea of producing a simple but useful kit to offset next year's (forum) expenses. Enter the VE3DNL Frequency Marker-Generator."

Bromley says proceeds from the 'DNL marker-generator kit "will go to make next year's forum a great one."

Not only would this kit be a great addition to just about any QRPer's shack, its low parts count, single-sided PC board and sheer simplicity make it a great project for the beginner.

The FSQG's VE3DNL Frequency Marker-Generator kit is $10, plus $2 shipping and handling. Make checks payable to Jay Bromley and send orders to: Jay Bromley, W5JAY, 9505 Bryn Mawr Circle, Fort Smith, AR 72908-9276.

If you're looking for a great station accessory or a beginner's kit to take the homebrew plunge, seriously consider the FSQG's 'DNL frequency marker-generator. Where simple pleasures are concerned, it fills the bill quite nicely. — *Richard Fisher, KI6SN, can be reached at: 1940 Wetherly Way, Riverside, CA 92506 or via e-mail: KI6SN@aol.com.*

Carl Luetzelschwab, K9LA

Pop quiz — what's your antipodal point?

For those somewhat new to Amateur Radio and propagation, the antipode of your QTH is the point exactly opposite on the other side of the Earth. In other words, a straight line from your QTH through the center of the Earth comes out the other side at your antipode.

So what's so great about the antipode? The answer is that it has some rather unique features. One feature is that any great circle path from your QTH arrives at your antipode. If you have a directional antenna, you could point it to the North, or to the East, or to the South, or to the West, and you'd be pointed in the right direction.

Another feature is that it's easy to remember how far it is to your antipode — it's half the circumference of the Earth. That puts it at about 20,000km. There is no short path or long path, as all the paths are the same length.

The big feature about the antipode, though, has to do with signal strength. Realizing that the energy from all directions could get to the same place in-phase. It was surmised very early on (by Marconi in 1922) that a signal-intensity increase may exist at the antipode. On the surface that sounds pretty plausible. I've even seen a plot in some papers and articles of the estimated antipodal focusing gain, with up to 30dB of signal enhancement very close to the antipode.

When you start thinking about the details, some doubts start creeping in. Like some paths will be in darkness and some will be in daylight, which means absorption is a big player. And the ionospheric variations (electron densities and height) over all the paths will be quite different, so signals may not even get to the antipode on some paths. And in a practical sense if directional antennas are used on the higher HF bands, we may not give all the paths the chance to add in-phase.

So is there signal enhancement at the antipode or not? Let's take a look at some actual results from a study specifically undertaken to answer this question.

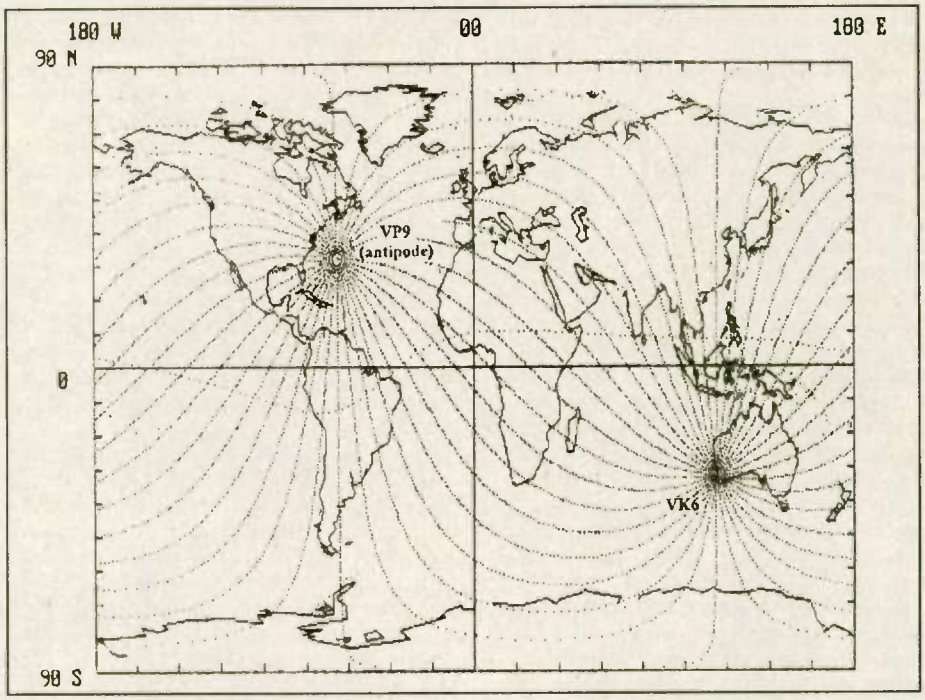


Fig. 1 Great Circle paths out of VK6

Back in 1960 and 1961, four researchers from the Syracuse University Research Corporation set up a receiving site in Bermuda to monitor signals from Western Australia on 5.05 MHz, 15.905 MHz, and 30.005MHz. Figure 1 shows great circle paths in 10 degree increments out of Western Australia (VK6), with Bermuda (VP9) at the VK6 antipode.

Indeed, all great circle paths out of VK6 end up at VP9 (the Great Circle paths appear curved on this map because this map is a rectangular projection of the spherical Earth — Great Circle paths over actual Earth are straight lines). The researchers also set up receiving sites in Rome, NY, and in Washington, DC for comparison — these locations are about 1700km from the antipode.

The transmitting antennas in VK6 were quarter-wave verticals, and the receiving antennas in VP9, in New York, and in Washington were also quarter-wave verticals. Verticals were chosen for their omnidirectional pattern — they radiate and receive in all directions. The transmitter power in VK6 on all three frequencies was 5kW.

The researchers did not present their results in terms of signal strength. They chose to present the results in terms of the duration of reception in hours at a given site. So we may not be able to say "antipodal focusing provides X dB of gain." All we may be able to say is "antipodal focusing results in hearing the signal longer," which may imply a greater signal strength.

Table 1 shows the results of the year 1960 on 15.905 MHz. The data is the number of hours of the day the VK6 signal was received. It's given at the 50 percentile level, meaning that on half the days

of the month this data occurred. The data clearly indicates the antipode received the signal the longest.

But the researchers had some concerns. One concern was that the longer reception time at VP9 could be due to the fact that there are only two Great Circle paths from VK6 to either New York or Washington (the short and long path), whereas there are an infinite amount of Great Circle paths from VK6 to VP9. With more paths available to VP9, the chances are greater that some signal can get there at different times during the day, making the reception duration longer — but not necessarily stronger.

Another concern raised by the researchers was the geographical location of the three receiving sites. Rome, NY, is surrounded by dirt, VP9 is surrounded by water, and the Washington, DC area is somewhere in between these two extremes. Also the short and long paths to New York and Washington go to high latitudes while many paths to VP9 stay at low latitudes. To try to sort all of this out, they plotted the number of reception occurrences for each 15-degree azimuthal sector. Indeed, water versus dirt and high latitudes versus low latitudes played an important part of the results. Thus, the results in Table 1 should be tempered somewhat with this knowledge.

1960, 15.905MHz

Month	Rome, NY	Washington, DC	VP9 (antipode)
Jan		5.5	24.0
Feb		8.5	23.5
Mar		7.5	21.0
Apr		12.0	17.0
May		10.5	15.0
Jun	3.5	7.5	12.0
Jul	5.5	9.0	9.0
Aug	7.5	8.0	9.0
Sep	8.0	4.0	6.5
Oct	3.0	10.0	7.5
Nov		6.0	14.5
Dec		3.5	24.0

Table 1 Duration of reception of VK6, in hours

In spite of all these issues, the researchers concluded that signal strengths were higher at the antipode. But they didn't give any signal strength data in their paper, so a guess is not even possible for the amount of antipodal focusing gain they saw.

Assuming their conclusion is valid, what's the practical implication of antipodal focusing? That ties back to the pop quiz at the beginning of the column. The antipode for those on the West Coast is about 500 miles southeast of Madagascar (prefix 5R), for those on the East Coast it's about 400 miles southwest of Perth, Australia, and for those in the Midwest it's between these two areas. A quick look at a map shows these three areas to be mostly water — no regular Ham population. So for all intents and purposes, antipodal focusing for those of us in the continental U.S. is a moot point.

Every once in a while a DXpedition occurs that puts its antipode in North America. For example, the antipode of Heard Island (the VKØIR DXpedition of January 1997) is VE5. That's getting close enough to home to say you should at least have an awareness of antipodal issues. And hopefully I've given you that awareness. Whether it actually happens is still open, at least in my mind.

