Emergency Communications • Public Service • International Friendship

Worldradio

Year 26, Issue 6 December 1996 • $1.50

New England Convention — Boxboro '96

Armond Noble, N6WR

And a grand time was had by all! It was the 1996 ARRL New England Division Convention held at Boxborough, MA on 05-06 October, 1996.

For just a few dollars admission fee, access was gained to some high-powered forum speakers and their information. For example,

Attorney-at-Law Chris Imlay, N3AKD, a whiz-bang at communications law.

Chip Cohen, Ph.D., N1IR *(think about his suffix),* a professor at Boston University spoke about fractal antennas.

Joe Reisert, W1JR, a leading authority presented a seminar on Antenna Facts and Fallacies. Chris Imlay, N3AKD, the ARRL's legal eye on Washington, discussed the legal issues affecting amateurs today. Plus, you got to ask questions, and for free came the answers. There was an ARRL Forum with the president, Rod Stafford, KB6ZV, present, giving all an opportunity to speak their minds.

The only problem could have been deciding which forum to attend as there were often three or four interesting ones being presented at the same hour. Here is a shortened list of what was available.

Foxhunt, Kevin Keller, WB9MUP; SSTV, John Langner, WB2OSZ; ARES, Rick Palm, K1CE; Magnetic

Press "The Wireman" Jones, N8UG, gave the straight scoop on cables and wires.

Joe Reisat, W1JR, brings many years of high-level antenna experience to the seminar.

Antennas, Rich Cariello, AA2MF; Wire and Cable, Pres Jones, N8UG; Antennas, Lew Collins, W1GXT;

(please turn to page 12)

Drill becomes the real thing

Abbot Reid, N3JGT

Amateur Radio has been playing an important part in the communications system of Jefferson County, Pennsylvania, for several years. The hams have an Amateur Radio station in the Emergency Management Agency — 911 building, and have worked in association with the municipal fire, police, and emergency medical departments, and the local school system. We have put on demonstrations, taken courses, supported communications when phone, or radio systems have "gone down" for short periods of time, and participated in many EMA sponsored haz-mat (short for hazardous material), and weather drills.

It was "business as usual" when we participated in a weather and haz-mat drill on the evening of 18 July, 1996. All went well with the drill on both voice and packet systems; the local fire departments were thrilled with the number of messages passed through our station, and many compliments were directed our way. Irony was to have its turn, though, as we said our good nights. Little did we know that the very next morning our equipment and personnel would be put to the test.

Call out

It was 5:17 a.m., 19 July 1996. It had rained all night, nonstop, accumulating up to seven inches in five hours. The Amateur Radio service was called to respond to the 911 center and start up auxiliary emergency communications operations for the county, due to flash floods in the area. Our family, consisting of myself, Abbot, N3JGT, Donna, N3LAK, and Vickie AA3OT, Reid, were first on the scene. I responded to the incident command in downtown Brookville, while Donna and Vickie set up the system and started the net on the local repeater and the phone chain. Within an

(please turn to page 12)

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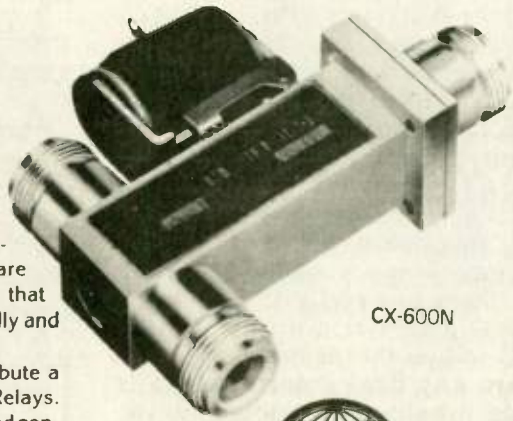

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NEWSFRONT

Worldradio

Some information has been supplied to *Worldradio* Newsfront courtesy of *Newsline*.

Cities to challenge FCC

Major court challenges are expected by city planners, community managers and homeowner's associations to recent rulings by the FCC that forbid states, citys, municipalities, homeowners' associations, and even individual landlords from enacting rules forbidding the installation of those pizza-sized satellite television dishes.

When it used its power and preempted local jurisdiction and land use regulations to permit anyone to install one of these mini satellite antennas, the FCC said it was doing so to insure that the general public had access to the latest in television transmission technology.

According to recent news reports, however, some cities, states and many homeowners' organizations disagree. A spokesmen for a coalition of urban planning groups say that the federal government has no right to dictate the aesthetics of a community, and that controlling satellite dishes and any antenna structures must be done on a community planning level. It will be up to the legal system to decide who has the final word.

Urban planners say that they will be going to court in an all-or-nothing effort to wrestle the power of federal preemption away from the FCC. While it will be many years before any final determination is made, whatever the outcome, the future of many radio services that use visible antennas — including Amateur Radio — may well hang in the balance.

On-line Vanity call sign form available

Gate 2 of the Vanity Call Sign program opened on Monday, 23 September now an electronic version of the Amateur Station Vanity Call Sign Request Form 610V is available from the FCC via the Internet. Those wanting a copy can access the form on the Internet at the Federal Communications Commission Wireless Telecommunications Bureau home page at:

www.fcc.gov/wtb

Then look under Amateur Radio-Interactive Vanity Call Sign. Detailed filing instructions are available by clicking on the item number on the Internet form.

There is however one caveat — electronic payment of the vanity filing fee is not yet available. The FCC says that applicants must print out and mail a completed FCC Form 159 with payment to:

Federal Communications Commission
Box 358994
Pittsburgh, PA 15259-5994

Please note that this is a different Post Office box and ZIP code than for vanity requests and payments using FCC printed from 610 V.

Meanwhile, all inquiries concerning Amateur Vanity call sign requests and the filing procedures should be directed to the Wireless Telecommunications Bureau's Consumer Assistance Branch in Gettysburg, Pennsylvania. Its toll-free telephone number is 800/322-1117.

Ham teacher featured

A former ARRL Professional Teacher of the Year, Sheila Perry, NØUOP, of Bloomfield, Missouri, was featured in the August edition of *Learning* magazine. The article highlighted her SAREX work and cited ARRL's Educational Activities Department as the place to get more information.

Hudson Division Director retires

The Leagues' Hudson Division Director, Paul Vydarney, WB2VUK, resigned his seat on the ARRL Board, effective 5 September. WB2VUK cited job and church obligations as preventing him from doing what he considers a proper job of fulfilling his duties as director.

Vice Director Richard Sandell, WK6R, of Scarsdale, New York, becomes director for the remainder of Vydarney's term, which expires 1 January 1997.

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Worldradio

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— *Features*

— *Departments*

Worldradio

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Worldradio (USPS 947000) is an international conversation. You're invited to participate.

Our goal is to be a valuable resource of ideas and experiences beneficial to the Amateur Radio community. We publicize and support the efforts of those who bring the flame of vitality to this avocation. You readers are participants — an alliance of active radio amateurs concerned with reality, using radio as a communications tool to develop the skill, quality and full potential of Amateur Radio.

We emphasize the positive aspects of this great activity, and desire your contributions dealing with dramatic, personal and humanitarian uses of Amateur Radio. Articles for consideration may be submitted through the U.S. Postal Service or e-mail to kb6hp@ns.net

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Publisher's Microphone

We now present those sterling amateurs who should be seated at the banquet head table at the next convention. The latest to become ***Worldradio*** SuperBoosters (Lifetime Subscribers) are:

•Faith Senie, N1JIT, Bolton, MA

•Raymond Allard, K1MFZ, Foster, RI

•William Ferguson, N2VOT, Kerhonkson, NY

•Scott Kostenbauder, W2AWX, Poughuag, NY

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•Bill Hillendahl, KH6GJV, Santa Rosa, CA

•Ms Marti Brutcher, N6XDS, Portland, OR

•Gary DeBock, N7EKX, Puyallup, WA

*

The best day of the month (after payday) is when the envelope from the QSL Bureau comes in the mail. The worst day of the month is when a QSL card is returned with the note "not in the log." I see more people crying about that lately. There is a solution, but one that is not heeded. On many occasions over the years I've advocated greater use of tape recorders in our Amateur Radio pursuits. In DX, for example, you could be recording the output of your receiver. When you work the DXpedition put that tape away for safekeeping. Then, if you get a "not in the log" you can send the DX operator a dub of that tape. You could ask him to listen to the applicable portion. You could say, "Listen to the tape, you worked me right after you worked W6QEU and right before K6FO. That is your voice on all those and my contact too, isn't it?" That way, if the DX operator (after 23 hours) did a blink and nod and missed writing (or typing) you in the log, the evidence of the contact would be there.

Let's say one of your friends went on a DXpedition. Wouldn't it be a nice memento of his trip if you presented him with a tape of how he sounded back home? Certainly worthy of being archived is a recording of Amateur Radio activity during an emergency or disaster.

There are some audio tape recorders on the market that have been modified (the tape moves very slowly) for extra long play. A clever move by many is to use the video tape recorder as an audio recorder with six- or eight-hour capacity and fairly good fidelity.

Anyone who is really serious about QRP and doesn't get *SPRAT, The Journal of the G-QRP Club* is really missing out. Details from Rev. George Dobbs, G3RJV, St. Aidan's Vicarage, 498 Manchester Rd. Rochdale, Lancs. OL11 3HE, England.

After tons of requests ***Worldradio*** has reprinted "AERIALS" (not to be confused with AERIALS II) which is made up of the earliest columns of Kurt N. Sterba. The book is now in stock. Full details in the advertisement elsewhere.

Looking through the bulletins of the radio clubs, I read about their efforts in my favorite activity — Field Day. Surprisingly there are many mentions of balky and failed generators. Brings back memories of the PE-75 of Army days. Anything that four soldiers could carry was labeled "portable."

When one can run a transceiver all FD weekend from a car battery it seems strange that generators (with all their problems, noise, and gas consumption) would still be used to such a degree.

The National Sales Manager for Kenwood's Amateur Radio Products Group recently said the future for Amateur Radio looks bleak. He cited competition from unlicensed communications modes such as the newly created Family Radio Service.

Maybe I'm just an optimist at heart but I feel exactly the opposite. It may well be that a great number of people, after sampling what radio can be, will want even more and be attracted to Amateur Radio.

We're looking for someone to write a VHF/UHF column. The compensation will not move you into a higher tax bracket. However, you will be able to take your wife to the movies that month, Sunday matinee before the prices go up.

And, start getting your station to be competition-ready for the ***Worldradio*** QSO Party, first full weekend in June, 1997. —*Armond, N6WR*

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FT-10/40R
Ultra Compact Handhelds
VHF or UHF. Similar to FT-50R including MIL-STD 810, and other exclusive features.

To patch or not to patch, that is the question

Gary Presley, KEØI

What we say on the amateur bands is public. Repeaters are akin to the old-fashioned telephone party line. Even the HF bands can surprise you — once in the midst of a casual CW conversation, I was lamenting my difficulty in working DX with a dipole and a 100 watts when a station in Africa found it amusing to break in and join our chat. We tend to forget, however, what we say can become the subject of discussion in ways we can't predict, and so a wise amateur watches what he says when.

On the other hand, there are times when we want more than one opinion. Packet radio provides such a forum. From Democrats to dogs, from Republicans to recipes, from the ARRL to Zmodem protocol, you'll get opinions from around the world if you pose a question. My most recent quest for knowledge came when our local ham club (The Ozarks Amateur Radio Society) began discussing the pros and cons of linking a telephone autopatch to our 2-meter repeater.

I'm the SysOp (system operator) for the network BBS that operates under the club's auspices, and so I needed no prompting to post a bulletin to USERS @ ALLUS to garner opinions from the amateur world regarding the logic of investing in autopatch equipment for a small town repeater. The bulletin gave a bit of background and asked some pointed questions:

"We're a small club (and that means we're limited in financial resources as well) in a rural area: 40 members meeting in a town of 6,000, but more than half of those members come from surrounding towns. Our repeater is located in the town in which we meet, and it is a toll call to telephone any of the other surrounding communities or the two large cities nearby. Is your club in similar circumstances and operating a repeater with a telephone autopatch? What are your experiences, good and bad? Are you the control operator or repeater trustee for a repeater with an autopatch? What kind of hassles do you face?"

If anything, amateurs are generous. Want an opinion? They're ready to share. In short order, I had a file over 40 kilobytes in size (that's 8,000 words plus, for those of you who aren't computer buffs) to be edited into a report for a subsequent club meeting. By the time the "go-for-its" and the "you'll-be-sorrys" had ceased to flow through the packet network, my bulletin had even received mention in Bill Pasternak's ***Worldradio*** column, and more responses were soon on hand to tabulate.

Frankly, I'd expected opinion to be divided equally on the issue, but the responses in favor of adding the autopatch were in the majority. Surprisingly, however, only one or two were unequivocally in favor.

"Do it! You owe it to your membership. We have long distance numbers programmed into our controller and those members pay a $20 deposit to draw against. Usually the calls are 20 cents for 3 minutes so $20 goes a long way. We have had virtually no abuse in 20 years."

Thus spoke a repeater trustee from Pennsylvania, one whose club membership had tripled following the installation of an autopatch. His attitude was the exception. The overwhelming majority of positive responses also incorporated warnings about the perils of operating an amateur autopatch. A Californian wrote:

"The bottom line is the good outweighs the bad. The autopatch is great for emergencies, etc. Nice to have available! We used to have autopatch as an option at 10 bucks a year additional. We changed that and raised the dues to all members to include the privilege. At first, you will have a lot wanting to play with the new toy. I would say that you need to set some ground rules first before you make the telephone available. You will also find a few who will use it as a private telephone, and use it on a regular basis, and that is the bad side of it all, but the numbers will be few. Make sure the dues will cover the toll calls made on your system!"

An amateur from Oklahoma thought the relatively small size of our club would be the primary factor influencing our success in adding an autopatch:

"Carefully planned, an autopatch can be an asset. Poorly planned, it will prove the ruination of your club, particularly one so small. If only one or two members think there is a need for a patch, kindly suggest they buy a cell phone."

A number of those responding listed the benefits to be gained from the addition of an autopatch. This from a control operator in Iowa:

"Nice to be able to make a call for vehicles broken down, accidents. Friends, family can stay in touch when you are mobile/portable. Closed system does give some measure of security. Easy access to the outside world without the hassle of cell phones. Repeater programming can be done by the phone."

However, he was also frank about the drawbacks he had experienced:

"More equipment to be purchased and maintained. Startup costs are significant. Some users are on the thing all the time. Have had some trouble with hackers but late at night and so far they have not gotten into the phone patch."

Surprisingly, several amateurs responding reported limited use of autopatch systems. One, from Kansas City, wrote:

"Now that the newness has worn off the repeater will average about three calls a week. Not something that is in big demand."

Many of those who urged the addition of an autopatch had a level of enthusiasm that seemingly allowed them to ignore the problems they were experiencing. From Idaho:

"We find no negative aspects at all, only positive. Oh, of course there are always a few lids who want to use the patch and don't want to support the repeater, but so far they are few and far between. Most appreciate it so much they joined the club even though they hardly ever use our facilities."

This lack of participation was noted by others who replied. An Oregon amateur outlined his club's ex-

perience in coping with people who joined only to gain autopatch access.

"One problem I have seen in other clubs is that a lot of members join the club just to have autopatch use, but don't otherwise participate in club activities. Now when you need 50% of the club members to constitute a quorum for an election, it is harder to get enough folks together. There are a couple approaches to this — we have changed our by-laws to allow a majority of the members at a regularly scheduled meeting to constitute a quorum on issues which have been announced in advance. (And we allow mail ballots or proxies.) We are also starting a non-voting membership category for these folks."

It's a quirk of human personality that negative opinions are held more strongly than positive ones. Those who felt an autopatch meant trouble generally were wholly negative in their opinion. Mentioned often, the tendency of telephone companies to charge commercial rates for telephones linked to amateur repeater systems irked many.

Many of those whose experience with autopatches led them to advise us to proceed with caution enumerated the difficulties to be expected.

"We have had problems with hackers getting into the Auto Patch and causing problems, but we have six Control Ops so the repeater is watched very closely most of the day," from New England. From Ohio, "One local ham told me that he got into FM radio because it was cheaper than buying a cell phone. He viewed the patch as his personal communication device." Another from California, "I think it is a pain and has no business on a ham repeater. Most of the phone calls are of a trivial nature, some are disguised business calls. Some people seem to think the autopatch takes precedence and will interrupt a conversation to make a call of dubious importance. It seems ragchewing is discouraged, so the repeater is quiet for long periods of time."

That Golden State amateur was not alone in complaining about constant frivolous use of their autopatch system. Also there were a good number responding who reported difficulty in collecting for toll calls made on machines that permitted other than local area access.

Some negative comments were surprising. This note came from a long-time amateur and control operator who, as a retired state highway patrolman, had a perspective from the other side of the autopatch, so to speak:

"Autopatches are a pain for nearly everyone involved with them. The few emergencies that arise could probably be better handled by just asking a ham with a phone to call it in. And 9-1-1 operators just can't seem to understand that you are mobile without a cell phone and also that a repeater patch call times out and you can't stay on the line with them."

Another longtime amateur residing in a major Midwestern metropolitan area wrote:

"The number of actual emergency phone calls placed through this patch is very small. Maybe one or two a year."

Most troubling were the implications and the comments voiced outright that adding an autopatch system to a club's repeater can have a negative effect. This came from an amateur in Oklahoma whose group split over disagreements related to their repeater autopatch system.

"Going for it changes the nature of the club, because even if you set it up, [reason] says to make it a closed system. Currently, we have no patch on the main club repeaters. The usage is much more free-handed and there is an air of friendly exchange on them now. We have attempted to make the repeaters a place where old friends can chat and new friends can be made."

What did our club learn from this survey? We began considering an autopatch because a female member of the club found herself stranded after her vehicle broke down in a rural area. She made several calls for help, but no one was monitoring the repeater. Perhaps we were naive or perhaps we're sheltered by our relatively trouble-free small-town atmosphere, but we were surprised that nearly everyone responding mentioned the necessity for careful control and monitoring of an autopatch system to prevent abuse.

A sophisticated person learns to appreciate the ironies of life. Our club found itself in the proverbial Catch-22 situation: We could add an autopatch so that it would make good sense for someone to monitor the system, the result being we wouldn't really need the autopatch for emergencies — which was to be primary reason for installing one.

A member whose amateur license was older than a good portion of the membership, pointed out the obvious: It's easy to be seduced by gadgetry. We would do ourselves no service by investing in equipment to resolve a problem that could be overcome simply by being more enthusiastic club members and better amateur operators. **WR**

Rules & Regs

Jack Kelleher
W4ZC

E-mail:
w4zc@cais.com

International licensing broadened

On September 9th the FCC adopted a Notice of Proposed Rule Making (RM-8677; WT Docket 96-188) in the matter of Amendment of the Amateur Service Rules to Authorize Visiting Foreign Amateur Operators to Operate Stations in the United States. This proposed action is, in effect, proposed formal action by the U.S. to permit foreign nationals holding a valid CEPT or CITEL license to operate in the U.S. for limited periods. Here is an abbreviated text of the NPRM.

I. Introduction and Executive Summary

1. This Notice of Proposed Rule Making (Notice) proposes to amend the amateur service rules to authorize citizens of certain countries in Europe and the Americas to operate stations while on short visits in the United States (U.S.). The proposed amendment of our rules would facilitate expeditious implementation of two pending international reciprocal operating arrangements. These arrangements are intended to make it easier for U.S. amateur operators to operate stations temporarily in twenty-two European countries, eight South American countries, Mexico, and Honduras. They also would benefit amateur operators of these same countries by allowing them to operate stations in places where the service is regulated by the Commission.

II. Background

2. Currently, foreign amateur operators are authorized to operate stations in the U.S. under three circumstances. First, Part 97 of our rules provides operating privileges in the U.S. to citizens of Canada who hold amateur service licenses issued by the Government of Canada. Second, Part 97 of our rules provides operating privileges to citizens of some 76 countries, whose governments have entered into bilateral reciprocal operating arrangements with the U.S., who obtain non-renewable one-year permits to operate their amateur stations in the U.S. Finally, non- U.S. citizens who pass the required examinations are granted licenses in the same manner as U.S. citizens. This latter method is generally used by foreign operators who reside permanently in the U.S. or who are here for lengthy stays.

3. There are two pending reciprocal operating arrangements that offer to provide more convenient ways for foreign amateur operators to operate stations in the U.S. They are the European Conference of Postal and Telecommunications Administrations (CEPT) radio-amateur license, and the Inter-American Convention on an International Amateur Radio Permit (CITEL/ Amateur Convention). These negotiations were prompted by amateur operators who want to operate their stations during international travel without first obtaining a permit from each country visited.

A. CEPT radio-amateur license

4. Under CEPT Recommendation T/R 61-01 (CEPT Agreement), CEPT radio-amateur licenses are granted by the country of which the person is a citizen. By possession of these licenses, holders can operate an amateur station temporarily in any participating CEPT country without first obtaining another license or permit from the host country. The CEPT Agreement also provides for reciprocal operation between participating CEPT countries and participating non-CEPT countries. Three non-CEPT countries — Israel, Peru and New Zealand — are currently participating in the CEPT Agreement. With the U.S. as a participating non-CEPT country, U.S. citizens could operate

Amateur Radio Call Signs

Amateur Radio operators often ask the FCC what call signs have been assigned lately. This list shows the last call sign in each group to be assigned for each district, as of the first of October, 1996.

For more information about the call assignment in the Amateur Radio Service, see Section 97.17(f) of the FCC Rules, or contact the FCC's Consumer Assistance Branch, 1270 Fairfield Road, Gettysburg, PA 17325-7245, toll free 800/322-1117.

Radio District	Group A Am Extra	Group B Advanced	Group C Tech./Gen.	Group D Novice
Ø	ABØCW	KIØEP		KBØYOV
1	AA1QP	KE1GD	N1XXL	KB1BZV
2	AB2CD	KG2IM		KB2ZXJ
3	AA3OZ	KE3XO	N3YCJ	KB3BQL
4	AE4VG	KT4WL		KF4MIE
5	AC5JU	KM5DV		KC5WIR
6	AC6XR	KQ6JS		KF6GOG
7	AB7SQ	KJ7BP		KC7SVE
8	AA8YA	KG8YX		KC8EYJ
9	AA9TJ	KG9ID		KB9OPS
N. Mariana Is.	NHØA	AHØAW	KHØFK	WHØABF
Guam	WH2X	AH2DC	KH2QY	WH2ANR
Hawaii		AH6OU	KH7BM	WH6DCV
Amer. Samoa	AH8O	AH8AH	KH8DA	WH8ABF
Alaska		AL7QS	KLØAV	WL7CTY
Virgin Is.	WP2X	KP2CJ	NP2JL	WP2AIG
Puerto Rico	KP3V	KP3AN	NP3GJ	WP4NMM

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Thank you!

Worldradio is a two-way communication. Send in Amateur Radio information and news. Share your knowledge with your fellow amateur through ***Worldradio.*** We are most interested in your comments and suggestions. We would appreciate being placed on the mailing lists of radio club bulletins.

Subscriptions received by the 20th of the month will begin with the issue dated two months from the month of receipt, i.e., if we receive the subscription by April 20, your first issue will be June, which will be mailed to you in early May.

amateur stations temporarily in participating European countries and their citizens could enjoy similar operating privileges in the U.S. We have, therefore, requested the Department of State to apply for participation in the agreement as a non- CEPT country. We expect the agreement will be concluded this year.

B. International Amateur Radio Permit

5. The Inter-American Convention on an International Amateur Radio Permit (IARP). AG/doc.3216/95 (CITEL/Amateur Convention) is an arrangement that would allow visitors to operate stations temporarily in other countries of the Americas. The August 21-25, 1995, meeting of the Inter-American Telecommunication Commission (CITEL) Permanent Consultative Committee III: Radio Communications adopted a resolution submitted by the U.S. urging members to sign the CITEL/Amateur Convention. Participation in the CITEL/Amateur Convention would allow U.S. citizens to operate amateur stations in ten countries within CITEL, a component of the Organization of American States. Under the CITEL/Amateur Convention, individual amateur operators with an International Amateur Radio Permit (IARP) would have reciprocal operating privileges. Article 3 of the CITEL/Amateur Convention provides that an IARP may be issued by the home administration or, under authority delegated, by the member- society of the International Amateur Radio Union (IARU). The American Radio Relay League, Inc. (ARRL) has offered its services to the Department of State to conduct this work on a non- discriminatory basis, at no cost, charge, or expense to the United States Government.

6. On July 19, 1995, the ARRL filed a petition for rule making requesting amendment of the rules to implement the CITEL/Amateur Convention. ARRL further requests the Commission to acknowledge the arrangements to be made between the ARRL and the Department of State for the issuance of IARP documents to U.S. citizens for their use in other CITEL countries.

III. Discussion

A. Regulatory Procedures

7. Foreign Amateur Operators Visiting the U.S. We believe that U.S. participation in both the CEPT Agreement and the CITEL/Amateur Convention would benefit U.S. amateur operators who travel to Europe and to the Americas, as well as foreign amateur operators visiting places where the amateur service is regulated by the Commission. Arrangements of the types contemplated are authorized by the Communications Act. Those statutory provisions authorize the Commission to permit an alien, licensed by his or her government as an amateur operator, to operate an amateur station in the U.S., provided there is in effect a multilateral or bilateral agreement that allows such operation on a reciprocal basis. Therefore, in anticipation of U.S. participation, we tentatively conclude that the rules should be amended to authorize, by rule, citizens of participating CEPT countries holding CEPT radio-amateur licenses and citizens of participating CITEL countries holding IARPs to operate amateur stations in the U.S. temporarily.

8. We believe that the temporary period for operation in the United States under a CEPT radio-amateur license or IARP should be of sufficient duration to provide flexibility for foreign visitors on business trips and vacations, tourists and persons attending conferences, as well as students and visiting professors, to operate their amateur stations without the need to submit applications or take examinations well in advance of their visit. We are proposing to authorize up to 180 days within the immediately preceding five years. This would benefit foreign amateur operators who make several short-term visits to the United States during the five years, as well as those who make but a single visit. We expect that during such short-term visits, station operation by a foreign visitor would be of a relatively simple nature probably using a hand-held or mobile transceiver. We do not anticipate that sophisticated station operations such as beacon, repeater, or auxiliary station operations would be attempted. Our rules currently do not authorize a reciprocal permittee to engage in such special operations, and these rules would apply to these two new categories of reciprocal licensees as well. During a brief visit, the burdensome construction or transport of these more complex stations would be unlikely. Thus, proof of competence and knowledge of our unique rules in these advanced areas — which are requirements for our licensees — appear unnecessary. We believe that the underlying foreign license can stand as proof of qualification to properly perform, for a short period, the duties required for uncomplicated amateur station operation. A longer stay, however, would appear to warrant obtaining an amateur service license because of the likelihood of more sophisticated station operations. We request comment on our conclusion that foreign visitors with CEPT radio- amateur licenses and IARPs can operate amateur stations properly under our rules during short- term visits, based upon the underlying licenses that they hold from their own country. Additionally, comments are requested concerning our proposed definition of short-term visits as stays for 180 days within the immediately preceding five years. Any commenters supporting a longer or shorter period of time should provide an explanation of why such time periods would be more appropriate.

9. We believe generally that widespread access to information of the authorization status of transmitting stations promotes self-policing and discourages unlicensed stations from operating on the amateur service bands. We provide an accessible data base listing the amateur stations and operators that we authorize. The amateur service community further processes and disseminates this information electronically. Under the procedures proposed herein, operation would be authorized by rule rather than by the grant of a license or permit. Information on the status of holders of CEPT radio-amateur licenses and IARPs, therefore, would have to be obtained from the responsible agencies in the country of issuance. Considering the short time period

during which foreign visitors would be operating amateur stations, we do not believe it would be necessary for the Commission to routinely collect and disseminate the information. We have no objection, however, to the amateur service community doing so.

10. US Amateur Operators Visiting Foreign Countries. No amendments to our rules are necessary for operation by US citizens in foreign countries. Further, we do not contemplate that the Commission would issue individual licenses for operation in foreign countries nor maintain a data base of such information. To activate operating authority in Europe under the CEPT Agreement, a traveler would have to carry credentials explaining in English, French, and German that the person, if a US citizen and if a Commission-licensed amateur operator, is entitled to certain amateur station operating privileges in the specific European countries that have implemented the CEPT Agreement. For this purpose, we propose to rely upon (1) a public notice containing the necessary explanation, (2) the Commission-issued amateur service license document (FCC Form 660), and (3) proof of US citizenship. For the CITEL/ Amateur Convention, we have no objection to the mechanism that ARRL wishes to establish for the issuance of IARP documents to US citizens. We request comment on these conclusions and issues, including the desirability of relying upon a public notice or other document similar to that proposed for the CEPT Agreement.