Perhaps Kenneth Davies said it best about antipodal focusing in his book Ionospheric Radio (1990): "Because of the large geographic variations in ionospheric structure, such focusing does not appear to be of great practical importance." Any differing opinions out there? Or more information? — *Carl Luetzelschwab, K9LA, can be reached at: 1227 Pion Rd., Ft. Wayne, IN 46845 or you can e-mail him at: k9la@gte.net.*

The VersaKeyer

A one-evening project based upon the Wilderness Radio KC1 Keyer kit

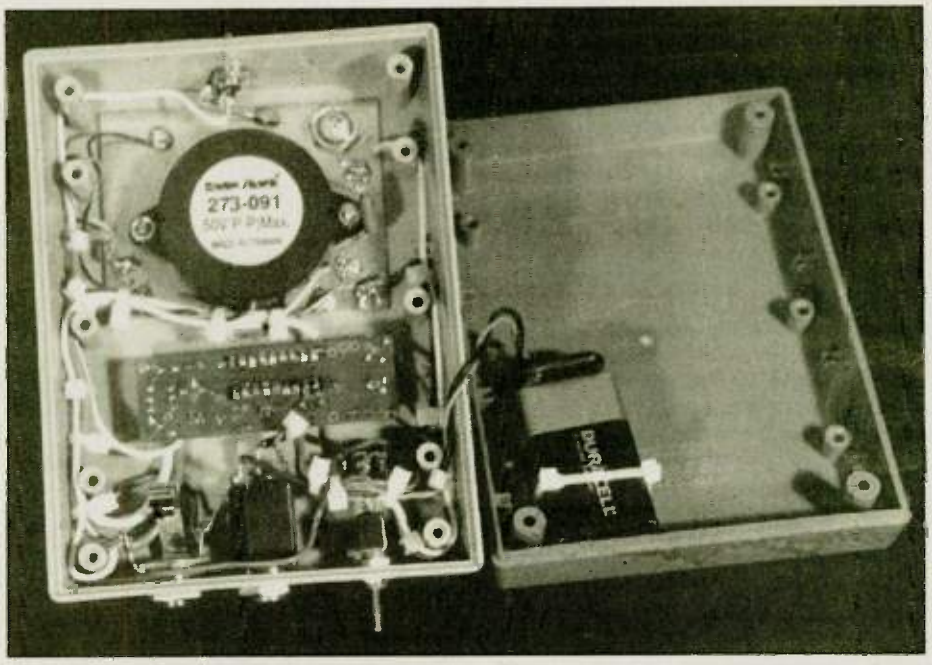
Dave Evison, W7DE

Forty years ago, if someone predicted that in my mid-sixties I'd get hooked on CW, I would have laughed, but it happened and I am! So here I am, an old guy, with a hearing impairment and a lousy fist, shopping around for an inexpensive keyer. Well, fortunately for me, Wayne Burdick, N6KR, designed a delightful little keyer a couple of years ago, and it was available in kit form from Wilderness Radio. This terrific little kit, called the KC1, was inexpensive; the assembled unit was very small (about the size of a stick of gum); and it delivered amazing performance: Iambic keyer, RF counter using Morse output, message memories, and very low power consumption (7 to 16 Volts @ 5mA).

Although the KC1 was designed to be incorporated within a QRP transceiver, with a few minor additions I transformed it into a terrific stand-alone, battery-operated keyer with some very impressive extras. In fact, I even added one of my own: it can also be used for code practice. Since it is very compact and battery-operated, you can slip it in your pocket, along with one of the great miniature paddles, such as the Paddlette, and train your fist whenever an opportunity arises. This article describes the little stand-alone unit I assembled utilizing the KC1, and I've dubbed it the VersaKeyer.

Preparing the enclosure

The original VersaKeyer was built into a small plastic box 4" X 5" X 2", but if you have good vision and steady hands, and would rather use an earphone, the whole unit could be built into a much smaller enclosure.



The insides of an assembled VersaKeyer

The KC1 manual includes a template for centerpunching the holes for the KC1 controls. The KC1 mounts to the front panel using the nuts on the programming switches. If you use a plastic enclosure, it is recommended that you use a small piece of pc board inside the box to provide a good ground for the BNC connector, to mount the divider for the RF counter input, to solder the coax braids, and make other ground connections. On the original VersaKeyer, the piezo speaker was mounted inside the enclosure, and the installation required only a 5/16" hole in the center for sound output. If your enclosure is too tight for that, simply mount the piezo speaker on the outside. Mount all parts except the KC1.

Wiring the VersaKeyer

Referring to Figure 1, note that the only modification to the KC1 itself is that C6 is changed from a .001µF to a 0.1µF. In addition, do not install ground jumpers at B_1 or B_2. Mount all parts on the KC1 pc board according to the KC1 Assembly Manual. Measure and prepare the interconnecting wires. Initially, make the wires significantly longer than they need to be (you can trim the excess later when connecting their bitter ends). It is also a good idea to leave enough excess length to allow you to form the interconnecting wires into bundles using small nylon ties. Use small, flexible coax cable for both the RF counter and piezo speaker wires. Solder and label all interconnecting wires to the KC1 pc board. Now mount the KC1 into the holes previously prepared. Complete the wiring by soldering the bitter ends of the wires to the appropriate switches, jacks, etc.

VersaKeyer with labels

Preliminary checkout

With any electronic construction project, it's a good idea to perform preliminary checks before applying power. Begin by making visual checks looking for solder bridges, splashes, etc. Visually

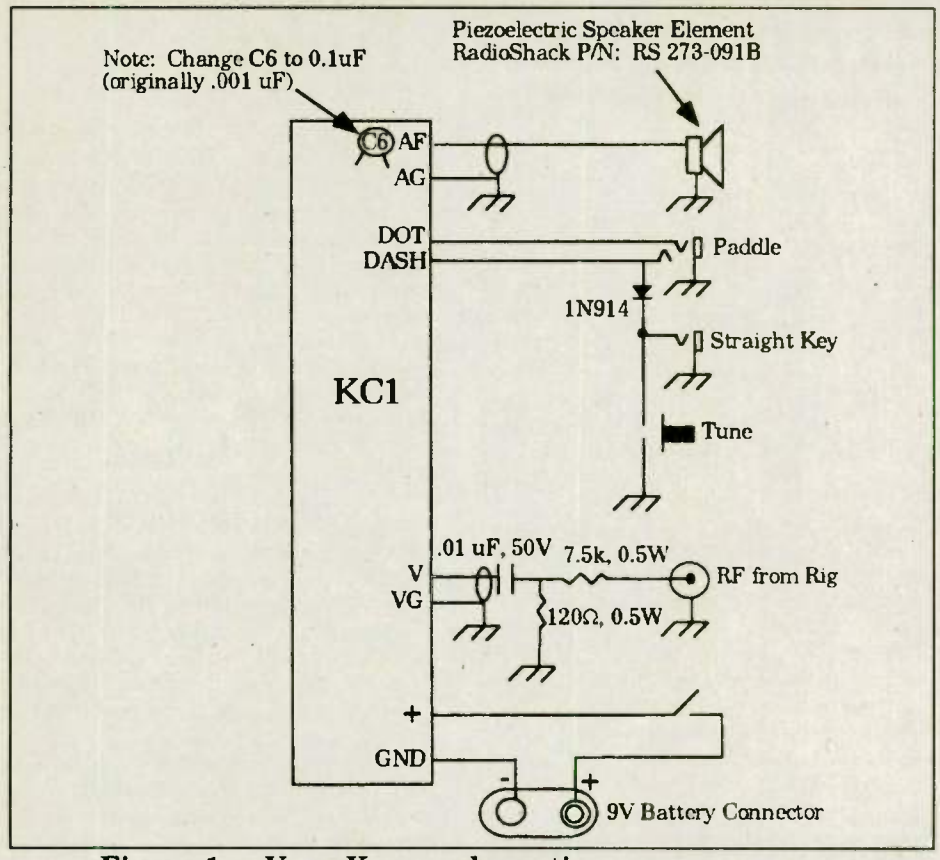


Figure 1 — VersaKeyer schematic

check the coax connections — especially the braids because stray strands can cause short circuits; then prior to connecting the battery, attach an ohmmeter to the battery connector's terminals, and turn the power switch to its ON position. The ohmmeter should indicate a near-infinite resistance.

Programming the KC1

The KC1 is basically a microcontroller — and it can perform wonderful tasks! But you must first program it. The instructions and data are input by the pushbutton switches and the paddle. The KC1 manual contains detailed programming instructions; read and follow them carefully. Don't try to shortcut the process; I did, and ended up having to call Wilderness Radio for tech support. Just remember: it's all in the manual. During the programming process, it will not be necessary to connect the VersaKeyer to a rig—the piezo speaker will provide the tones needed to indicate performance. Important: program the counter as instructed for direct conversion transceivers (o3A000).

Measuring frequency

The RF Counter input voltage divider was calculated to support voltage levels present in QRP operation from 0.5 to 5.0 Watts into 50 Ohms. If you desire to measure higher levels, the divider should be redesigned accordingly. The keyer function can be safely used with any amateur transmitter employing key to ground keying. Note that the VersaKeyer depicted in the photos employs a single BNC female connector. In operation, a BNC Tee adapter fitting is used, and connections are made as shown in Figure 2. Connected in this manner, a small sample of the RF voltage is taken and supplied to the KC1 frequency input, and the measured frequency is indicated in Morse characters heard through the piezo speaker.