B. Operator Privileges

11. Additionally, in view of the variations in operator requirements and privileges between countries and the temporary nature of the intended operations, the CEPT radio-amateur license or IARP should not be used to circumvent the license examination system of the host country. We propose, therefore, that no resident alien or US citizen, regardless of any other citizenship held, be eligible to operate an amateur station in the US under a CEPT radio-amateur license or IARP. We believe that the operating requirements for a resident alien in the US should be the same as that for a US citizen. We propose, moreover, that when a non-US citizen holding either a CEPT radio-amateur license or an IARP obtains a ten-year term Commission license grant, only the operator privileges of the Commission license apply. When a person, regardless of citizenship, obtains a Commission license, the skill level at which the person can operate a station properly in the US has been established accurately by our amateur service community. The volunteer examiners in the community determine through a series of increasingly difficult examinations in regulatory, operational, and technical matters the highest of the six classes of operator license at which the person can operate an amateur station properly under the Commission's rules for the amateur service. We request comment on these proposed safeguards for our amateur operator license examination system.

12. There are two classes of CEPT radio-amateur licenses and IARPs. Class 1 requires knowledge of the international Morse code and carries all operating privileges. It is, therefore, similar to our Amateur Extra Class. Class 2 does not require knowledge of telegraphy and carries all operating privileges above 30 MHz. It is, therefore, similar to our Technician Class operator license. We propose, therefore, to authorize for Class 1 operators the frequency privileges of Amateur Extra Class operators. We further propose to authorize for Class 2 operators the frequency privileges of Technician Class operators. Finally, we propose to add the CEPT radio-amateur license and the IARP to the rule providing for station identification by foreign visitors operating amateur stations in the US We request comment on these proposed operator privileges and station identification requirements.

IV. Conclusion

13. Accordingly, we propose to amend Part 97 of the rules to authorize, by rule, a person holding a CEPT radio-amateur license issued by a participating CEPT country or an IARP issued under the authority of a participating CITEL country to temporarily operate, for a period of 180 days or less, an amateur station in the US Citizens of these countries visiting the US, such as tourists, attendees at conferences, students and visiting professors, would benefit from having a convenient procedure available whereby they could operate their amateur stations while here in the US Additionally, US citizens who travel in Europe or in the Americas for short visits would similarly benefit. Comments are invited on the proposals described above.

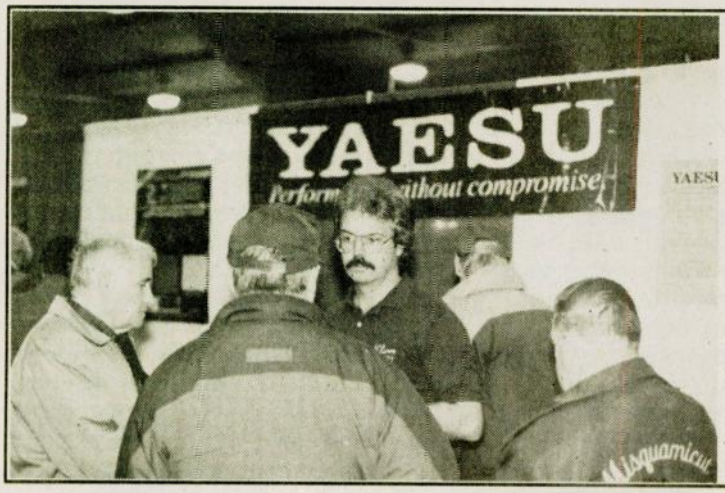
Comment dates

16. Pursuant to applicable procedures set forth in Sections 1.415 and 1.419 of the Commission's Rules, 47 C.F.R. §§ 1.415 and 1.419, interested parties may file comments on or before December 13, 1996, and reply comments on or before January 13, 1997. To file formally in this proceeding, you must file an original and four copies of all comments, reply comments and supporting comments. If you want each Commissioner to receive a personal copy of your comments, you must file an original plus nine copies. You must send comments and reply comments to Office of the Secretary, Federal Communications Commission, Washington, D. C. 20554. You may also file informal comments by electronic mail. You should address electronic mail comments to mdepont@fcc.gov. You must put the docket number of this proceeding on the subject line ("WT Docket No. 96-188"). You must also include your full name and Postal Service mailing address in the text of the message. Formal and informal comments and reply comments will be available for public inspection during regular business hours in the FCC Reference Center, Room 239, Federal Communications Commission, 1919 M Street, N. W., Washington, D. C. 20554.

Contact Person

20. For further information concerning this proceeding, contact Maurice J. DePont, Wireless Telecommunications Bureau, 202/418-0690. WR

Paul Revere Virus: This revolutionary virus warns you of impending hard disk attack — once if by LAN, twice if by "C." —ARNS *Bulletin,* Alliance, OH



The ham who put Albania on the radio map, Chip Margelli, K7JA.

Chip Cohen, Ph.D., N1IR, explained fractals in a way that all could understand.

Boxboro

(continued from page 1)

DXCC update, Bill Moore, NC1L; Weather and the Ham, Kenn Schaffer, W1FLD; VHF/UHF, Lew Collins, W1GXT; Wake Island (KH9) DXpedition, Don Greenbaum, WB2DND; 50 MHz, Bob Mobile, WA1OUB; Troubleshooting, Mike Tracey, KC1SX; 10 GHz, John Allen, K1FWF; AMSAT, George Caswell, K1MON; Mobile and Apartment Operation, William Davis, KB1AXF; Packet, Dick Dougherty, KA1TUZ; Field Day, Scott Robinson, WT1T, Tower Approval, Fred Hopengarten, K1VR; QRP, Jim Fitton, W1FMR, and a lot more.

There were over 100 exhibitors inside, and a flea market outside. FCC exams for new and upgrade licensing were given. Saturday night saw a buffet banquet, awards, show and a dance.

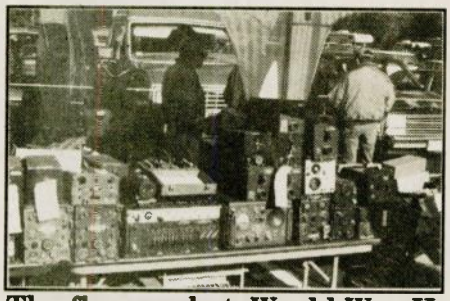
Plus, you had the opportunity to operate special event station W1A.

Knowledge is Power — Craig Clark, NX1G, advises which books illuminate.

The gang from Hy-Gain fielded many questions.

No, we didn't leave anything off, that's it: W1A. And yes, there were lots of stations calling to work that one.

On a dollar-for-dollar basis it's pretty hard to beat a ham convention for the amount of information obtained. And, what may be the best reason of all to go: Seeing old friends and making new ones. WR



The flea market, World War II with the original cast. —*photos by N6WR*

Drill

(continued from page 1)

hour we had many hams ready for a long day of work.

Several shelters were set up with Rob Stormer, N3WRK, at the first one. One ham, Tammy Wolfgang, KA3TCW, crossed a rain-swollen creek with her two daughters to provide the town of Summerville their only communications that day. The concern for the community and her radio skills won over the local municipal directors, and she sent much needed information to both EMA and 911. As the day progressed the rain finally subsided. As more information came in, the scope of the disaster became apparent. The flooding had affected much

of Jefferson County.

More amateurs arrived at the 911 center to receive their assignments, with Randy Wolfgang, KA3OJL, working the radio that connected his wife Tammy, KA3TCW in Summerville with the center. Roger Hackenberry, KA3TWB took over the voice and packet systems that connected incident command with 911 and EMA. Dave Crise, N3GPM, was just getting ready to go to the Brookfield High School shelter, when he received word that his wife's car had gone into a ditch. He was relieved from duty to go to her assistance, and Rob Stormer, N3WRK, moved to the shelter from the Brookville fire hall, and Bob Stormer, K3FUD, who was with one of the commissioners, was relieved of that duty to respond to the high school shelter.

Although it was hectic, communications were moving smoothly; rescues were requested, as was the National Guard, and the Governor, to name a few. George Stormer, N3AHV, was sent to relieve me at incident command, and Vickie was relieved at the center when Debbie Crise, NV3B, returned. Dave and Roger Whitney, K3VWE, responded to the high school. We did not know it, but Debbie had been in an accident — the car had fallen through the road into a six-foot-deep culvert, where the road had washed away. She never complained of the pain — just continued working late in to the night.

Late that night, Jeff Brown, NS3N, responded to the high school shelter while Maryann Brown, N3NWQ, monitored from their home.

Airborne assessment

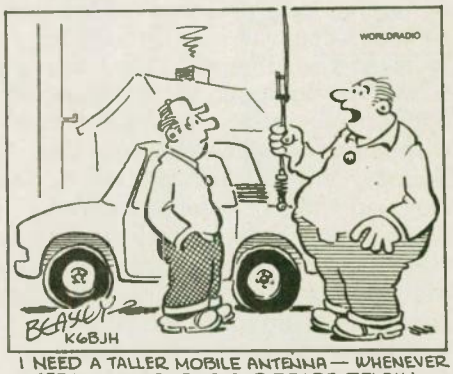
The decision was made the next day to try to get Commissioner David Black up in a helicopter to view the damage to Jefferson County, with Randy Wolfgang, N3OJL as his communicator. A pilot himself, Randy had a conversation with the helicopter's pilot, and soon Commissioner Black was airborne touring the county, with Randy relaying the commissioner's damage reports back to the EMA center director, Linda Holmes. The ability to disseminate information county-wide helped speed damage assessment, and quickly provided the information for the county to arrange for necessary help from the state and federal governments.

In Puxsutawney, Chuck, AA3NL, Tim N3RSS, and Ryan, N3WUT, Merrow and John Burkett, N3HJI were on standby in case of need. The fire department communications held up however, and their services were directed to other sites. Sam Puleio, KA3PKC and Cliff Weinberg WB3GAD assisted at the Puxsutawney shelter, and were later joined by John, N3HJI.

For the next two days hams provided communications between EMA and the local government and shelters. Many other Jefferson County hams, and those from outside the county responded. As in all disasters of this magnitude, some of their stories may not have been told, or some names may have been inadvertently omitted. To all who helped, or stood ready to help, thank you. The only regret is that some of your names may not have been recorded here.

On 21 July, at 5 p.m., normal communications had been reestablished, and our work was finished.

Jefferson County is located in Northwestern Pennsylvania, with a population of approximately 50,000. Very few escaped this disaster completely unscathed. Preliminary reports from FEMA have put the initial cost of the flooding at more than 350 million dollars. One of the hardest hit communities, Summerville, lost over one quarter of the entire town. However this county, which consists of closely-knit small towns and communities whose lives were turned upside down by this disaster, all worked together to help one another, and not one life was lost to the flood waters. Amateur Radio was there to provide some of that help. **WR**



I NEED A TALLER MOBILE ANTENNA — WHENEVER I GET IN MY CAR, THIS ONE DROPS BELOW LINE-OF-SIGHT

Washington State Net provides communication

Gordon J. Grove, WA7LNC, Spokane (WA) County Emergency Coordinator

Here is another example of how Amateur Radio can provide "the vital link" when circumstances beyond our control cause regular communications to fail.

On Friday, 6 September 1996, an outage of long distance telephone service occurred in the 509 area code. At the time of the outage, a woman in Spokane, Washington, in Spokane County, was on the line with a person somewhere in Grant County, 100 miles away, trying to persuade that person to agree to check into a hospital for some necessary care. In the middle of that conversation, her long-distance connection was broken and, of course, it could not be restored. The woman called the Spokane County Sheriff's Office, desperate to finalize her urgent discussion with the person in Grant County. The Spokane County Sheriff's Office had no available means to reach Grant County by standard telephone either, effected by the same outage. The law enforcement TTY was tried, but there was no confirmation from Grant County that the message had been received.

Bill Hansen, KB7EPR, of Spokane County's Department of Emergency Services, called Spokane County ARES EC Gordon Grove, WA7LNC, to ask him if he could help by finding some communication resource that could immediately link Spokane County to Grant County. Bill, who had not yet learned of the exact nature or the full extent of the outage, added that he was not sure if telephones were even operational in Grant County. Gordon had to consider which of the various modes of communication at Amateur Radio's disposal would provide the quickest and most reliable link. It was 6:45 p.m., and he knew that Don Felgenhauer, K7BFL, an ARES member, was probably on the Washington State Net, a CW traffic net on 3590 kHz which meets each evening at 1830 hours local time. A telephone call not only confirmed that Don was on the net, but that he was the Net Control Station, as well.

After a quick explanation from Gordon, Don immediately tagged KA7EKL, Harvey Heer in Ephrata, Washington (the Grant County seat), to stand by for traffic. Then Don made contact with Bill on the local ARES/RACES repeater where they arranged to make contact with each other via telephone. After being briefed, Don then explained the matter further to Harvey who had already made telephone contact with the Grant County Sheriff's Office dispatcher. After explaining the situation to the Grant County dispatcher and then to personnel at the Ephrata Police Department (where the TTY message would actually have been received), Harvey was able to determine that the TTY message had indeed been received in Ephrata. He sent the information to Don who relayed it to Bill, thereby completing the necessary process of confirmation.

Although Amateur Radio hadn't exactly just saved the world, it had provided a quick and necessary service to two county sheriff's offices and some worried citizens in a moment of need. The task was a relatively small one, and the timing of the need was just right, but the service was accomplished in a rather high profile atmosphere with public service agency officials aware and watching. They will remember that we were there when they needed us and that the traffic got through. Amateur Radio as a public service resource marches on, and so does the contribution of CW, which is by no means dead or forgotten. **WR**

Ariane 502 to carry Phase 3-D satellite

In a published report released 26 September, by the European Space Agency (ESA), Mr. Jean-Marie Luton, Director General of ESA, and Mr. Alain Bensoussan, Chairman of CNES (the French Space Agency) announced that the launch of Ariane 502 has now been tentatively set for mid-April, 1997. It was also confirmed that the Phase 3-D International Amateur Radio Satellite will be on this flight. The other payloads are to be a pair of technological measurement packages for validation of the launch vehicle's ability to place two satellites into a geostationary transfer orbit (GTO).

These announcements came during a joint ESA-CNES press conference at ESA Headquarters in Paris called to outline the respective plans of the two agencies to correct identified deficiencies in the Ariane 5 launch vehicle.

The actions are in direct response to a comprehensive report submitted in July by the Ariane 501 Inquiry Board that was chartered to investigate the loss on launch of the first Ariane 5 booster in early June.

In the announcement, Mr. Luton and Mr. Bensoussan outlined several specific actions that are now being taken by ESA and CNES to assure the correction of software contained in the Ariane 5 inertial reference system.

Errors in this software were previously reported by ESA as being one of the primary causes of the Ariane 501 failure. Corrective actions include making changes to the Ariane 5 Functional Simulation Facility to make the qualification tests more representative of the flight environment, as well as performing a comprehensive review of all the embedded software contained in the launch vehicle.

AMSAT is a not-for-profit, 501(c)(3) educational and scientific organization that was first chartered in Washington, DC, USA. Its objectives include promoting space research and communication by building, launching and controlling Amateur Radio spacecraft. Since its founding, over 25 years ago, many other like-minded organizations have been formed around the world to pursue the same goals and who now also share the AMSAT name. Often acting together, these groups have used predominantly volunteer labor and donated resources to design, construct and, with the added assistance of government and commercial space agencies, successfully launch, over two dozen Amateur Radio communications satellites into Earth orbit.

The Phase 3-D satellite, now under construction with the help of over a dozen AMSAT groups on five continents, will be the largest, most complex, and most expensive Amateur Radio satellite ever built.

For more information contact:

In North America:
AMSAT-North America
Keith Baker, KB1SF
Executive Vice President
1324 Fairgrounds Road
Xenia, Ohio 45385-9514
Phone/Fax: 513-429-5325
e-mail to: kb1sf@amsat.org

In Europe:
AMSAT-Germany
Werner Haas, DJ5KQ; Vice President
Holderstrauch 10
D-35041 Marburg, Germany
Phone: (06421) 684121
Fax: (06421) 285665
e-mail: dj5kq@amsat.org **WR**

10 Bands -- 1 MFJ Antenna!

Full size performance . . . No ground or radials

Operate 10 bands: 75/80, 40, 30, 20, 17, 15, 12, 10, 6 and 2 Meters with one antenna Separate full size radiators . . . End loading . . . Elevated top feed . . . Low Radiation Angle . . . Very wide bandwidth . . . Highest performance no ground vertical ever . . .

Operate 10 bands -- 75/80, 40, 30, 20, 17, 15, 12, 10, 6 and 2 Meters -- with this MFJ-1798 vertical antenna and get *full size performance* with no ground or radials!

Full size performance gives you high efficiency for more power radiated. The result? Stronger signals and more Q-5 QSOs.

Full size performance also gives you exceptionally wide bandwidths so you can use more of your hard earned frequencies.

Full size performance is achieved by using separate full size radiators for 2 through 20 Meters and highly efficient end loading for 30, 40 and 75 /80 Meters.

You get very low radiation angle for exciting DX, automatic bandswitching, omni-directional coverage, low SWR and it handles 1500 watts PEP SSB.

MFJ's unique *Elevated Top Feed*™ elevates the feedpoint *all the way to the top* of the antenna. It puts the maximum radiation point high up in the clear where it does the most good -- your signal gets out even if you're ground mounted.

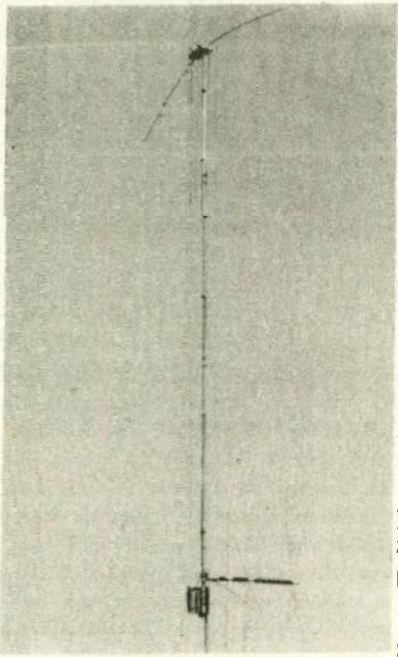
It's easy to tune because adjusting one band has minimum effect on the resonant frequency of other bands.

Self-supporting and just 20 feet tall, the MFJ-1798 mounts easily from ground level to tower top -- on small lots, backyards, apartments, condos, roof tops, tower mounts.

Separate *Full Size* Radiators

Separate full size quarter wave radiators are used on 20, 17, 15, 12, 10 and 2 Meters. On 6 Meters, the 17 Meter radiator becomes a 3/4 wave radiator.

The active radiator works as a stub to decouple everything beyond it. *In phase* antenna current flows in all parallel radiators.



MFJ-1798
$269.95

This forms a very large equivalent radiator and gives you incredible bandwidths.

These radiator stubs provide automatic bandswitching -- there is absolutely *no loss* due to loading coils or traps.

End Loading

On 30, 40, 75/80 Meters, end loading -- the most efficient form of loading -- gives you highly efficient performance, excellent bandwidth, low angle radiation and automatic bandswitching.

MFJ's unique *Frequency Adaptive L-Network*™ provides automatic impedance matching for lowest SWR on these low bands.

Tuning to your favorite part of these bands is simple and is done at the *bottom* of the antenna.

No Ground or Radials Needed

You don't need a ground or radials because an effective counterpoise that's 12 feet across gives you *excellent* ground isolation.

You can mount it from ground level to roof top and get awesome performance.

No Feedline Radiation to Waste Power

The feedline is decoupled and isolated from the antenna with MFJ's exclusive *AirCore*™ high power current balun. It's wound with Teflon® coax and *can't* saturate, no matter how high your power.

Built to Last

Incredibly strong solid fiberglass rod and large diameter 6061 T-6 aircraft strength aluminum tubing is used in the main structure.

Efficient high-Q coils are wound on tough *low loss* fiberglass forms using highly weather resistant Teflon® covered wire.

Teflon® is registered trademark of Dupont

MFJ *Super Hi-Q Loop*™

MFJ-1786
$299.95

MFJ's *tiny* 36 inch diameter *high efficiency* loop antenna lets you operate 10 to 30 MHz *continuously* -- including the WARC bands!

It's ideal where space is limited -- apartments, small lots, mobile homes, attics, motor homes.

Enjoy both DX and local contacts when you mount it vertically. You get *both* low angle radiation for excellent DX *and* high angle radiation for local close-in contacts. Handles 150 watts.

Super easy-to-use! Only MFJ-1786 *Super* Remote Control has *Auto Band Selection*™. It auto-tunes to your desired band, then beeps to let you know. No control cable is needed.

Fast/slow tune push buttons and built-in two range *Cross-Needle* SWR/Wattmeter lets you quickly tune to your exact frequency.

All *welded* construction, no mechanical joints, welded butterfly capacitor with no rotating contacts, large 1.050 inch diameter *round* radiator -- not a lossy thin flat-strip -- gives you highest possible efficiency.

Each plate in MFJ's *superb* tuning capacitor is welded for low loss and *polished* to prevent high voltage arcing. It's welded to the radiator, has nylon bearing, anti-backlash mechanism, limit switches and a continuous *no-step* DC motor for *smooth precision* tuning.

A heavy duty 1/8 inch thick ABS plastic housing with ultraviolet inhibitors protects it.

MFJ-1782, $269.95. Same as MFJ-1786 but remote control has only fast/slow tune buttons.

Super 80/40M Vertical

MFJ-1792
$159.95

Designed as a *high performance* antenna for 80 and 40 Meters, the MFJ-1792 features a *full size* quarter wave radiator for 40 Meters - - that's a full 33 feet of ruthless radiating power.

End loading -- the most efficient form of loading -- is used for 80 Meters. It's accomplished by a virtually lossless 4½ foot capacitance hat and a high-Q coil wound with Teflon® wire on a *low-loss* fiberglass form.

The *entire length* radiates power.

High strength 6061-T6 aluminum tubing, super strong solid fiberglass insulator, *Frequency Adaptive L-Network*™, heavy duty *swing* mount. Handles 1500 watts PEP. Requires guying and radials, counterpoises or ground screen.

MFJ-1793, $179.95. Same as MFJ-1792 but includes *full size* 20 Meter quarter wave radiator.

Box Fan Portable Loop

MFJ-1780
$229.95

No, it's not a fan -- it's a high efficiency portable loop antenna that's about the same size and shape as a 2x2 foot box fan, complete with carrying handle.

Carry it like a suitcase, tuck it in a corner of your car or check it as baggage on a plane.

When you get there, set it on a table or desk and enjoy ragchewing or DXing.

All welded construction, covers 14-30 MHz *continuously* including WARC bands, handles 150 watts. Remote control has fast/slow tune buttons. Separate control cable not needed.

MFJ *halfwave* Vertical

6 bands: 40, 20, 15, 10, 6, 2 Meters . . . No radials or ground needed!

MFJ-1796
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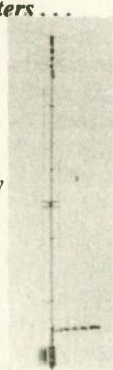
Operate 6 bands -- 40, 20, 15, 10, 6 and 2 Meters -- with this MFJ-1796 *ground independent halfwave* vertical antenna! No radials or ground ever needed!



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MFJ's *lighted* Cross-Needle Meter shows you SWR, forward and reflected power *simultaneously*. Read peak/average on 300/30 watt ranges.

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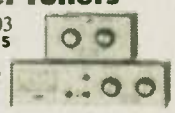

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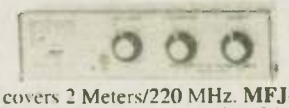

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A Memorable QSO

Dave Oberle, NE5E

I have been a licensed Amateur Radio operator for 21 years. In reflection, some of my most enjoyable experiences have been human-interest type episodes; these have given me pleasure at the time of the event, but also offer me lasting memories that continue to live on.

One interesting story started on the evening of 3 September 1995; I was listening around on the 20 Meter band and heard a QSO in progress. One of the stations was VE7DQA. As I continued to listen, I found out that he was operating from a Canadian Coast Guard Lighthouse Station on Trial Island, near Victoria, B.C., Canada. His name was Percy.

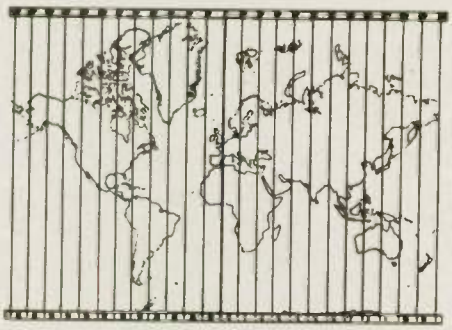
As soon as he signed, I gave a call: "VE7DQA this is NE5E in San Antonio, Texas." Percy answered me and we exchanged the usual greetings, signal reports, and weather information. I quickly got to the point by telling Percy that in about a week's time my wife and I would be flying from San Antonio to Seattle, and from there we would be taking the *Victoria Clipper,* a cruise ship, from Seattle to Victoria.

At that point, Percy informed me that the *Victoria Clipper* would pass right by his location, just outside Victoria harbor. I told him I would look for his piece of geography and wave as I passed by.

The big day arrived, and my wife and I flew to Seattle. We then went aboard the *Victoria Clipper* for our sea journey to Victoria. As we sailed north, an inquiry to the captain brought the information as to where we should watch for the lighthouse to appear.

Soon there it was, in all its glory. It was mind boggling to think that the signal from my wire loop had traversed half way across the U.S., and here in full view, was the distant location where my signal was heard and recognized.

It is a real thrill to work a rather unusual and exotic station. It is an even greater thrill to actually view the distant site of your QSO. I hope you get that same opportunity to one day view one of your exotic and unusual QSO sites — in person! WR



CATZ

To help commemorate 25 years of ***Worldradio***, we announce a new award to be 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-hour 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.

Those receiving the CATZ award will have their name and call sign reported in the ***Worldradio*** DX column. WR

Hamming along the Pacific Crest Bicycle Trail

Bil Paul, KD6JUI

This year's bicycle tour along the Pacific Crest Bicycle Trail involved 11 cyclists (6 men and 5 women, ages 30 through 65), who met at Lake Tahoe, California, on 7 September. The trip had been advertised as being along the toughest section of the Trail, and on the final day, 15 September, no one doubted that description.

There were major four- to five-thousand feet elevation gain passes to climb, including Monitor Pass, Devil's Gate and Conway summits, Tioga Pass into Yosemite Park, and a major climb to Shaver Lake. The 60-year-old cyclists among us were among the best "mountain goats."

I was the only ham on the trip this year, and my hamming was almost entirely of the HF variety. I operated mostly 40-meter CW with some 20-meter work on the side. Even though propagation conditions continue to be poor to fair because of low sunspot activity, I had more luck getting out this year than in all the previous years' tours. Experience counts. Operating from campgrounds ranging from 6- to 8,000 feet elevation to deep in canyons with my trusty Wilderness Radio Sierra multiband CW transceiver (costs several hundred dollars as a kit) and a 20-30-40-meter home-made inverted V antenna fed by RG8-X coaxial cable, I had as many contacts as I wanted. The maximum antenna height ranged from 30 to 40 feet. QSOs ranged from up and down the West Coast to as far away as the East Coast. Efforts to contact Japan on 40 Meters weren't successful.

The 12-volt battery pack for the Sierra transceiver was charged by a 10-watt solar panel during the day while riding. One interesting discovery was that when I got up during the night to operate on 40 Meters, if the temperature was down in the 30s, the cold lead-acid gel cell would lack power. I learned to keep the battery pack in the sleeping bag with me . . . talk about cowboys sleeping next to their horse!

Three of the contacts I had were with other low-power enthusiasts. I learned that one of them was using a Sierra as well, in Lake Oswego, Oregon. When operating in Yosemite Valley, surrounded by stunning stone walls rising 3,000 feet or more, I was pleasantly surprised that my 2 watts still ricocheted out and landed me several California contacts.

Next year's mountainous tour, which is free (everyone is self-supported, with no support vehicle), will start at Pine Flat Reservoir not far from Fresno and will end in the mountains around Los Angeles (with a desert section). I'm always looking for hams to join the tour and provide two-meter communications. If interested, contact me and I'll put you on the 1997 mailing list. My address is: 337 Estrella Way, San Mateo, CA 94403-2940. WR

National repeater coordination

Uniform frequency coordination of repeaters and recognition of coordination by the Federal Communications Commission may yet become a reality. A tentative agreement on the formation of a national frequency coordination office has been worked out between the nation's repeater coordinators and the FCC.

Unified standards and guidelines for coordinating amateur radio repeaters in the United States, its territories and possessions could be a major step closer to reality because of a tentative agreement reached 13 September.

The American Radio Relay League and the National Frequency Coordinators Council have agreed on the wording for a Memorandum of Understanding between both groups.

The agreement stems from a meeting between the Council's Board of Directors and the League's Ad-Hoc Repeater Committee. The meeting took place at the ARRL's National Convention in Peoria, Illinois. Under the agreement, a new National Frequency Coordinator's Office will be established. The office will maintain a national database for all matters affecting repeater coordination.