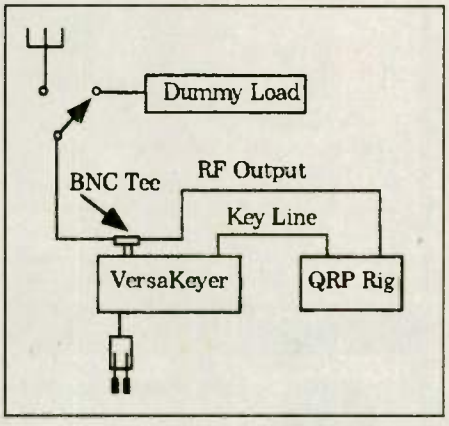


Figure 2 — Operational block diagram.

Operational checkout

With the VersaKeyer and transceiver connected as shown in Figure 2, turn both units ON. While depressing the Tune pushbutton on the VersaKeyer, momentarily push the Frequency pushbutton: the output frequency will be read out in Morse characters. Now check the operation of the paddle and set the speed control as desired.

Summary

Although the VersaKeyer is a simple construction project, it has many useful features. This is because of Wayne Burdick's clever design of the KC1. The VersaKeyer makes an excellent keyer for almost any amateur application, and operating from its internal 9-volt battery, — with miserly power consumption. It also eliminates a lot of clutter (such as another power cord or wall unit to be plugged in).

— Dave Evison, W7DE, can be reached at 153 Park Avenue, Palo Alto, CA 94306; w7de@aol.com.

RF electromagnetic fields

All amateur stations must be checked for compliance with the new FCC rules on human exposure to RF fields. A loyal reader of Kurt's column wrote in and asked, "What kind of dBs do you use for your antenna gain to make this calculation?" The answer: dBi. Not necessarily the advertised dBi but the real true dBi gain of the antenna in free space.

To check on this and the procedure to use to evaluate a station Kurt first turned to his ARRL *1999 Amateur Handbook*. Surprise! It doesn't tell you how. "The FCC tables were not available at the time of printing."

So Old Kurt fired up his Pentium II and went to the FCC site www.fcc.gov/oet/rfsafety to find out. The first thing he noticed was that the compliance bulletin and its supplement for Ham radio were dated mid-1977. One would think that 1977 information could be placed in the 1999 handbook. The editorial process in Newington must move quite slowly.

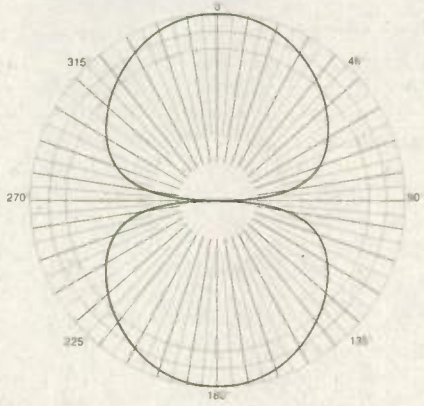
The bulletin

The next thing Weary Old Kurt noticed was the size of the FCC bulletin and its supplement. Nothing is simple anymore.

The Internal Revenue Service has a brochure explaining how to fill out the long form for income taxes. It is 65 pages long. The FCC Bulletin 65 "Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields" that every amateur is supposed to read is 79 pages long.

The IRS brochure for the short form for taxes is 30 pages long. I'm sure you enjoyed reading it last April. The FCC "E-Z short form" brochure "Additional Information for Amateur Radio Stations" is exactly twice as long. To quote *QST*: "This is another example of how the FCC has made the evaluation process as easy as possible for the Amateur Radio Service."

If you enjoyed paying your taxes this year Kurt is sure that you will be eager to evaluate your station for RF exposure. If you are lucky and the world comes to an end next 01 January with a Y2K implosion you won't have to do it. But if the world *does not* come to an end you have only until 01 September 2000 to finish your evaluation.



Actually, a lot of work by interested amateurs went into the Amateur Radio instructions (FCC Supplement "B"). There is good information in it to simplify your task but, unfortunately, the brochure is anything but user-friendly.

For example. All the tables and measurements are in metric. Kurt's opinion is that the U.S. should have gone full metric years ago. But we *haven't* gone metric, so if you need to find a metric tape measure to see how far your antenna is from your neighbor's house you are going to have a problem.

The alternative is to convert the metric to English and go from there. The FCC doesn't tell you how but Kurt will: Multiply meters by 3.28 to get feet. To go the other way multiply feet by .3 to get meters.

The procedure

So, what do you have to do? First check your PEP output power. If it is no more than 500 Watts on 160/80/40 Meters, 225 Watts on 20, 100 Watts on 15 or 50 Watts on 10/6/2 Meters you don't have to make an evaluation. Your mobile operations on any band don't have to be evaluated either.

If you run more power on any band than that listed above then what? First you have to find your average power. This is your PEP multiplied by a duty factor multiplied by a time average.

The duty factor is .2 for SSB, .5 if you use a heavy speech processor. For CW it is .5. For FM, RTTY, AFSK SSB, and carrier only it is 1.0.

The time average is the fraction of time you actually transmit in a six- minute period. Example: If you usually talk for two minutes then listen for two minutes then the FCC (who looks on the dark side of everything) says that you transmit for two, listen for two, then transmit for two minutes. Your time average is 2/3. Kurt would figure that you listen for two, transmit for two, then listen for two. Your time average would be 1/3. Unfortunately you have to use the FCC method.

The six-minute time average is for "controlled exposure", that is, in your own house where everyone knows that you transmit. You also have to make a 30-minute time average for "uncontrolled exposure," that is, for any place the general public may be. This includes your neighbor's houses and grounds.

So now you have a new set of average power levels for each band. Next you find your antenna gain for each band. Then you measure the distance from your antenna to the closest place a person may be to the antenna. Do this for the "controlled environment" and for the "uncontrolled environment."

The calculation

So you have all the facts you need. Now all you have to do is calculate the field

strength on each band at these distances and see if it is more than the FCC's "Maximum Permissible Exposure."

And what is the "Maximum Permissible Exposure?" Well, that depends. For the "controlled environment" it is 614 Volts/Meter from .3-3 MHz. From 3-30 MHz it is 1842 Volts/Meter divided by the frequency in MHz. And from 30-300 MHz it is 61.4 Volts/Meter. And, of course, it is different for the "uncontrolled environment." Apparently amateur operators and their immediate families are just like other people from .3-3 MHz but are less endangered by RF than other people at frequencies above 3 MHz. Kurt figures that they must have developed a tolerance for RF by being exposed so often. The FCC doesn't explain.

If you think that this is getting complicated you are right because it is getting very complicated. Fortunately the good old ARRL and some other interested Hams have come to the rescue with simplified calculation methods.

The easy way

If you have found your average power, antenna gain and distances, then Kurt suggests you visit www.cs.utexas.edu/users/kharker/rfsafety/. Here KM5FA has a "Amateur Radio RF Safety Calculator" that makes it easy to see if you are in compliance. You just put in your data (and the distance is in feet) and the calculator tells you if you are compliant. Easy. Kurt recommends it.

If you don't know your antenna gain, or if you suspect that the manufacturer provided an inflated figure, there is a handy table in January 1998 *QST*. You should read this helpful article. But, just in case you don't have it available, here are "typical" free space gains for some common antennas:

Antenna Gain	dBi
Quarter-wave vertical	1.0
Half-wave dipole	2.15
2-element Yagi	6.0
3-element Yagi	7.2
5-element Yagi	9.4
Triband Yagi 14 MHz	6.5
Triband Yagi 21 MHz	7.0
Triband Yagi 28 MHz	8.0

Easy way #2

FCC's supplement B (the 60-page document that you can download from their web site) has a number of handy tables produced by the ARRL and helpful Ham operators. They give exposure distances (in meters, of course) for each band, for different power levels and different antenna gains. You can interpolate between the listed figures if your power level or gain is different. There are tables for most common antenna types.

The ARRL tables list several exposure heights that look odd in metric but make more sense in English. Kurt has made this handy conversion table:

Meters	Feet	Object
1.8	6	Height of man
3.7	12	2nd floor level
4.6	15	Antenna height (160/80/40)
6.1	20	3rd floor level
9.1	30	Antenna height
18.3	60	Preferred antenna height

Kurt always figures an antenna should be a half wave or more up in the air for best results. Why the ARRL places the lower frequency (longer wavelength) antennas lower than the high frequency (shorter wavelength) antennas is not explained.

FCC worksheet

The FCC has provided a worksheet you can use. It appears to have been written by the same group that did the famous 1040 IRS instructions. For example: "Item 19. If the setup is a repeater station, skip over this item and go directly to item 20. Otherwise, proceed as follows:..."

This is heavy stuff. The worksheet instructions are eight pages long and the form you fill out is three pages. You go through all this for each band you operate on. Kurt suggests that you avoid this if possible.

Did you know that there is no conclusive connection between exposure to low level RF fields and any health effects in humans? So why does the FCC make us go through all this? Because the Congress told them to do it, that's why. Another triumph of ignorance over science!