The new office takes a strong role in coordination matters. It will serve as a communications liaison, or single point of contact between the Council and the FCC. It will act as a repository for information about standards and procedures for frequency coordinators throughout the US and will contain procedures for resolving coordination and interference disputes involving amateur repeaters. The office will also oversee identification, certification and de-certification of frequency coordinators, based on standards to be developed by the Council.

The Council is already made up of the nation's currently recognized repeater coordinators. It will develop and recommend for adoption what the Council calls fair and equitable procedures for frequency coordination.

The Council will also gather and supply data to the League about band occupancy and usage, this, reportedly as part of an effort to make sure that listed radio systems really exist and are not simply paper repeaters.

The agreement calls for the ARRL to recognize the Council's independence and to provide what's called suitable resources and support to the Council. The League would also provide radio amateurs with information on how to contact frequency coordinators certified by the Council.

The Agreement calls on both groups to use their resources to achieve common goals, especially on issues involving amateur regulatory, technical or operating policies.

But there are unaddressed issues, too. The Memorandum of Understanding makes no mention of repeater users or other non-relay spectrum users. Do these hams or others have any rights about decisions on who can put a repeater on the air and who will not? The Memorandum doesn't say. Nor is there mention of protecting existing repeater operating policies or assurances for new repeaters trying to get on the air.

The Frequency Coordinator's Office can't be created until the League's Board of Directors approves the Memorandum of Understanding. Whether that will happen is not guaranteed.

The League's Board meets in late October. Until then, as an amateur, about the only way you can have a say in adoption of this sweeping new set of rules about repeater coordination is by contacting your Division Director.

The next step is up to the ARRL Board of Directors. They will meet and discuss the tentative agreement on 24-25 October.

AO-13 re-entry

AMSAT Oscar 13 will probably self destruct the end of November, according to Miguel Kassis, PY5BYE. He says AO-13 will re-enter the earth's atmosphere and burn up at about 11:42 UTC on 30 November. PY5BYE says that he bases the projected demise of AO-13 on scientific data that includes combined effects of Earth's atmosphere flattening and rotation and random variation in atmospheric density. At this moment atmospheric drag is the principal orbital perturbation for the dying satellite.

Hong Kong calls

Brett Graham, VR96BG, reports that hams in Hong Kong will be allowed to use several prefixes to commemorate the transfer of sovereignty over the territory from the United Kingdom to the People's Republic of China on 1 July 1997. At the request of the Hong Kong Amateur Radio Transmitting Society, Hong Kong amateurs will be allowed to change the numeral in their call sign to 96 during 1996, to 97 during 1997, and to 98 during 1998.

Graham says that Hong Kong amateurs began to use these new prefixes on 10 September, with a contact between VS96BG and VR96GO. The Hong Kong club will announce later the details of a new award to be offered to amateurs for contacting stations using these special prefixes.

All Hong Kong amateurs have held licenses with call signs using the prefix VR2 for several years. Those previously holding VS6 calls are allowed to continue to use the VS prefix through 1 July 1997. The VRA to VRZ block allocated by the ITU to the United Kingdom will be transferred to the Peoples Republic of China at that time. The only other use of that block at present by amateurs is on Pitcairn Island, where VR6 calls are still in use.

Six Meters Worldwide

Ken Neubeck, WB2AMU

Six Meters is pretty much a band of international status. That may come as a surprise to some, but it is interesting to take note of the development of six-meter activity around the world, in order to gauge the DX potential of the band. The band has made a remarkable comeback with steady growth in the US and Canada over the past few years, and it is making similar headway in other countries. Privileges have been expanding for hams in other countries to operate on 6, with changes in some countries taking place as this goes to print.

One of the problems for hams in other parts of the world is that six meters is not necessarily allocated as an Amateur Radio band as it is in the United States. Indeed, the frequency is often allocated to the broadcast television services, even though the frequency may not be in use. That is the case in New Zealand where only a few dozen permits are issued to hams to operate on the Magic Band. Permits are issued only if strict conditions are met: Adequate distance between the ham station and the TV station as one example. Permits are issued to a fixed location only, and no mobile or portable operations are permitted. New Zealand's hams have been operating under this handicap for several years and they have been trying to improve conditions there.

Australia has a significant ham population operating on the Magic Band and has fewer restrictions. Just about the longest DX that can be worked on the Magic Band is that between the US and Australia. It was done during the last sunspot peak, a few years ago. My friend, Frank Moorhus, AA2DR, was able to work Ron Graf, VK4BRG, via a multiple hop F skip that probably had an additional link via sporadic-E, in October of 1991. What was particularly exciting was that after Frank worked Ron using his home station, he went out to his truck and worked Ron a few minutes later using his Saturn Six and 100 watt mobile rig! This type of opening is very unpredictable but garners great rewards to those who monitor the band on a daily basis, particularly during months of high solar activity during the fall and winter season.

Europe was an area that, until the 1980s, saw restrictions similar to New Zealand's, and in some countries, no operating privileges at all. Now with these restrictions lifted, the Magic Band is becoming quite popular in Europe, particularly during the summertime sporadic-E season. It is not uncommon for transatlantic contacts to be made between Europe and the US during the summertime via double-hop and triple-hop sporadic-E skip. Hams on both sides of the Atlantic anxiously await the next sunspot peak that will occur by the end of this decade as F2 contacts during the fall and winter will be more common.

Yet, there are still a few areas in Europe that have restrictions. For example, in Spain, hams who obtain permission for six-meter operation use the prefix EH instead of EA, so EA1TA becomes EH1TA when operating on 6. In France and Italy some existing frequency restrictions as to where hams may operate are on the verge of being lifted. Six-meter operation is not allowed in Monaco, and a number of the former USSR countries do not yet have official Amateur Radio status for the Magic Band. In the Ukraine hams have been monitoring terrific sporadic-E conditions but the band is not yet an official Amateur Radio band. The Ukraine's radio amateurs are quite active on the HF ham bands and they are working hard to try to get permanent six-meter privileges.

Six meters is making headway in certain areas of the continent of Africa, primarily in northern and western countries, with some activity from South Africa. Cecil Rourke, CT3FT, is an often-heard station from Madeira Island. Morocco is another popular site for vacationing hams from Europe to operate six meters. Africa is an area that could see a lot more growth for the six meter band in the future.

The Magic Band is popular in a number of South American countries, particularly in Argentina, Venezuela and Brazil. Hams in the US typically work these stations using F2 skip during the sunspot peak, although a number of hams in the southern US are able to work into Argentina during the equinox months using TE (trans-equatorial skip) throughout the sunspot cycle. There are many different grid

squares that are covered by just Argentina and Brazil alone, so one should never stop trying to work every new call sign that is heard from these two countries. The north-south path will be the first and most common path for US stations when the F2 activity begins around 1998. I remember working about four South American countries during the last solar cycle and hearing about a half dozen more.

Six Meters is popular in Japan as a DX band, where Japanese hams can work all around the Pacific area during their summer sporadic-E season. Working DX countries such as Korea, China, Taiwan, Hawaii and Alaska are possible during good sporadic-E conditions. During the solar maximum years, F2 contacts into Europe and the western US are possible. The Japanese are fortunate that they have fewer worries with TVI than their US and European counterparts, as their television band begins above 100 MHz. However, there is some concern with the second harmonic of 6M with the audio on one of the channels possibly requiring some filtering.

The purpose of this article is to make North American Amateur Radio operators aware of the present status of the Six meter band on a worldwide basis, and what DX will be reasonably possible for us to work during the upcoming solar maximum. I will be covering the subject of six meters as an international band in more detail in an upcoming revision of my book, *SIX METERS, The Magic Band*, in 1997.

There are nearly 200 hams who have achieved DXCC on six meters at this point, and it appears that this number could double by the end of the next solar peak, given the number of countries that are now on the band. A modest station will be sufficient to work many of these stations, typically 100 watts and some sort of directional antenna. However, dipoles and verticals are also sufficient antennas when conditions are good.

What I find most enjoyable is that one can operate a portable setup or mobile setup on this band with minimal difficulty. It is not too hard to work DX this way, either. I worked the Bahamas and Cuba from my car, which was parked in the driveway of my New York QTH, during summertime sporadic-E openings in the past. I know that upcoming F2 openings will be just as strong as those sporadic-E openings were.

Remember that DX will still not be an everyday occurrence on six meters, as it would be on 10M during the solar peak. Openings may vary between half an hour to two hours in duration. This is what makes the band so challenging and interesting! Those who regularly listen from 8 a.m. to 5 p.m. local time during the fall and winter months, 1998 through 2002, will be rewarded for their efforts! If an F2 opening takes place between your area and Europe, it is possible for you to work up to a dozen different countries, given the high level of 6M activity in Europe. Additionally, in general F2 openings tend to cover a somewhat greater area than do sporadic-E openings.

Aurora contacts will be more frequent during the solar maximum years, particularly during the equinoxes. Contacts between Alaska and the contiguous 48 states become possible during an intense aurora opening. With the combination of F2, aurora, and sporadic-E skip, it will pay to monitor the band every day during the solar maximum. The likelihood of *something* happening becomes greater!

My thanks to Neil Carr, GØJHC, Bob Gyde, ZL3NE, Hatsuo, JH1VOK and Alex, UR4LL, for their contributions in the preparation of this article. WR

CODE: A matter of attitude?

Fred Essex, W6TJO

The sides for and against the value and merits of CW have long since been drawn. Those holding an opinion are usually locked into their position so any thought, other than their own, immediately triggers a predictable rationale for their point of view — right or wrong. And therein lies the problem: It is not a question of right or wrong, old concept vs. new concept, or whether a pragmatic definition labels it a buggywhip concept or a 21st century necessity.

It wasn't that many years ago when a minimum CW speed for a ham license was no less than 13 words per minute. The text sent was five minutes in length and the prospective ham had to copy one minute solid from within the text. There was no argument or discussion about the use of CW, it was just part of the license requirement.

Later when applying for a ham license I was lucky. I just had to copy 5 wpm from within the five minute text sent *and then send a* minimum of 5 wpm for a solid minute. Yes, the applicant had to prove his ability to send, even at that speed. And this was in front of a FCC examiner, too! No VEs, then.

A full three months passed before the Novice license was issued and then I had one full year to upgrade or lose my ticket. That was part of becoming a ham. The minimum speed had been cut to 5 wpm to help you get on the bands, but twelve months later you were either a General or an ex-ham. You had a choice of using phone on 2 Meters or CW on 80, 40 or 15.

So, I did as many other Novices. Starting with a straight key on 40, slowly, nervously and hesitant at first, but little by little without realizing it, the speed increased and three months later I sat for the General exam and passed. No, I didn't listen to CW tapes; they can

give a false sense of security. The pressure of getting on the bands and toughing it out rewards you with a sense of confidence.

During those three months I did not listen to the phone bands. Sure, it was tempting to see what was coming in, but that was to be my personal reward for upgrading.

It was not totally unexpected that many of the Novices who went immediately to 2 Meters . . . intending to get to CW later . . . never upgraded and lost their calls. They were off the air.

The point of all this: We accepted the requirements set forth. We had to learn CW to become a ham. So we did it. I don't recall others complaining about the code, as such. The comments were more along the line of trying to determine the difference between the letter "H" and the number "5."

To me, the reasoning offered today for eliminating the requirement reminds me of a youngster in school saying *"I don't need to learn how to do math, I've got a calculator," or "Geography is a waste of time. The airline pilot knows where to go. Why do I have to know where Paris or Toronto are?"*

When I was in grade school and raised the question about the math requirement I was told flatly that math is more than numbers; it helps the brain to think, reason and analyze. In my ignorance, which I thought was logic, I tried to find reasons *not* to do things but reluctantly I accepted their view. And now am I glad I did.

Have I used CW much? Not really, maybe 20% of air time, if that. But it was a requirement to enter the finest hobby and service in the world.

Because it's still needed to earn that Extra ticket, once I retired I got out the paddle. Bit by bit the speed came back and even at retirement age I had that great overwhelming feeling of accomplishment that envelopes you when you hear those beautiful words: You *passed!* **WR**

You too can homebrew!

Mike Greenfield N9JIY

Years ago, frying a tube would cost a homebrewer a week's wages. Today, most transistors are less than a quarter, and other components are just as cheap. So, homebrewing should be really popular — but it's not. Why?

Well, components were more manageable in those days. Transformers had big brackets, and big air variables were used for tuning. Tubes like salt shakers were mounted in sockets the size of fifty-cent pieces. Part numbers were large with things mounted on a chassis, like a car or truck.

Today's cheap components are tiny, bracket-less, label-less wonders designed for PC boards. They don't mount in sockets for easy change when you fry one! There is no chassis! How's a guy (even with trifocals) going to relate to these things? Well, it's simple. Restore components to their former bracketed, leaded, labeled, socketed, chassied glory. It's ugly, but it works, and you can use the same components over and over.Want to do a homebrew project? Here's how.

Cut out and *burn* that picture showing the finished project with components gorgeously installed on a tiny custom PC board. It will just make you depressed.

Round up all the components on your project shopping list. A project with a couple of transistors and a small IC won't cost ten bucks!

Get a bunch of plain perfboard, a bottle of clear nail polish, some fine-insulated-tinned hook-up wire, a couple of spring clip clothes pins, a 6" chunk of 4 x 4 lumber, a 15W pencil soldering iron, some very fine rosin core solder, and a lighted desk magnifier. You'll also need small needle nosed pliers, and small side cutters. A small wire stripper is handy. Glue the clothes pins to the 4 x 4 chunk at a couple of angles that will let you use them as soldering vises.

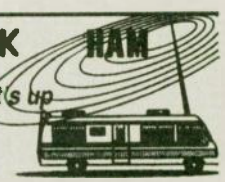
Components with skinny leads — pull the leads down through some perf-board, then push them back up a couple of holes away. Clip off any little metal hold-downs on the transformer. Pull the leads snug. Use nail polishto glue everything in place.

For components with NO leads, tape these to perfboard with the solder pins extending through. Cut a 3-inch piece of hookup wire for each "electrically active" pin. Many trimmer caps have 3 pins, but only two need connections. Strip 1/2" of insulation from the hookup wire ends. Push these through holes near the component pins. Hook them around the pins, and solder in place. Clip your wires neat on the bottom to avoid shorts. Use more nail polish!

Sockets for transistors, changeable caps, coils and similar things, get 8-pin IC dip sockets and split them into 4-pin halves with side cutters. Mount them like your lead-less caps and pots. Transistors use just 3 of the 4 connections. A single dip socket gives two transistor sockets for fifteen cents each. Now use side cutters and trim away perfboard you don't need to handle the component. Leave extra perfboard to drill a mounting hole! An inch square, with component and leads on one side and a mounting hole on the other is about as small as you should go.

For a chassis, use clear 1 x 6 pine board sized to fit the project without crowding. Perfboard-mounted components are held in place with 3/8" long, #4 round-head Phillips sheet metal screws. Small resistors and caps are just slung by their leads between other components. Electrical connections are by Fahnestock clips I get from Mouser at fifteen cents each. Screws and brass washers would work fine!

Lay your components out of the "chassis" board in a way that makes sense. Screw them down. Wire them up. Fiddle with your project until it works right for you. Replace the stuff you fry. Add something or take it apart. Put it together again. Now you can enjoy homebrewing! **WR**



Product Review

Peter Jones Iambic Paddle

John D. Carlini, KA2FWX

I have always wanted to improve my sending speed and go beyond the physical limitations of a straight key. With this in mind, I began a long search for a high-speed keying device such as an iambic paddle or a mechanical "bug." Just recently, the search ended when I finally procured an iambic key made by Peter Jones Engineering Ltd. of Britain.

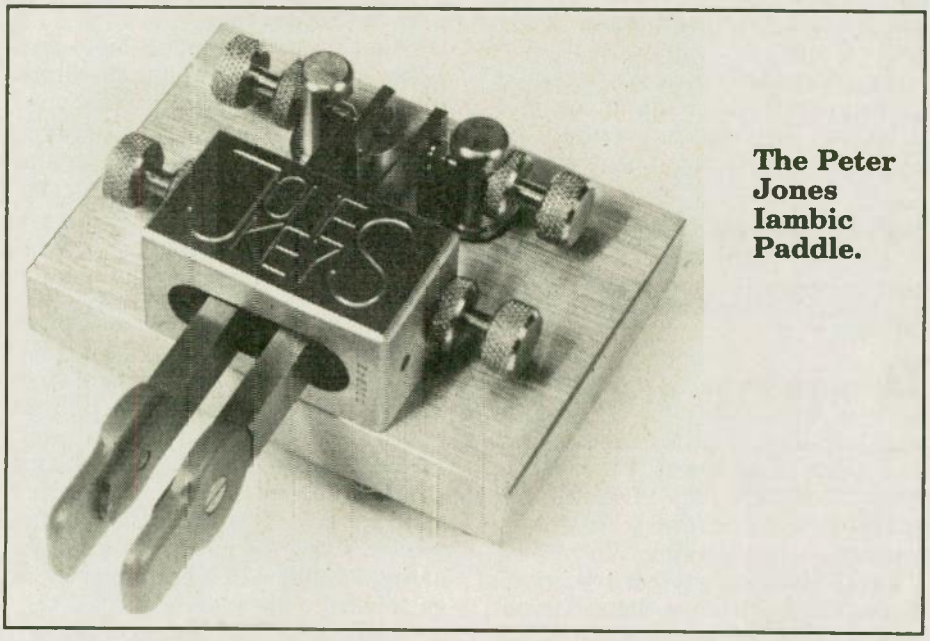
For those who are new to CW operation, an iambic key is a twin lever paddle which allows an operator to nearly simultaneously, depress both paddles at any given moment. One paddle is used for sending dits and the other is used for sending dahs. The main advantage of an iambic key is that since both paddles can be pressed nearly at the same time, there is a significant savings in time and fast code is possible.

The iambic twin paddle is designed for use with an electronic keyer. If the electronic keyer is set for iambic mode-A operation and both paddles are depressed, only the first paddle to make contact will sound. If the keyer is set for iambic mode-B operation and both paddles are depressed, the first paddle to make contact will sound followed by a space and then the second paddle will sound.

There are several very good iambic keys available on the market, and I examined most of them before deciding to buy the Jones model. However, in the end, my choice was influenced partially due to circumstance. I was recently reassigned to the United Kingdom, and purchase of the Peter Jones key "at the source" enabled me to save a few hard earned dollars. I ordered the Jones twin-lever paddle with the red steel base from a local dealer.

My Jones key was shipped in a styrofoam box, partially disassembled in two separate pieces with a plastic bag of parts. The first piece was the pre-drilled steel base. The second was a brass block assembly with the two paddles pre-mounted. The plastic bag contained rubber feet, adjustment screws, contact points, springs and various mounting hardware — over three dozen small parts.

Assembly was relatively simple and took about 15 minutes to complete. In fact, the assembly instructions were listed on one double-sided sheet of paper. Construction



The Peter Jones Iambic Paddle.

began by mounting the rubber feet first, followed by the brass paddle block, then the adjustment screws. It finished with the placement of the contact post assemblies. Once assembled, the key weighs about hefty 3½ pounds.

When I first examined the key, I was very impressed with its quality and construction. All of the components appear to be precision machined or molded. The texture finished steel base is pre- drilled and tapped to mate precisely with the brass paddle block. Each paddle on the block pivots on a set of bearings and has a flexible braided wire attached to the center of the bearing block to provide proper ground. The contact fittings and side adjustment screws are fine machined polished brass components. The contact points are hard copper rod with a gold plating.

When constructed, the key allows the operator to adjust the feel of the paddle to his or her preferences. Each solid brass paddle adjustment screw contains a brass plunger and a spring for paddle tension. Paddle spacing can be adjusted for either a wide or narrow action, with a light or stiff tension. In addition, the paddle finger pads rotate up or down to give an added dimension on finger placement. The Jones company indicated that the key design was based on input from expert CW operators. This is clearly reflected in the number of operator adjustments available.

Each part on the Jones key is symbolic of fine British hand craftsmanship. Like a fine watch, the brass paddle block on the key is stamped with a unique serial number and owners are invited to enter the number on the Peter Jones Register. This allows owners to receive unique news on their pedigreed product.

Finally, the true test of any key is in its use. Although I'm still trying to get familiar with iambic operation, I love the feel and action of the Jones key. The combination of superb quality and great feel make it one of those items I'll cherish for many years to come. For those interested in the Jones key, and not fortunate to live in the UK, it is imported by Palomar Engineers and available through several popular US ham radio equipment distributors. Price assembled is $195 plus $6 shipping/handling.

For further information contact Palomar Engineers, P.O. Box 462222, Escondido, CA. 92046. Tel. 619/747-3343. fax 619/747-3346. e-mail 75353.2175 @compuserve.com WR

A lucky Friday the 13th

Tom Sanders, W6QJI

Friday the 13th is supposed to be unlucky. Not any more!

From 4-10 p.m., local time, on Friday 13 September 1996, several dozen hams in the Pacific Northwest participated in the Friday the 13th Repeater QSO Party. We exchanged names, signal reports, club affiliation, number of years we have been licensed and the usual QSO chat with other hams on the five participating repeaters.

We were fortunate enough, on short notice, to have participation from the following repeater systems:

Mike and Key of Seattle 146.82(-), 103Hz

North Kitsap ARC 145.29(-), 110 Hz

R.C of Tacoma 147.28(+)

North Mason ARES 145.28(-), 103.5 Hz

Burley ARC 145.35(-), 103.5 Hz

Activity was brisk from the start, and, as logs continue to come in, everyone is enthusiastic:

"I was able to explore new repeaters and evaluate coverage of my station."

"It was a great way to meet members of other clubs,"

"I just got my license, and this was my first 'contest.' What a neat way to hone operator skills and meet new hams."

"At a time when several of our bands are under assault by commercial interests, this was a way to increase utilization in a constructive and fun manner. Use 'em or lose 'em."

"I had a ball. Let's do this again!"

QSL cards are at the printer, and cards confirming claimed contacts with hams on at least three of the five participating repeater systems will be mailed as soon as they are available — a "gold" endorsement for anyone who claims contacts on all five repeaters.

The next Friday the 13th is in December. If your club would like to sponsor this event in your area, on 2 Meters or any other band, for that matter, send a QSL card to the following address for a set of the simple guidelines for the event: Tom Sanders, W6QJI, P.O. Box 450, Port Orchard, WA 98366. Or, e-mail to WW2END@aol.com

73, and see you on Friday the 13th. No rabbit foot required. WR

Silent Keys

Russell E. Banker, W3BHV

Russell E. Banker, W3BHV, a native of Washington, D.C., passed away on 19 September, 1988 at the age of 82. Russ, a widower at the time of his death, and without any immediate family, has gone unlisted as a silent key until now. Russ was a real brass pounding DXer who inspired three of us as high school kids to become hams in 1948.

His homemade vacuum tube CW transmitters were a thing of beauty.

Russ was a 1931 Electrical Engineering graduate of George Washington University in D.C., and he convinced the three of us, Richard F. Thompson, W3ODJ, Robert Gardner, W3ODK, and Paul E. Schmid, W4HET, to follow his example into the exciting profession of Electrical Engineering as well as Amateur Radio. Russ was a career government employee with what was then the US Navy Bureau of Ships. He managed and contributed technically to many advanced navigational and electronic fire control projects.

It is hoped that this brief announcement will demonstrate how one bright light, such as that of W3BHV, can have a profound positive influence on the destiny of others. Russ, thanks again. *—contributed by Paul Schmid, W4HET*

Heyward G. Risley, WØTEZ

WØTEZ, Heyward G. Risley, passed away 22 June 1996, after a battle with lung cancer. A resident of Emporia, he was born in Lawrence, Kansas, on Christmas Day, 1916.

A graduate of Lawrence Memorial High School, class of 1936, he married the former Alberta Lorene Bailey in Lawrence in 1938.

A machinist at the Sunflower Ordnance Plant in De Soto, Mr. Risley was a veteran of the Army Air Corps during WWII.

After the war, WØTEZ was a machinist at Didde Glaser, and at Hopkins Manufacturing Company in Emporia.

First licensed in 1953, he was a member of the Emporia Amateur Radio Society, and the former Neosho Valley Amateur Radio Club, both of Emporia. *—contributed by Larry G. Risley, WØTFB*

James R. Young, W6WAW

Burial was at sea for James R. Young of San Pedro, a longtime resident of the South Bay.

Born 17 July 1928, in Los Angeles, he died 28 May 1996, in San Pedro. Mr. Young retired in 1990 after many years as chief radio officer on merchant ships. He was a charter member of the US Merchant Marine Veterans of World War II and had been an active member aboard the historical monument ship SS *Lane Victory*. He also was a member of the Veteran Wireless Operators Association, the American Radio Relay League, the United Radio Amateur Club, the San Pedro Elks Lodge No. 966, the American Legion and the Loyal Order of the Moose.

He is survived by his wife, Shirley; a son, Joel, of Los Angeles; a daughter, Cheryl Farbod of Arizona; and four stepsons, Larry of San Pedro; David of Washington, James of Nevada and Michael Freng of Washington. *—contributed by Shirley M. Young*

William K. Ward, W7KTS

William K. Ward, W7KTS, became a silent key on 8 June, 1996, at Long Beach, Washington. He was 77 years old. He was first licensed at the end of WWII, and was an avid Amateur Radio operator to the end.

W7KTS was a civil engineer by profession; in addition to his interest in Amateur Radio, he was an accomplished landscape painter, a pianist, an amateur astronomer, and he also loved playing the harmonica.

No epitaph for William K. Ward would be complete without saying that all who knew him would agree that he marched to the beat of a different drummer.

As a boy of 7 or 8, I used to sit beside beside him as he called "CQ" on his homebrew HF rig as I watched the finals glow shades of bright orange — "This is W7 K-king, T-Thomas, S-sugar, standing by for a call."

He always treated me with dignity and respect — he was my Uncle Bill, and he was, to a great degree, responsible for my entry into Amateur Radio. He will be missed. *—contributed by Davis B. Mofford, KA6NLY*

Louis E. Anderson, KØND

Lou was my cousin, and we grew up in Northern Wisconson. We went through crystal sets, 01-A tubes, and finally ham radio. He held WN7UZN, then W7UZN, moved to North Dakota where he had WØOUX, and finally, KØND.

He was active in 10-10, the Geritol Net (number 234), QCWA, WAZ, and DXCC 300+. With a suffix like "ND," it was as if he were rare DX, being in rare North Dakota, and with the suffix to match.

I became his QSL manager because of his popular call. He had calls from all over the country when he appeared on the Geritol Net, begging him to stay on all night! Near the end of his active hamming, his need for air to breathe became a top priority, so his SSB activities suffered.

Along with hamming, Lou was a rock hound, and created beautiful jewelry. He was a celebrated bass fisherman, painter in oils and watercolors and fine woodworker, too. He was a wonderful husband to Myrtle and great father to his son David.

He will be missed by all who had occasion to meet him. *—contributed by Ken Johnson, W6FU*

Awards

The Pennsylvania "67" Award

Sponsored by the Mid-Atlantic Amateur Radio Club, Inc.

1. Basic requirement: Confirmed Amateur Radio QSOs with all 67 counties in the Commonwealth of Pennsylvania. QSL cards must be in the applicant's possession.

2. Valid contacts: All contacts must be two-way communications made in real time.

These contacts may be on any Amateur Radio band/mode.

•Contacts made using repeating devices such as FM repeaters, Amateur satellites, moonbounce, and keyboard-to-keyboard contacts through digi-peaters/nodes are valid, because these QSOs are made in real or near-real time.

•Contacts made by storing messages on BBS stations (whether terrestrial or on-board satellites) or by forwarding messages through a network of such BBSs are not valid.

This award is for QSOs between operators, not for exchange of messages.

3. Verification of contacts: Sending cards with the application is not required. An application form is available, but its use is not required. Applicants shall submit a list of QSOs, alphabetized by county, showing the following QSO data: county, call sign of station contacted, band, mode, date, and UTC time. The name and call sign of the applicant should be printed clearly, exactly as they are to appear on the certificate.

QSL cards and the application are to be presented to one of the following for checking and verification: (a) the president of a ham radio club, or (b) an official of the ARRL or DX applicant's national Amateur Radio society.

The following statement, or equivalent language, should appear on the application. The person who checks the cards should sign this statement and also clearly print his or her name and position title.

"I have examined QSL cards for all the listed contacts. The information is accurate as listed."