Dave Goodwin, VE2ZP/VE9CB

E-mail your contest log

Over the last few years, more and more contest organizers have jumped on the Internet bandwagon and offered entrants a means to send their logs by electronic mail (e-mail). E-mail offers some obvious advantages to contest organizers and participants alike: it's cheap (if you already own an internet-capable computer), it's easy (if you are already using a computer for contest logging) and it can be very secure in that you can usually get an acknowledgement that your log was received in good order.

When you submit your contest entry the old-fashioned way, on paper, you normally have to include your log sheets, a dupe sheet listing the call signs of the stations you have worked on each band, a list of the multipliers for which you claim credit, and a summary sheet showing your calculated score and identifying your entry category. That can be one thick envelope you send to the organizers. As well, unless you send your log by registered or certified mail, you can't be certain that the organizers received it until the results appear in print.

Which files to e-mail?

Most contest logging software produces prodigious amounts of output. Echoing the requirements of paper logging, these packages produce beautifully-arranged logs, dupe sheets, multiplier checklists as well as summary sheets for you to sign and mail in. They also produce "nice-to-know" information, such as hour-by-hour breakdowns of your QSO rate, multipliers worked and total score. While all this is very interesting, most contest organizers have now settled on just a few files they require to process your contest entry.

The most important is the log file itself. Almost universally, organizers are looking for plain ASCII files detailing the date, time, call sign, exchange sent and received, multipliers and points claimed for each QSO. Almost all commercial logging software produces such a file. The ARRL has peculiar requirements for how this ASCII file is formatted, and software authors have made allowances for this.

Almost as important is the summary sheet. This sheet summarizes your claimed score, listing your total QSOs, QSO points, multipliers and claimed score. This sheet is also the place where you formally declare your entry category, something the organizers cannot divine

ARRL's e-mail solution

ARRL sponsors a large number of contests, from the major events, like the ARRL DX Contests and Sweepstakes, to quite small events like the 10 GHz-and-up cumulative contests. Initally, all mail to the ARRL Contest Department was addressed to contest@arrl.org. As simple as that was for participants, it made things difficult and confusing for ARRL's beleagered contest staff. Recently, the ARRL's new Contest manager, Dan Henderson, N1ND, came up with an elegant solution: separate e-mail addresses for each contest. Here's the list:

10GHZ@arrl.org	10 GHz and Up Contest
10Meter@arrl.org	10 Meter Contest
160Meter@arrl.org	160 Meter Contest
AugustUHF@arrl.org	August UHF Contest
DXCW@arrl.org	ARRL International DX CW Contest
DXPhone@arrl.org	ARRL International DX Phone Contest
EMEContest@arrl.org	International EME Contest
Fieldday@arrl.org	Field Day
IARUHF@arrl.org	IARU HF World Championships
JanuaryVHF@arrl.org	January VHF Sweepstakes
JuneVHF@arrl.org	June VHF QSO Party
RTTYRU@arrl.org	RTTY Round-up
SeptemberVHF@arrl.org	September VHF QSO Party
CWSS@arrl.org	November Sweepstakes CW Contest
SSPhone@arrl.org	November Sweepstakes Phone Contest
Straightkey@arrl.org	Straight Key Night

You might consider adding these to your address book right now.

from your log. You also put your name and address on that sheet, so that the organizers can tell where to send your certificate or plaque, if you are a winner. The summary sheet is also a plain ASCII file, and before you send it, you should edit it with an ASCII text editor to make sure it is correct.

E-mail your log as one message with attachments

This has become the standard for e-mail log submissions. The standard is further elaborated by a naming convention for the files you attach: Your summary sheet should be called callsign.SUM and your ASCII log should be called callsign.LOG. As most of us use some other name, such as "99WWCW" to distinguish the log for one contest from that of another, you will have to make copies of these files with these standardized names before you e-mail them.

Contest of the month - *CQ* Worldwide DX

SSB: 0000UTC Saturday 30 October to 2359UTC Sunday 31 October 1998.

(PDT: 5 p.m. Friday 29 October to 4 p.m. PST Sunday)

(EDT: 8 p.m. Friday 29 October to 7 p.m. EST Sunday)

Note: Most of North America switches back to standard time on the last Sunday of October.

CW: 0000UTC Saturday 27 November to 2359UTC Sunday 28 November 1998.

(PST: 4 p.m. Friday 26 November to 4 p.m. Sunday)

(EST: 7 p.m. Friday 26 November to 7 p.m. Sunday)

The *CQ* WW is not just the contest of the month, it is the premiere operating event of the entire year. This fifty-year-old institution of Amateur Radio attracts more participants from more countries than any other contest. This contest was at one time considered for inclusion in the *Guinness Book of Records* as the world's largest sporting event, but the estimated 50,000 or more participants could not be verified to Guinness' exacting standards. *CQ* receives almost 10,000 actual log entries each year for these two contests. The *CQ* WW also attracts its share of DXpeditions, and there are many countries that you can work easily in the *CQ* WW that are virtually devoid of activity at any other time. If you want to work DX, the *CQ* WW is the time to do it.

With all this activity comes tremendous crowding on the six traditional HF bands. Particularly on 20 and 40 Meters, it can be very hard to find a spot on which you can profitably call CQ, and completely clear frequencies are almost unheard of.

The *CQ* WW is actually two contests: one SSB contest at the end of October, and a CW contest at the end of November. There is also an RTTY contest called the *CQ* WW in late September, but it operates under quite different rules, and does not attract anywhere near the volume of participation.

The exchange in the *CQ* WW is a signal report and your *CQ* WAZ Zone (see January 1998 ***Worldradio***). The forty WAZ Zones, DXCC countries, WAE countries (see August 1998 ***Worldradio***), the Asiatic part of Turkey (TA2, 3, and higher), and "African Italy" (IG9 and IH9 — both in Zone 33) count as multipliers on each band on which you work them. For those in North America, contacts with stations in your own country are worth zero QSO points (although valuable as multipliers), with other countries in North America, two points, and with stations on other continents, three points.

A typical *CQ* WW SSB contest contact might sound like this:

Station 1: "CQ Contest, Three Victor Eight Bravo Bravo." (3V8BB in Tunisia calls CQ very succinctly, pausing only a few seconds to listen for replies.)

Station 2: "Whiskey Papa Two Zulu." (WP2Z replies by sending his call sign once.)

Station 1:"WP2Z, you're five nine three three" (3V8BB sends WP2Z a signal report, the universal 59, and his CQ WAZ Zone. Tunisia is in Zone 33. He then listens for WP2Z's reply.)

Station 2: "Roger, five nine eight" (WP2Z replies with a signal report and his zone — the U.S. Virgin Islands are in CQ WAZ zone 8.)

Station 1: "Thank you, Three Victor Eight Bravo Bravo" (3V8BB thanks WP2Z for the contact, and is standing by for other stations to call him. If he gets no response, he'll call CQ again.)

The *CQ* WW Contest Committee, chaired by Bob Cox, K3EST, has led the world in establishing high standards for log-checking and accuracy. Primarily aided by computers, the committee can does an unparalleled job of verifying logs and this has helped spur a new emphasis by contesters to take additional care to make sure they log every call sign and exchange correctly. Those who submit their logs by diskette or e-mail can obtain a detailed analysis of their log within a few months of the entry deadlines. We all make errors when copying call signs or exchanges, and the committee's analysis can show you where you might improve.

Official forms are available from *CQ* Magazine, 25 Newbridge Road, Hicksville NY 11801, should you decide to log on

Contest Calendar

Contest	Date & Time	Bands	QSO points	Multipliers	Exchange	Entry Categories	Entries
VK/ZL/Oceania SSB'1	1000Z 2 Oct 1000Z 3 Oct	80-10M SSB	3pt/10M 2pt/15M 1pt/20M 5pt/40M 10pt/80M Work Oceania only	Oceania prefixes on each band Score each band separately, then sum scores from all bands.	RST Ser#	Single op all bands Multi-op all bands SWL	6 weeks VK3DID
European Autumn Sprint SSB	1500Z 2 Oct 1859Z 2 Oct	80-20M SSB	1pt/QSO	None	your call, other stn's call, Ser#, name	Single operator only	15 days I2UIY
California QSO Party	1600Z 2 Oct 2200Z 3 Oct	160-2M CW & SSB	2pt/SSB 3pt/CW Work California only	California Counties (58)	RST Ser# QTH	Single op, All bands Multi-op, single tx	15 Nov Box 853 Pine Grove, CA 95665
Ibero-America Contest	2000Z 2 Oct 2000Z 3 Oct	160-10M SSB	3pt/Ibero-AM. 1pt/others	CE CO CP CR CT CX C3 C9 DU EA HC HI HK HP HR KP4 LU OA PY TG TI XE YN YS YV ZP 3C + their DXCC dependencies on each band	RS Ser#	Single op: all bands, QRP Multi-op single tx SWL	30 Nov Conception Arenal 5 08027 Barcelona
RSGB 21/28MHz SSB	0700Z 3 Oct 1900Z 3 Oct	21.2-21.35 28.45-29.1	3pt/QSO Work UK stations only	UK Post Code areas UK stations will send the first two letters of their post code.	RST Ser#	Single op, Single op QRP Multi-op single tx	14 Nov G3UFY
YLRL Anniversary Party CW	1400Z 6 Oct 0200Z 8 Oct	80-10M CW	1pt/QSO on your section 2pt/QSO with others	ARRL Sections, Canadian Provinces and territories, DXCC countries	RST Section	Single operator only	30 Days Kfl JFO
VK/ZL/Oceania CW	1000Z 9 Oct 1000Z 10 Oct	80-10M CW	3pt/10M 2pt/15M 1pt/20M 5pt/40M 10pt/80M Work Oceania only	Oceania prefixes on each band Score each band separately, then sum scores from all bands.	RST Ser#	Single op all bands Multi-op all bands SWL	6 weeks VK3DID
European Autumn Sprint CW	1500Z 9 Oct 1859Z 9 Oct	80-20M CW	1pt/QSO	None	your call, other stn's call, Ser#, name	Single operator only	15 days OK2FD
Pennsylvania QSO Party	1600Z 9 Oct 2200Z 10 Oct 05-13Z Off time	160-10M CW & SSB	1pt/SSB 1.5pt/CW 2pt/160, 80M CW 200pt/QSO with W3YA Work Penn. only	Pennsylvania counties (67) Penn. stations will send a 3-letter county abbrev. x2 if you are QRP	RST QTH	Single op: High power, 100W, QRP Multi-op: Single tx, multi-tx	15 Nov Box 614 St.College PA 16804
RSGB 21/28MHz CW	0700Z 9 Oct 1900Z 10 Oct	21-21.075 28-28.075	3pt/QSO Work UK stations only	UK Post Code areas UK stations will send the first two letters of their post code.	RST Ser#	Single op, Single op QRP Multi-op single tx	14 Nov G3UFY
Texas QSO Party	1400Z 16 Oct 2200Z 17 Oct	80-10M CW & SSB	1pt/SSB 2pt/CW 5pt/Mobiles 7pt/Mobiles in CW Work Texas only	Texas counties	Name	Single op: Fixed, Mobile Multi-op: Fixed, Mobile	30 Nov Box 540291 Houston TX 77254-0291 USA
Worked All Germany	1500Z 16 Oct 1500Z 17 Oct	80-10M CW & SSB	3pt/QSO Work Germany only	German districts (first letter of DOK) on each band	RST Ser# DLs send DOK	Single op: Both or single mode, QRP Multi-op, single tx SWL All entrants may use PacketCluster	1mo. Box720 427 D- 10123 Dresden GERMANY
YLRL Anniversary Party SSB	1400Z 20 Oct 0200Z 22 Oct	80-10M SSB	1pt/QSO on your section 2pt/QSO with others	ARRL Sections, Canadian Provinces and territories, DXCC countries	RST Section	Single operator only	30 Days Kfl JFO
CQ WW DX SSB	0000Z 30 Oct 2359Z 31 Oct	160-10M SSB	0pt/own country 2pt/other NA countries 3pt/other continents	DXCC + WAE countries + CQ Zones	RS CQ Zone	Single op: All bands, Assisted, Low power, QRP, Single band Multi-op: Single of multi-tx	1mo. CQ mag.
ARRL Sweepstakes CW	2100Z 6 Nov 0300Z 8 Nov	160-10M CW	2pt/QSO Work stns once, regardless of band	ARRL Sections Count once, regardless of band	Ser#, Pwr class, ur call, Yr first licensed, Section	Single op: Low power (A), High Power (B), QRP (Q) Multi-op single tx	1mo. ARRL or e-mail to CWSS@arrl.org
Japan Int'l DX	2300Z 12 Nov 2300Z 14 Nov	80-10M SSB	1pt/QSO 2pt/80, 10M Work Japan only	Japanese Prefectures (50) on each band JAs will send a 2-figure prefecture number	RST Ser#	Single op: All bands, Single band Multi-op, single tx	31 Dec Box 59 Kamata Tokyo 144 JAPAN
European DX RTTY	0000Z 13 Nov 2359Z 14 Nov	80-10M RTTY	1pt/QSO 1pt/QTC In RTTY contest, work stations outside Europe	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 Dec Box 1126 D-74370 Sersheim GERMANY
OK/OM DX Contest	1200Z 13 Nov 1200Z 14 Nov	160-10M CW & SSB	3pt/QSO Work OK, OL and OM only	Czech and Slovak counties on each band. OKs, OLs and OMs send a 3-letter county abbreviation	RST Ser#	Single op all bands: Mixed mode, CW, SSB, QRP Multi-op SWL	15 Dec OK2FD
Ukrainian DX	1200Z 13 Nov 1200Z 14 Nov	80-10M CW & SSB	1pt/VE 2pt/NA 3pt/DX 10pt/Ukraine	DXCC + WAE Countries + Ukrainian Oblasts (27)	RST Ser# Ukr. Send Oblast#	Single op: All bands, Single band, All band QRP, Single band QRP Multi-op: Single or multi-tx SWL	1mo. Box 4850 Zaparozhye 330118 UKRAINE

Addresses: CQ – 25 Newbridge Rd., Hicksville NY, 11801 USA; ARRL – 225 Main St, Newington CT, 06111 USA; Callsign – Callbook address;
Bands: The 30, 17 and 12M bands are never used in any contest.

paper. If you prefer to log with a personal computer, CT, NA and TR-log all handle the *CQ* WW flawlessly. The committee asks that if you log using a computer, please send them a copy of your log on diskette, or e-mail it to them at ssb@cqww.com or cw@cqww.com, as appropriate for the contest you work.

Other contests in October

There are State QSO Parties for California, Texas and Pennsylvania that will almost certainly fill the bands with activity. As well, the Radio Society of Great Britain sponsors contests on 15 and 10 Meters in October. VK/ZL and the South Pacific are the focus in their annual contests this month, and the German hams will be out in large numbers for the Worked All Germany contest. The Young Ladies' Radio League sponsor their annual Anniversary Parties this month and next.

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 — October

ARIZONA

OPRC/ARCA Old Pueblo Hamfest 16 October at Sabbar Shrine Temple, 450 S. Tucson Blvd. I-10 turn E on Congress/ Broadway turn S on Tucson Blvd. Setup 7 a.m. Open 8 a.m.-4 p.m. TI: 146.88. Contest: 2M Mobile Ant. Efficiency, Homebrew four categories (scratchbuilt, kitbuilt, integ. sys, orig. design), 2M hidden Xmtr. Demos & forums: APRS, ATV, SSTV, AMSAT, Pkt., FM dev. Meas., Freq chks, Ant. analysis. Instr: soldering, connectors, wire antennas. Meetings: ARCA, ARRL, FCC, AMSAT, Red Cross Comm., 10-10 Int. Ops: RACES van, Commemorative stations. VE Exams. Swapmeet. Vendors. Contact: Glenn Henderson, WA7OBG, 9262 East Indio Pl., Tucson AZ 85749-9407. 520/749-5478; Fax: 520/760-6773; linus@primenet.com; www.hamsrus.com.

ARKANSAS

Northwest Arkansas ARC Hamfest 1-2 October at Jones Center for Families (922 E. Emma Ave. North of airport). Fri.: 7-9 p.m.; Sat.: 8 a.m.-2 p.m. Vendors, traders, refreshments, forums, prizes, VE Exams (p/r: Doug MacDonald, W4FH 501/443-3359; 684 Cliffside Dr., Fayetteville, AR 72701-3813). Adm. $5. Tables $6. Tailgate $4. Free parking. TI: 146.70(–) or 146.76(–). Contact: NWAARC, P.O. Box 24, Farmington, AR 72730, or Clarence Morrow, KC5UEW, 501/631-9231, P.O. Box 264, Rogers, AR 72757-0264.

CALIFORNIA

ARRL SW Division Convention HAMCON 1-3 October at Queen Mary Long Beach. Adm. $10-15. ARRL speakers, banquet, contests, DXCC/WAS checking, exhibits, family fun, featured speakers, forums, license exams, non-ham programs, prizes, Queen Mary tours, T-hunt, technical programs, W6RO station, Wouff Hong. Info: Hamcon 1999, P.O. Box 17864, Long Beach, CA 90807; www.qsl.net/arrlsw/hamcon/.

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Bakersfield Hamfest 7-10 Oct., at Costerisan Lake. Adm: FREE Camping: $10. Food booth, prizes, swap area (FREE), VE testing, dealers/vendors and much more. Talk-in: 52.56-(82.5) / 51.82-(173.8) 145.19-(156.7). For info: BARA Hamfest, P.O. Box 80222, Bakersfield, CA 93380-0222. Rob 661/588-7065; Jerry 661/393-3822. Website: http://members.tripod.com/~w6bar/bara.html; email: w6bar@hotmail.com.

CONNECTICUT

Tri-City ARC Hamfest 30 Oct at Senior Citizens Center, Waterford Municipal Complex, Rte 85 S of Exit 77 off I-395 or N of Exit 82 off I-95. Setup 9 a.m. open 10 a.m. auction (bring your stuff), handicapped accessible, refreshments. TI: 146.97, Adm. Free. Austin Wolfe, AA1SV, 860/443-2459.