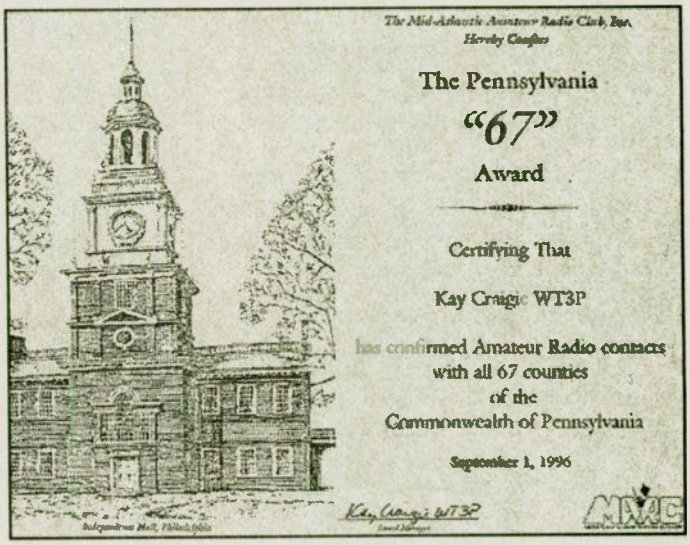
4. Award fee and return envelope: Applicants in the USA should enclose a check for $1, payable to Mid-Atlantic ARC. DX applicants (including Canada), please send one IRC.

All applicants please enclose a self-addressed envelope large enough to hold an 8½ x 11 inch certificate.

Mail the completed application to:

Mid-Atlantic Amateur Radio Club
Attn: Pennsylvania 67 Award
P. O. Box 352
Villanova, PA 19085
USA

WR



Special Events

Christmas Cities

The Delaware-Lehigh ARC will operate W3OK, 14 and 15 December, 1400-0200 UTC, from the twin Christmas cities of Nazareth and Bethlehem, Pennsylvania. Frequecies will be 3.965, 7.265, 14.265, 21.365, 28.365. For certificate, send QSL and 9 x 12 SASE to DLARC, RR 4, Greystone Building, Nazareth, PA 18064.

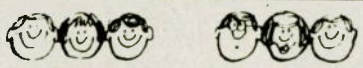
USS *Arizona*

The East Valley Amateur Radio Group will operate WA7USA, 6 and 7 December, from 1500-2400UTC to commemorate the Battleship USS *Arizona* on frequencies 14.240 MHz and 21.340 MHz. Stations contacted may request a certificate by sending a QSL card and a 9 x 12 SASE to EVARG, 3264 E. Carol Ave., Mesa, AZ 85204-3245.

Bethlehem from Belen

The Valencia County ARA will operate KC5OUR from 1800UTC 14 December to 0000UTC 26 December to celebrate Bethlehem from Belen, NM. The name of our town, located 35 miles south of Albuquerque, is the Spanish word for Bethlehem. A QSL card will be sent to all who provide an SASE. QSL to KC5OUR, 93 Nash St., Belen, NM 87002. WR

Amateur "Hi"



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

On a Christmas Eve a few years back, Irv Weiman, W9GA, ". . . fired up a humungous Alpha amplifier and darn near burned down the entire grove in his back yard."

That event was the inspiration for Ray Larson, WØGHQ, who wrote the following:

Irv's Christmas

'Twas the night before Christmas and high in the air
A wire was hanging that hadn't been there.

Two maples sustained it as though they were cedars
While an oak in the middle supported the feeders.

And Irv in his nightcap (and one in his hand)
Had just settled down to tune up the band.

He kicked in the final with a thrill of delight,
Twiddled the dials and tuned everything right.

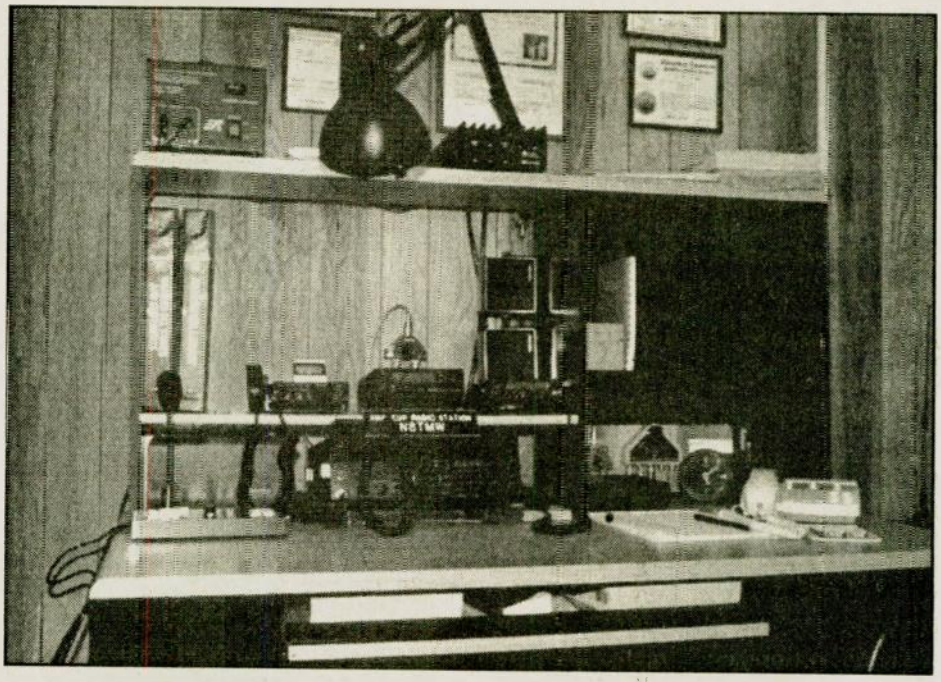
His final plates glowed like the skin of a cherry,
The arcing and sparking was ever so merry.
His feedlines, they sparkled and crackled until
One of them shorted to the edge of the sill!

To the tips of the branches a fireball raced
As against the night sky eerie fingers it traced.

Then the oak in its mantle of new-fallen snow
Burst into flame and made the neighborhood glow.

And Santa exclaimed as he jingled on by,
"Old Irv mistook Christmas for the Fourth of July!"

—submitted by Bob Dillon, WB9LTN, Editor, *Key Clucks*



Station Appearance

Jim Damron, N8TMW

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.

The joy of Amateur Radio has been mine since 1992 when I finally got my license. I had been interested in the hobby since I had been a teen some 30 years earlier and had studied some off and on. But I never followed it through. Then with raising a family and a career in broadcasting, I just never thought about it much.

Then in early 1992, I was talking to a friend who happened to have a handheld radio with him. My inquiry revealed that he was a ham and further conversation made me aware of a shocking new development. "What!? A no-code license!" Within two months I had passed my no-code exam and within two years had upgraded to Extra.

I enjoy my Yaesu FT 5100 and Yaesu FT 2500 for 2 Meter and 440, and my Icom 737 for HF work. Most of all I enjoy public service work. I'm involved as president of the Kanawha Amateur Radio Club in Charleston and on the board of West Virginia Amateur Radio Association and both clubs are heavily involved in community events and emergency preparedness. I feel it's so important for every amateur to get involved in public service work. Indeed, the future of our hobby depends on it.

I'm just so thankful to be a part of the Amateur Radio Service — the hobby of a lifetime! **WR**

W1FZ and XYL honored

Jim and Beulah Thayer were honored for their generosity on 25 August 1996, at a dedication ceremony for the new Farmington, New Hampshire, High School.

Jim Thayer is W1FZ. He and his wife donated two million dollars toward the school project.

Arthur Westneat, W1AM, reports that several hundred area residents turned out to give the couple a standing ovation and to present them with a watercolor painting of the new school.

Jim Thayer was president of a local bank in Farmington and owned the local telephone company. A ham since 1921, he is also a member of the Great Bay Amateur Radio Association.

Off the air

Worldradio
2120 28th Street
Sacramento, CA

Getting involved

The recent item in *WR* asking for lodging for a pair of Hungarian hams, suggested to me that the following might be of interest to you and your readers.

For approximately 20 years now, the ARRL has sponsored the International Travel Host Exchange (ITHE). This is a group of several hundred hams all over the world who offer complimentary accommodations and meals to visiting hams. I have been a participant in the program since the beginning. I have had the pleasure of entertaining visitors from 14 countries. It really has been a pleasure to meet them, and in some cases, visiting them in their own countries.

It has been a great way to find out how the "other half" lives, and to make friends.

For further information and a list of participants in the program, contact the ITHE, c/o the ARRL. They also would be happy to accept new participants.

Monty Bancroft, W6NJW
Sun Valley, CA

Clean yourself up!

Great article in "Publisher's Microphone" dated September 1996. You have hit it right on the head. This country is becoming a mass of mush. No morals, no values and no family structure. For those who didn't bother to renew their licenses, [too bad]. . . I wish I was part of the days when a ham radio operator got a real education just qualifying for his licenses. Mine were too easy.

I am . . . [an educator] by profession and it is scary what we are dealing with as far as education is concerned. I think most of my students came from the schools that you mentioned in your article. They must have received a passing grade for just showing up.

I absolutely love the expression, "It is possible to have a society in which nobody fails (and thus nobody excels), it is called Albania." Fantastic. Right on!! For ten years straight I worked two full-time jobs to get a start in life and own my own home. I tell the kids of today this and they look at me like I am crazy.

I haven't seen many ham shacks other than my own which is usually neat and orderly, but my wife does get on me about my stacks of reading material. My biggest pet peeve concerning ham radio operators is the way they appear. For years I have worked the TRW Swapmeet in Los Angeles for our Amateur Radio club. I am also the secretary/treasurer for the same club, called the Western Amateur Radio Association.

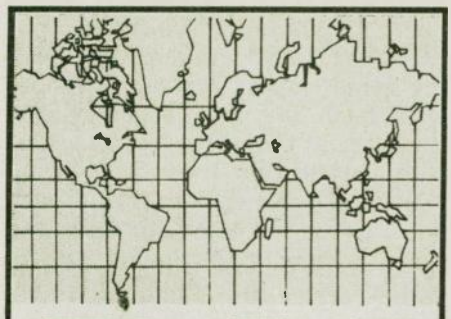
Our swapmeet activity was our biggest fund raiser and the swapmeet is attended by hundreds of hams and electronic folks. Many of the Amateur Radio operators come to the local swapmeets looking like they just crawled out from under a rock. It is embarrassing. I'm sorry, but there is no excuse for their appearance. I have to get up early to load my truck and get ready for the swapmeet, and I look the same way as I do when I go to work each day. I see hams looking the same at major conventions. Our club worked the Queen Mary Convention a year ago in Long Beach and I swear the same bums showed up with their unshaven faces, dirty clothes, and general "homeless" look.

Come on, ham community. Have some pride. I can't believe these people show up in public looking the way they do. I can honestly say these are all male ham radio operators. I don't believe I've ever seen a female ham look that unkempt.

Thanks again for the great article. I have subscribed to your magazine since the day I passed my first test and got the free introductory issue, and I always will. Keep up the great work.

Joseph R. Haas, KE6EZG
Garden Grove, CA

Live! Via Amateur Radio style — A ***Worldradio*** QSO Party. Join us for a fun filled weekend of QSOs, 7-8 June 1997. Don't miss it!



DX WORLD

John F.W. Minke III, N6JM
P.O. Box 310, Carmichael, CA 95609-0310

W-100-N

No applications for ***Worldradio's*** *Worked 100 Nations Award* were received this period.

Tonga (A3)

Ohio/Penn DX Bulletin reports that Paul Kidd, A35RK, is about to be relocated to Lifuka Island in Ha'apai (OC-169) and has rented a house that is 20 steps from the beach. He should be on soon with a very good antenna system and active on all bands, 10 through 80 Meters. From the end of August and into September, A33RK was worked on 40 Meters between 7.006 and 7.012 MHz between 0800 and 1230 UTC. He was also reported on 30 Meters on 30 August at 0445 UTC near 10.108 MHz.

According to Paul, there is no functional QSL Bureau for Tonga. At present there are problems in how to handle the cards for the pirated A35 calls, or who is going to be the bureau manager. I suggest you avoid sending QSL cards to Tonga stations via their bureau system.

Father Kevin Burke, A35KB, is now residing on Eua Island and should be active shortly. The island is a 3-hour boat trip from Nuku'alofa and counts as part of the Tongatapu group (OC-049) for IOTA purposes. At the middle of September a station signing with A35DM was reported on 14.195 MHz after 0200 UTC.

Oman (A4)

DX News Sheet says Tony, A45ZN, is active four to five nights a week on 80 and 160 Meters running 400 watts to a trapped dipole. Try looking for Tony near 1.832 MHz after 2300 UTC, and near 3.504 MHz after 0045 UTC. He has also been reported on 40 Meters at 1730 UTC on 24 August near 7.006 MHz, and on 15 Meters around 0900 UTC on 21.005 MHz.

RTTY buffs might want to listen for A41KD who was working Europeans on 6 September on 20 Meters near 14.084 MHz from 1630 UTC. Other activity was provided by at least four other reported calls:

A41JR	14.266 MHz	1618 UTC
A41KT	14.250 MHz	0600 UTC
A41LO	14.190 MHz	1245 UTC
A43AT	14.250 MHz	1300 UTC
A47RS	14.257 MHz	1545 UTC
A41LZ	21.300 MHz	1230 UTC

CW contacts are available from A43AT; look for this between 14.004 and 14.019 MHz after 1300 UTC.

Nauru (C2)

If you need an SSB contact with Nauru look for C21NJ who has been on 20 Meters often at various segments of the band. Try 14.190 to 14.203 MHz after 1300 UTC; 14.226 MHz at 1430 UTC; or 14.260 to 14.280 MHz after 0200 and 1300 UTC. Other calls reported during the latter part of August and September include the following:

C21DJ	14.160 MHz	0700 UTC
C21JJ	14.240 MHz	1200 UTC
C21NI	14.216 MHz	0930 UTC

Comoros (D6)

The recent DXpedition to Comoros by Maike, DL4XS, Mirko, DL6ET, and Dieter, DL3KDV, operating with the calls, D68XS, D68ET, and DL68DV, respectively, netting new ones for many DXers. Most of the reports indicated contacts with Europeans, probably due to the band conditions. Dieter (D68DV) was the DXer most reported and he handed out contacts on 15, 17, 20, 30, 40, 80 and 160 Meters . Almost all were on CW, although there was some activity on 15 Meters SSB.

The same applied for Mirko (D68ET), although he had a few more SSB contacts with those made on 15, 17, 20 and 75 Meters. The activity from Maike (D68XS) was mostly RTTY contacts on 20 and 15. He did add a few SSB contacts on 15 and 17 Meters.

Midway Islands (KH4)

According to *Travel Weekly* Midway Atoll will be opened to tourists for the first time. The date was to have been in August when the U.S. Navy turned over administration to the U.S. Fish and Wildlife Service.

Phoenix Air and a new affiliate, Midway Phoenix Corporation, will operate Midway's tourism. However, the airfare round-trip between Lieu (Hawaii) and Midway is $1,000, and the visitation on the island will be limited to 100 persons after 30 June 1997.