FLORIDA

ARC-Bradford Area's Starke Hamfest & Computer Show, 8-9 Oct., at Bradford County Fairgrounds. Adm: $4 (under 13 FREE) Tables: $5 + adm. Tailgate: $4 + adm. Talk-in: 145.150(–). For info: Walt Terrell 904/755-4964. Rt 3, Box 365, Lake City, Florida 32035. Email: wb2fgl@techcomm.net. Website: www.angelfire.com/fl/arcba/index.html.

ILLINOIS

Lewis & Clark Radio Club Midwest Amateur Radio & Computer Expo 16 October at Lewis & Clark Community College in Godfrey, IL in the River Bend Arena. Setup Friday after 6 p.m. or Saturday at 6 a.m. Tables $10. Call 618/254-9465 for reservations. VE testing, free parking, indoor flea market, commercial vendors, all handicap accessible. Door open to public 8 a.m. TI: 145.230 & 442.225. Info & tickets: P.O. Box 553, Godfrey, IL 62035; N9WHH@ezl.com; www.ezl.com/~lmiller/lcrc.html.

INDIANA

Boone County/Clinton County ARCs Hamfest on 24 October, 8 a.m.- 1 p.m. at Boone County Fairgrounds. Door prizes and VE tests. Info: Sara Lecklitner, KB9OEZ, 765/482-9152, For Tables: Sue Youkey, N9NVE 765/436-2565. Email: WK9D@in-motion.net.

IOWA

Tikva Tracers ARC Hamfests 31 Oct. at 4H Building, Iowa State Fairgrounds, Des Moines. Setup 6-9 p.m. Saturday and 6 a.m. Sunday. TI: 146.22/82. Seminars & "Ask the Experts." Good food. Adm. $5. Tables-$10/1st, $8/addl, electricity $8, VE session 9:30. Contact: Cass Nemmeers, NØYMU, 670 36th St., Des Moines, IA 50312. Phone: 515/277-6346. E-mail: hamfestiowa@juno.com.

MASSACHUSSETTS

MIT Radio Society MIT Electronics Research Society Flea Market 17 Oct., 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 more info: 617/253-3776. For advanced reservations: W1GSL, P.O. Box 397082 MIT BR., Cambridge, MA 02139-7082.

MICHIGAN

Utica-Shelby Emergency Communication Association Swap & Shop 24 October from 8 a.m.-1 p.m. at Italian-American Cultural Center in Warren, just south of 12 Mile Rd. and east of Hoover, on Imperial Dr. Seminars on antennas (mobile & HF), packet radio, APRS, GPS and more. FCC Amateur licensing exams (9 a.m.) Prizes! Break & lunch available on the premises. Adm. $5. TI: 147.180(+) (PL100). Info: Debbie Cokewell, KB8YYB, 810/263-0227.

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The **LCDRA** & **CMARC** Hamfair 10 Oct., 8 a.m. at Community Center. Adm: $5. Tables: $10. Trunk Sales $8. Refreshments and overnight camping available. Talk-in: 145.390. For info: Don, WB8NUS 517/321-2004. LCDRA, P.O. Box 80106, Lansing, MI 48908.

MISSOURI

St. Louis ARC & the Gateway to Ham Radio Club Halloween Hamfest 31 Oct, at Kirkwood Community Center, (111 North Geyer Road) Free adm. Tables: vendors/dealers $15. Door prizes, forums, VE exams, food. TI: 146.91. Info: Steve Welton, WBØIUN, 9847 Arv-Ellen, Afton, MO 63123; Phone: 314/638-4959; Email: slw@partyline.net.

NEW JERSEY

Garden State Hamfest on 2 Oct., at Croydon Hall. Tables: $15 Door prizes, Tailgate, and VE testing. Talk-in: 145.485 (-6). For Info: GSARA c/o Mario Sellitti, P.O. Box 286, Keansburg, NJ 07734. Website: http://www.monmouth.com/~gsara.

Hamfests — October

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Bergen ARA Hamfest on 9, Oct. at Fairleigh Dickinson Univeristy. Adm: Buyer w/xyl $5, kids Free; Seller $10. VE exams, food. TI: 146.790 -600. Info: Jim, K2ZO 201/664-6725 (Before 10 p.m.)

NEW YORK

Hall of Science ARC Hamfest 3 October at New York Hall of Science parking lot, Flushing Meadow Corona Park, 47-01 111th Street, Queens, NY. Adm. $5. $10 per space. Vendor setup 7:30 a.m. Opens at 9 a.m. Free parking, door prizes, refreshments. TI: 444.200 (PL 136.5) and 146.52 Info: Stephen Greenbaum, WB2KDG, 718/898-5599 eve. only; WB2KDG@Bigfoot.com.

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Radio Amateurs of Greater Syracuse Hamfest 2 Oct. 8 a.m.-2 p.m. at Pompey Fire Department. Adm: $5. Fleamarket: Outside: $3, Inside: $10 w/ table, $5 w/out. Forums, VE Exams and Food. Talk-in: 147.90/30 MHz. For info: Vivian Douglas, WA2PUU, 315/469-0590. Website: www.pagesz.net/~rags.

NORTH CAROLINA

Maysville Hamfest, 10 Oct., 8 a.m., at Community Center. Adm: Free. Free Tailgating. Talk-in: 146.685. For info: Jo Ann Taylor, WD4JYR, 220 Anita Forte Dr., Swansboro, NC 28584. Phone: 252/393-2120.

OHIO

Ashland Area ARC North Central Ohio Hamfest & Computer Show 17 October at Ashland County Fairgrounds. Adm. $4/adv, $5/at door. Tables $12. TI: 147.105 (PL 71.9). Info: Mike Stroub, KC8LCH, P.O. Box 271-606 North St., Polk, OH 44866; 419/945-277; aaarc@hotmail.com.

OREGON

Mid-Valley ARES's Swap-toberfest, 23 Oct. 9 a.m.-3:30 p.m. at Polk County Fairgrounds. Adm: $5/adv, $6/at door. Table: swap $15; dealer/vendors $25. seminars, fleamarket and much more. TI: 146.86. Info: Bob, W7LOU, 503/623-2513. E-mail: w7lou@goldcom.com. Web: http://www.teleport.com/~n7ifj/swaptobe.htm.

PENNSYLVANIA

SVARC Hamfest, 2 Oct., 9 a.m. - 4 p.m. at Silver Moon Antique & Flea Market Show Area. Adm: $4. Tables: Outside: $7, Inside: $17. Set-up 7 a.m. TI: 147.270; 146.520. Info: SASE to SVARC, P.O. Box 73, Hummels Wharf, PA 17831. Web: http://loveland.dynip.com/svarc. E-mail: gpmac@netscape.net or k3si@hotmail.com. Phone: 570/286-2086.

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Mt. Airy VHF Club Hamarama 03 Oct. 7 a.m.at Middletown Grange Fairgrounds, Wrightstown, PA. Adm. $5 tailgaters: $10, indoors: $15. TI: 146.52. Info: Mark, NK8Q, 662 Cafferty Rd. Ottsville, PA. 18942. e-mail: nk8q@amsat.org. Phone 215/847-2285 or Bob, N3XEM, e-mail: raminch@bellatlantic.net, Phone: 215/822-0779.

SOUTH CAROLINA

York County ARS Hamfest, 2 Oct. 6 a.m. at Knights Stadium (Fort Mill). Adm: $5 adv., $6 at door. Tables: $10. Vendors/dealers, fleamarket, tailgating. Food and VE testing. FInfo: Haney Howell, K2XN, 803/323-4534. Website: www.YCARS.org. YCARS Hamfest, 2129 Squire Rd., Rock Hill, SC 29730.

TENNESSEE

Kingsport, Bristol and Johnson City Radio Clubs' Tri-Cities Hamfest 16 Oct. at Appalachian Fair Grounds, off I-181 in Gray, TN. A large indoor & outdoor space is available. RV hookups. Adm. $5. Info: P.O. Box 3682 CRS, Johnson City, TN 37602.

TEXAS

Temple ARC Ham Expo '99 2 Oct. at Bell County Expo Center, Belton, TX. Adm. $1. Table $10. Indoor tailgate swap. Free electricity for every space. Great doorprizes. Contact: Mike, WA5EQQ, P.O. Box 4511, Temple, TX 76505-4511; 254/773-3590; hamexpo@tarc.org; www.tarc.org.

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Texoma Hamarama Assn. 29-30 October. Adm: $9 1st, $5 after that. Dealors/Vendors, Fleamarket, VE exams and Drawings. TI: 147.39 (PL 118.4). Info: Herb Sleeper, WB5PHM 940/855-5820. E-mail: retmarine@cst.net. Web: http://qsl.net/kc5sig/hamarama.

WASHINGTON

Mt. Baker ARC Ham Radio Fleamarket 30 Oct. at Ferndale Band Boosters Bingo Hall, Ferndale, WA. (Take I5 exit 262 and turn right, go to LaBounty Rd and turn left. 1 1/2 miles to hall.) Adm. $3. Tables $15. RV/SV Parking, free parking. TI: 146.74/14(PL 103.5). Info: Al Norton, K7IEY, 360/354-4622; 1008 Liberty St., Lynden, WA 98264; or Terry Andrew, VE7BUS/W7 at: andrewtj@pacificrim.net.

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North Kitsap ARC Hamfest, 9 Oct. 9 a.m.- 3 p.m. at Kitsap County Fairgrounds. Adm: $5 (under 12 FREE). Table: $20; vendors: $30, electricity - $2. TI: 146.62(-), 146.52. Info: Marcie , KC7DAT, P.O. Box 2268, Silverdale, WA 98383-2268. Phone: 360/697-2797. Email: nkarc@yahoo.com.

New Products

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

Morse Express Miniature "Sox" Key

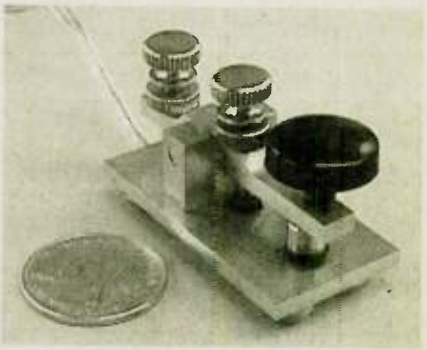
Morse Express announces the availability of a new miniature telegraph key, perfect for portable operation. It's the Sox Key, hand-made by Tim Soxman, W3ZVT.

The Sox Key is a tiny delight to use. With the base and main parts machined from brass, it weighs in at a whopping 3oz., including the cord. The base measures 1 X 2 inches and the key is 1.25 inches tall to the top of the knob. It's easily carried in pocket or purse, or tucked into a sock, or you can even operate it hand-held! The Sox key is supplied complete with an attached cord terminated in a 1/8" phone plug.

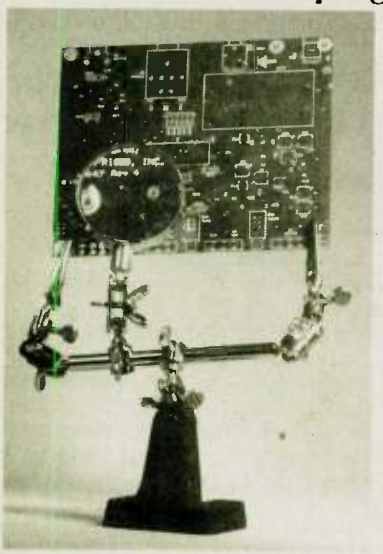
Where's the spring? It doesn't have one. Tension is magnetic, and is fully adjustable. The knob-over-base design insures that the key won't tip forward when in use.

In the words of one of the first amateurs to use it, "it's incredible — the best miniature I've ever seen!" Another said, "I thought the price was a bit high ($79.95) but I can see how much work is in it and it is definitely worth the money. It's fast, and a pure delight to use. Even my wife thinks it's cute!"

Pictures and more info are available on the Morse Express web site at www.MorseX.com where you will also find secure ordering facilities. Call 800/238-8205 toll free to order by phone, or 303/752-3382 for more information.



MFJ introduces "Helping Hands" Kit Tools



MFJ Entrprises, Inc. has added several hand tools and the popular "Helping Hands" project holder to its line of products for electronics hobbyists.

The new hand tools include a 4-inch tapered head diagonal cutter pliers. Suitable for soft wire below diameter of 1.0mm. Green cushion grips. Order number is MFJ-7104, $6.95.

For heavy-duty wire cutting there are new all-purpose 6-inch wire cutters with standard beveled edges. This tool has exceptional strength, red plastic-coated cushion grips, and is suitable for cutting coax and other thicker wire. Order number MFJ-7106, $11.95.

For reaching into places where your fingers won't fit, try the 4-inch needle nose pliers with green plastic coated cushion grips. Order number MFJ-7114, $6.95.

Electronic hobbyists working on small circuit boards or soldering parts together have always needed a "third" hand. It's very easy to damage delicate parts using a standard vise, so the "Helping Hands" with 2" magnifying glass is a welcome addition to any shack. It holds objects at any angle and leaves both hands free. It features six ball joints, nickel-plated fittings, heavy cast-iron base, alligator spring clips, and locking thumb screws. Order number VEC-7400, $14.95.

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The MFJ 12-Hour Quartz Wall Clock is a beautiful clock with a clear, clean and highly visible 12-inch diameter face. Easily seen from 15-20 feet away, it's the perfect timepiece for home or office.

You get precision Quartz accuracy, 12-hour digits on a clean, white face, 24-hour timeline trim, seconds digits and multicolored attractiveness that'll brighten any wall. A thin line of gold trim outlines the face inside and outside. The 24-hour trimline is reversed in a hunter green and red stop points and seconds digits accentuate the black hands and 12-hour digits.

Easy to set with one simple turn dial on the back, it operates for long periods on one "AA" battery (not included). Made of hard, durable plastic, this wall clock will give you years of use.

MFJ will repair or replace (at our option) your MFJ-126 Clock no matter what for one complete year.

To order, or for your nearest dealer, call: toll-free 800/647-1800; fax: 601/323-6551; e-mail: mfj@mfjenterprises.com; or write to MFJ Enterprises, Inc. P.O. Box 494, Mississippi State, MS 39762; or check out our web site: http://www.mfjenterprises.com.

New Products

Paddlette Miniature Paddle Key-Keyer combo

Paddlette Co. is pleased to announce two new products: Models KP-1 and KP-3 iambic paddle key-electronic keyer combinations. Both models combine a Paddlette key with an Embedded Research TiCK keyer IC in a tiny 11" X 2" enclosure — total weight 1.7 ounces.

Both units generate strings of dits and dahs in response to paddle strokes, and in addition provide a menu of keying options to the user. These are accessed by holding the pushbutton down until the desired Morse character is heard, then releasing the button and following the simple instructions in the manual. The basic KP-1 menu items and Morse symbols are: speed-'S'; tune-'T' paddle select-'P' piezo on-off- 'A' ; straight key mode-'SK' and iambic mode A/B - 'M'. The model KP-3 adds two 50-character message memories and recalls plus it has a beacon mode which will repeat either message ad infinitum (or until user hits either one of the paddles).

Both are very high quality, professional grade units — rugged, reliable and easy to use. They are completely self-contained including the 200 mA hr, 3-Volt lithium coin cell. Key-up current drain is 1 microamp; key-down drain is 0.6 milliamp. Battery life under average operating conditions (two hours per day, 365 days a year — 50% sending, 50% receiving) should exceed one year. Output is to a 1/8" mono jack and will drive any normal solid state transceiver. Both models feature a very strong magnetic holddown and an optional knee mount.

Prices: Model KP-1 $72.00; with knee mount $79.75. KP-3 $82.00; with knee mount $89.75. Shipping & handling $3.75 first class U.S. mail. Send check or money order to: Paddlette Co. P.O.Box 6036 , Edmonds, WA 98026. Telephone: 425/743-1429, e-mail: bliam379627@aol.com.

Computer Aided Technologies BC245 TrunkTracker II scanner software

As more and more public service agencies and private companies switch over to "trunk tracking" radio systems, more and more scanner owners are finding their radio scanners obsolete. In order to accurately listen to the newest systems, you need a scanner capable of following the signal as it moves from channel to channel.

Computer Aided Technologies now has support for the newest addition to the scanner lineup — the Uniden Bearcat BC245 TrunkTracker II. Scancat software takes the fuss out of using your new scanner. It can be used to program your scanner for either conventional or trunking channels (including EDACS and four Motorola systems). It permits you to load the memory banks of the radio with all your favorite trunking frequencies. Scancat can also read the radio's memory contents to files, including trunking information. Scancat supports 45 radios, from 10 manufacturers. (If you already have a BC895 — Scancat works with this scanner, too!) No need to buy several programs, one for each different radio you own.

Scancat can also do your logging, scanning and spectrum analysis. The program can automatically check for "duplicates" of all group numbers, as they become active. And Scancat can "time stamp" activity. It also allows you to enter a 50-character description and comments. Scancat allows you to sort on any field in ascending or descending order. That's a great feature for finding the most active talk groups.

Scancat is available in two versions — Scancat-Gold for Windows "SE" for $159.95 or Scancat-Gold for Windows for $99.95 Upgrades to Scancat Gold for Windows "SE" are $59.95, and for Scancat-Gold for Windows for $29.95.

Scancat is available from Computer Aided Technologies, P.O. Box 18285, Shreveport, LA 71138. Order toll-free by calling 888/SCANCAT (888/722-6228). For more information call 318/687-4444, or fax 318/686-0449.

Creative Services Software WEFAX '99

Creative Services Software announces WeFax '99, a new 32-bit Windows* WeFax program for the Kantronics TNCs is now available in Preview. The cost for the program is $49.95 and it includes free updates to all 1.x releases.

A demo version of the program can be downloaded from http://www.cssincorp.com/wefax.

The black and white weather facsimile charts, referred to as "WEFAX" by HF radio operators, have been transmitted by shore stations for years and received by commercial ships, yachts, and radio amateurs. This allows yachts, marine and weather observers to get images of current weather conditions where no telephone or television is available.

The program takes advantage of the WEFAX mode of the Kantronics line of TNCs. It will allow the user to save the transmissions in .BMP (bitmap) format, print the transmission to any Windows printer, or e-mail it via the Internet.

Creative Services Software is on the web at http://www.cssincorp.com. The product can be ordered directly from CSS at 256/381-6100 or purchased through your favorite dealer.

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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
Alabama			
10/05/99	Mobile	David, WA4AVC 334/649-5229	p/r pref
Arizona			
10/09/99	Tucson	Joe, K7OPX 520/886-7217	w/i only
Arkansas			
10/16/99	Gassville	Phil, AB5ZU 870/425-7406	p/r pref.
California			
10/09/99	Carlsbad	Rusty, AA6OM 760/747-5872	p/r pref.
CALL	Carmichael	Info Hotline: 916/492-6115	w/i
10/03/99	Chico	Gene, WA6ZRT 530/345-3515	p/r pref
10/28/99	Colton	Harold, AB6RN 909/825-7136 days or 909/685-6073	p/r pref.
10/03/99	Concord	Gene, WW6H 510/254-5090	w/i only
10/02/99	Culver City	Clive, AA6TZ 310/827-2538	w/i pref.
10/07/99	Fremont	Dennis, K6DF 510/791-0914	w/i only
10/03/99	Hanford	Lynn, NW6K 209/582-5232	w/i only
10/09/99	Harbor City	Elvin, N6DYZ 310/325-2965	p/r pref.
10/23/99	Lake Isabella	HOTLINE 760/379-2947	p/r pref.
10/16/99	Long Beach	Don, 562/420-9480	p/r pref.
10/30/99	Pomona	Carl, WJ6N 909/356-1919	p/r
10/10/99	Sacramento	Dick, W6DK 916/383-2113	p/r only
10/13/99	Santa Ana	Red Cross 714/835-5381 x140	w/i
CALL	Santa Rosa	Recording, 707/579-9608	
CALL	Sebastopol	Recording, 707/579-9608	
10/16/99	Stockton	Mark, W6DKI 209/465-7496	w/i
10/09/99	Sunnyvale	John or Gordon 408/255-9000	w/i only
Colorado			
CALL	All Colorado	Exam recording 303/360-7293	
10/11/99	Boulder	Rich, NØSH, 303/380-6540	w/i pref
10/23/99	Longmont	Eaarle, NØISB 303/776-9158	p/r pref.
Connecticut			
10/19/99	Middletown	Paul Lux, K1PL 860/635-1742	p/r pref.
10/09/99	Newington	Dan, K3UFG 860/289-3379	w/i pref.
Florida			
10/14/99	Ft. Myers	Leonard, KC4GOA 941/694-2505	w/i
call	St. Pete	Mark, NP3R 727/528-0071	w/i pref.
Idaho			
10/09/99	Boise	Lem, W7JMH 208/343-9153	w/i pref.
10/27/99	Grangeville	Larry AB7GY 208/983-2163	w/i pref.
Illinois			
Anytime!	Burr Ridge	Deni, W9DS 630/986-0061	p/r
10/20/99	Chicago	Mike, KG9C 773/781-7171	w/i ok
10/09/99	Oak Forest	David, NF9N 708/448-0580	p/r pref.
10/16/99	Rockford	Rusty, WB9QYV 815/968-0080	w/i pref
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10/09/99	Houghton	George, W8FWG, 906/337-2542	p/r pref.
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10/09/99	Cranford	24-hour hotline 973/377-4790	w/i pref.
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Tuesdays	Bend	Bill, K7ZM 541/389-6258	p/r only
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Sundays	Sisters	N7TYO 541/549-7831	p/r
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Pennsylvania			
10/02/99	Erie	Norma, W3CG 814/665-9124	w/i only
10/07/99	Philadelphia	Dusty, ND3Q 215/879-0505	w/i ok
10/21/99	Pittsburgh	Bob, AA3FI, 724/356-4020	w/i ok
10/18/99	Telford	Joe, W3PNL 215/723-6697	p/r pref
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10/30/99	San Juan	Victor, KP4PQ 787/789-4998	w/i
Rhode Island			
10/14/99	Providence	Judy, KC1RI 401/231-9156; Al, NN1U 401/454-6848	w/i pref.
10/30/99	Slatersville	Bob, WB1P 401/333-4787	p/r pref
South Carolina			
10/16/99	Charleston	Ed, KE2D 843/871-4368	w/i pref.
South Dakota			
10/09/99	Hot Springs	Lon, WSØV, 605/745-5929	w/i ok
Texas			
10/14/99	Euless	Marv, N5MK 972/513-9500	p/r
10/07/99	Harlingen	John, AK5Z 956/389-9750	w/i
10/12/99	Houston	Harold, ND5F 713/464-9044	p/r pref.
10/20/99	Mission	Vince, W9KGT 956/580-1957	w/i
Vermont			
10/22/99	Essex Jct.	Mitch, W1SJ 802/879-6589	p/r pref.
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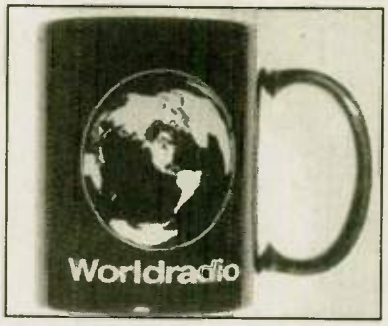

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How I got started in PSK31

Jack Speer, N1BIC

PSK31 is a new digital mode developed by Peter Martinez, G3PLX, who, I am told, is the father of AMTOR, another popular digital mode. It uses a nifty way of representing characters called VARICODE which uses shorter bit patterns for more frequent letters (much like CW). PSK31 is not a handshake or ACK/NAK form of communication. It works much like RTTY with one station sending a complete message at a time. Both transmitting and receiving are usually done on the same frequency. 20 Meters (14.070) is the hot spot though other bands are also in use. PSK rivals the weak signal performance of CW and is a significant improvement over RTTY. Some copy is perfect and I have even copied signals which I could not hear because they were below the noise level! The very narrow band width, easy tuning with PSK31SBW using the "waterfall" tuning indicator to select the desired station and "phase" tuning indicator to zero beat the signal phase on your computer screen, coupled with the low power (usually 50 Watts or less) make this new mode really easy, inexpensive and enjoyable.

PSK31 operates using a pretty much everyday transceiver (I use a Kenwood TS-50 into a simple McCoy dipole at 50ft). When at PSK idle the transmitter output power envelope is at 50%. Also needed is an isolation interface circuit (installed between the xmtr and computer), and a standard PC or laptop running Windows 95/98 and a 16-bit sound card (to provide the Digital Signal Processing – DSP), plus an available serial port (for PTT).

The PSK31 software is free on the web at: http://aintel.bi.ehu.es/psk31.html. Once downloaded and unzipped the program and its associated files can be put through the standard Windows "SETUP" procedure and then is ready to go. You need to provide the program with your callsign, sample rate (11025Hz suggested), center frequency (1000Hz suggested) and COM port number on your computer for push to talk control (using DTR). Then off to the races and you won't need your microphone!

The PSK31 isolation interface circuit was in the May, 1999 issue of *QST*. The Lectrokit circuit I chose uses optical isolation rather than a Radio Shack 1:1 transformer as in *QST* and has other nice features as well. The interface includes an adjustable audio amplifier to boost low level receive audio, 100:1 pad for attenuating transmit audio (#1 problem is overdrive), PTT keyer, LED transmit indicator and an on-off switch to isolate the PTT line when not actually running PSK software. I have built several of the Lectrokit QRP rigs with great success and their PSK interface will please ***Worldradio*** readers. Total cost was less than $25 including the optical isolation interface kit I bought from Lectrokit ($19.95, http://sanduskyohio.com/lectrokit/).

There are several new programs that are PSK31-capable coming available. Additionally, several accessory programs are available to add extra and convenient controls to the basic PSK31SBW (G3PLX) package. One of the most popular is a front end program with a type-ahead buffer, etc. by Al Williams, WD5GNR. Al's PSK31 front end program interfaces to the Buckmaster HamCall CD-ROM. I suspect we will see lots of new software (some free and some not) come on the scene in months to come. PSK31 may not last as long as RTTY has, but PSK has some major advantages. It also is conducive to one amateur talking to another at typing speed. It makes a QSO more personal and the equipment doesn't seem to get in the way.

The following are two PSK mailing lists I have subscribed to via the Internet. I get about 25 messages each day, most of which are worth reading. psk@host.n2ty.org and psk31@aintel.bi.ehu.es

I hope other ***Worldradio*** readers will have the same fun that I have had these past few weeks.

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