With a price tag such as this, DXpeditions to Midway could be a reality and worth consideration. Apparently, the first scheduled operation was an international group of DXers that operated from there in August. For further information you may contact the wildlife service in Honolulu at 808/541-1201. Also, try your favorite travel agent.

Bangladesh (S2)

During the latter part of August S21B was worked both CW and SSB on 14.010 MHz at 1530 UTC, and 14.180 MHz at 1430 UTC, respectively. The reports were those DXers in Europe. Then around 16 September another European report listed S21L on 14.178 MHz at

1545 UTC.

Macquarie Island (VKØ)

Warren Hull, VKØWH, notes, "due to my greatly increased work load at present it's unlikely that I will be able to get on very much now." *425 DX News* reports that since one of the transmitters is out of service, "I will have to declare QRT on CW. Amateur Radio for me was a last-minute thing, and my original intention was only a weekly sked with a couple of friends and not any DX — hence my not bringing in any equipment. What DX I have managed is 1,200 QSOs with about 50 countries, modest compared with a DXpedition, but at least 1,200 people got the country." The next operator from the island probably will be signing with the call VKØGW.

Pitcairn Island (VR6)

Bob Burchardt, AB5QH, informs us that Jay Warren, VR6JC, is a brand new DXer on Pitcairn Island. His first contact was at 0142 UTC on 8 September, 1996, on 21.315 MHz, and that was with Bob. Evidently, he was answering Bob's CQ.

Jay also told Bob that the Youngs, Brian, VR6BX, and Kari, VR6KY, and Raylene Christian VR6RC, are no longer on the island, having moved to New Zealand.

Evidently, Jay must have got cold feet and run away as I prepare this month's column. I have seen no other reports for VR6JC. However, here are a few other calls from Pitcairn Island that have been reported:

VR6DB	7.188 MHz	0630 UTC
VR6DB	14.252 MHz	0445 UTC
VR6MW	14.087 MHz	0345 UTC
VR6PAC	14.255 MHz	0200 UTC
VR6SC	14.246 MHz	0345 UTC

The report for VR6MW (Meralda Warren) is an RTTY report and she has been reported other frequencies close by. She was also worked on 40 M, the Century Club RTTY Net, on 7.084, at 0200 23 September. VR6PAC has also been on 40 Meters SSB on 7.046 MHz around 0600 UTC working Europeans.

A couple of decades ago the only available contact with Pitcairn Island was with Tom Christian, VR6TC. Those waiting in line had to be patient as Tom likes to ragchew with each contact. There was an earlier operator prior to Tom who signed with VR6AC. The call belonged to Floyd McCoy.

Soon additional residents of the island, all related to each other, joined the ranks of Amateur Radio. Pitcairn Island soon became a stopover for visiting DXers with such calls as VR6BB, VR6JJ, and others. In 1979 Chuck, ZL1ADI, and Ron, ZL1AMO, made a visit and signed with VR6HI and satisfied the demand for CW contacts. The DXpedition was supported by the Northern California DX Foundation (NCDXF).

I assume that all of you are aware that the residents are descendants of the *Bounty* fame.

Macao (XX9)

Gleaning through the various DX news bulletins I found only one report of activity from Macao. On 22 August, XX9AU was working Europeans on 14.188 MHz at 1430 UTC.

IOTA

Look for PS2S signing from São Sebastião Island (SA-028) from 25 November, operating both CW and SSB. He should be there through 2 December. Check the usual IOTA frequencies. On CW try 3.510, 7.010, 14.010, 21.010 and 28.010 MHz. The same group should be on a week earlier from Sto Amaro Island (SA-071) signing with PV2V. *425 DX News* notes that Louis Paquet, VE2BQB, will be active from Baffin Island (NA-047) through 15 December signing with VE8TA. He operates both CW and SSB.

The following is a list of what has been active during the month of September:

AF-076	Bonny Island	5N4ALE
AS-032	Tanegashima Island	8J6JCS
AS-039	Komandorskiye group	RØ/KH6JEF
EU-008	Isle of Skye	GMØRTO/M
EU-045	Ventotene Island	IBØJN
NA-026	Long Island	KB2PFP
NA-036	Vancouver Island	VE7IU
NA-065	Camano Island	W9FGH
NA-092	South Padre Island	K9PPY/5
NA-148	Appledore Island	KA1DIG/P
NA-208	Avataqpivik Island	NU2L/VE8
OC-006	Tasmania Island	VK7BC

Don't overlook the easier ones for IOTA. Those of you just starting to collect IOTA islands should listen near 14.260 MHz. Rees, VE7IU, is there most of time and can give you Vancouver Island (NA-036). Another active one is AK1L on Vinalhaven Island (NA-055) who works both CW and SSB. Those DXCC countries can count too. Such countries include Hawaii (OC-019) and other simple ones. If you were active in the recent CQ Worldwide DX Contest, there should be many in there for you.

Those of you who use Dewitt Jones, W4BAA, as a checkpoint, please note that his new address is now P.O. Box 8695, Lacey, WA 98509-8695.

Dewitt also has copies of the 1997 IOTA Directory. The new publication contains 100 pages of the island lists, plus many stories of IOTA DXpeditions. Send check or money order for $15 to Dewitt for your copy.

DXCC Applications

The DXCC Desk reports that the

DX Prediction — December 1996

Maximum usable frequency from West Coast, Central US and East Coast *(courtesy of Engineering Systems Incorporated, 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. 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	*(9)*	10	12	*(8)*	*(12)*
12	*(9)*	10	12	*(8)*	*(11)*
14	*(14)*	9	11	*(7)*	22
16	*(18)*	10	*17	*(11)*	26
18	20	*(9)*	*(15)*	*(9)*	28
20	20	*(9)*	*(20)*	*(8)*	28
22	*(17)*	19	23	*(8)*	27
24	15	20	26	*(8)*	22
2	11	17	23	7	*15
4	10	12	15	7	*14
6	*(10)*	*(11)*	*(14)*	7	*13
8	*(9)*	10	*13	8	*12

CENTRAL USA

UTC	AFRI	ASIA	OCEA	EURO	SO AM
8	*(11)*	8	*12	*8	*12
10	*(11)*	8	12	*(8)*	*(11)*
12	*(19)*	7	11	*(14)*	16
14	24	10	*20	*(12)*	*25
16	26	*(10)*	*(17)*	*(9)*	*27
18	25	*(9)*	*(14)*	*(8)*	*28
20	21	*(9)*	*(20)*	*(8)*	*28
22	*18	*(16)*	23	*(8)*	*25
24	*14	*(13)*	*(22)*	8	*18
2	13	*(9)*	*(15)*	8	*15
4	*12	*(9)*	*(14)*	7	*13
6	*(12)*	*(8)*	*(13)*	7	*12

EAST COAST

UTC	AFRI	ASIA	OCEA	EURO	SO AM
7	*(12)*	8	*(12)*	*8	12
9	*(11)*	8	12	*(7)*	*12
11	20	7	11	12	17
13	25	8	*21	15	*24
15	26	*(8)*	*(18)*	14	*26
17	*26	*(8)*	*(15)*	*(11)*	*28
19	23	*(8)*	*(18)*	*(9)*	*28
21	*19	*(12)*	*(22)*	8	*26
23	*15	*(12)*	*(22)*	8	*18
1	*13	*(9)*	*(15)*	8	*15
3	*12	*(9)*	*(14)*	8	*13
5	12	*(8)*	*(13)*	7	*12

number of unprocessed applications at the end of July was 303 (22,918 QSL cards). At the end of August the number of unprocessed applications was 464 (27,814 QSL cards). During the month of July, 376 applications (27,400 QSL cards) were received for endorsements and new awards. Likewise for August, 655 applications (36,367 QSL cards) were received for endorsements and new awards.

During August, DXCC Manager Bill Kennamer, K5FUV, traveled to Tokyo where he checked DXCC cards at Ham Fair, and returned with over 200 DXCC applications representing over 14,000 QSL cards. Applications being sent out at the end of July had been received about 10 days earlier, and at the end of August it was an 8 day interval. A few received prior to that time were waiting for paper records to be converted, or were being audited, and so had not yet been completed.

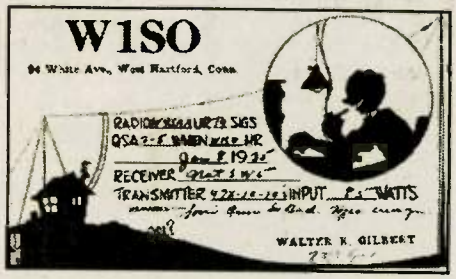
QSL Information

Noted in *QRZ DX* Andrew, G4VLV, comments on QSL routes for his S21YE operations; "Cards for S21YE may be sent to one of the following: (1) RSGB Bureau; (2) Andrew Flint, The Gables, Friday Street, Painswick, Glos. GL6 6QJ, ENGLAND; (3) Andrew Flint, P.O. Box 11014, Uttara, Dhaka 1230, BANGLADESH. The quickest is option 3. Most reliable is Option 2, but I can only respond three times a year (Dec/Apr/Aug), and Option 1 is the slowest, pretty reliable and the most cost effective."

QRZ DX also reports on the IRC situation in Germany. The post office will no longer accept foreign IRCs for stamps at a fixed rate, but can only be used to pay the postage for a standard letter or postcard for surface or Air Mail. One IRC will now be sufficient for the return of a standard letter via Air Mail to the United States.

Antique QSL Department

Paul Howard, WA5TUD, found some old QSL cards in a yard sale. Dating from 1934, Paul said he didn't know that they had such nice cards then, such as this card for W1SO, operated by Walter R. Gilbert, of West Hartford (then the Headquarters city of the ARRL).



The cartoonist was Gil, who old-timers will remember for his "Jeeves" character in *QST*'s "How's DX," then edited by Rod Newkirk, W9BRD. My brain cannot remember exactly, but I think W1SO is the one and only Gil of that cartoon fame. Have I got it right? This particular contact was with Al Engelman, W9SAA, of St. Louis on 8 January 1935. If Al remained in Amateur Radio and in Missouri his call would eventually become a W-zero! And probably WØSAA.

QSL Routes

These QSL routes come from several sources and cannot be guaranteed. Please report any errors.

3C1DX	—EA6BH	EK4GK	—GW3CDP
4K8F	—UA9AB	EL2RR	—KFØUI
4K9W	—DL6KVA	ES96Q	—ES5EE
4N14OT	—YU1SB	F/ON5UP/P	—ON5UP
5H3BB	—HB9DHB	FG5BG	—KI6FE
5H3JA	—AAØOB	FK8HC	—VK4FW
5NØMVE	—ON7LX	FR/EA2KL	—EA2KL
5N3ALE	—DJØKN	FR/EA3ELM	—EA3ELM
5N4ALE	—DJØKN	FS5PL	—KFØUI
5W1HP	—JR1FYS	FS5PL/P	—KFØUI
5X1D	—SMØBFJ	FS5PL/FG	—KFØUI
7Q7EH	—AA9HD	GB25MDP	—GØORH
7Q7JL	—GØIAS	GB2ROA	—RSGB
7Z1AB	—KN4F		Bureau
8J6JCS	—JA6FHB	GD/DL2MGP	—DJ3QG
8P9GY	—KE9A	GM4RTO/M	—G4RTO
9G1MR	—IK3HHX	H25Z	—5B4EZ
9H3PB	—F4EKD	HC6CR	—NE6Z
9H3VZ	—DK7IH	HH2/N3SIY	—KFØUI
9H3WD/M	—OK1AD	HP1XVH	—KFØUI
9M2EU	—WA2EJI	HSØZAA	—KM1R
9M2JJ	—SMØOEK	I1IVE	—I1BWI
9Q5BB	—EA4BB	IA5/IK5WWB	—IK5WWB
A2/H5ANX	—ZS6EW	IH9DX	—IKØSXU
A35EM	—JR1FYS	II0SCOUT	—IK2IWU
AH4/AHØW	—KE7LZ	IO6ARI	—IK6PTH
BD4TB	—9A2AJ	IUØPAW	—IKØSHF
BV5CN	—AA6BB	J28JA	—F5PWH
BV5GQ	—BV6AO	J3/KBØQNS	—KFØUI
CH3PND	—VE3INB	J3/N3SIY	—KFØUI
CI3O	—VE3TIG	J3A	—WA8LOW
D68DV/ET/XS	—DL4XS	J52IM	—KB9XN
EA1/G3PMR	—G3PMR	J8ØF	—DL3MIB
EA1/GØWIN	—G3PMR	J87CQ	—N5FTR
ED1RGC	—EA1AXL	JG8NQJ/JD1	—JA8CJY
ED3RGC	—EA3ACA	JY5HF	—JY5AR
EI96I	—EI4AN	JY8XY	—WB9YXY

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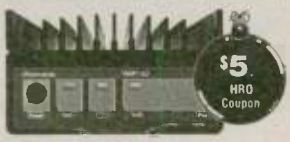

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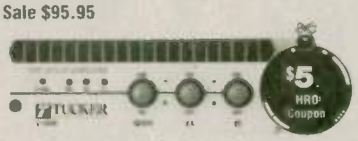

Tucker V100W

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Mobile ant. tun. • 300W • 1.8-30MHz • 7.25"x8.75"x3.6"

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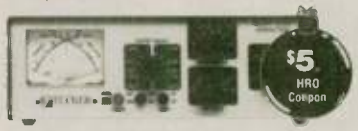

Tucker T-1000

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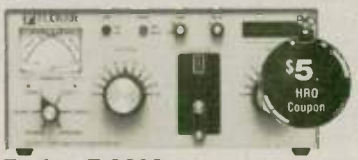
10.2"x9.4"x3.5" **Sale $132.95**



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[1] Name _____ Call _____

[2] Address _____

[3] City _____ ZIP_____

[4] The two-letter abbreviation for my state is _____

[5] In USA, licensing authority is: FBI CIA FCC CAF AOL KGB

[6] Morse Code came from: SFB Morse Don Ameche W. Green

[7] Marconi antenna inventor: Marconi Watson-Watt TA Edison

[8] Volt was named after: Voltaire Volta Travolta Upper Volta

[9] The radio prefix for Japan is: JA AJ XX YY ZZ DD EE

[10] The radio prefix for France is: F G H I J K L M N O P

[11] In Moonbounce, amateurs aim their antennas at the _____

[12] In Frequency Modulation, the Frequency is modulated. T F

[13] Triode invented by: Dave Bell Lee DeForest B. Pasternak

[14] RG-8 coax cable is 8 ohms, runs to speakers from amps. T F

[15] My Visa M/C Amex # is: _____

[16] The expiration date is: _____

[17] This is a: New Subscription Renewal

[18] The Square Root of my five-digit Zip code is _____

If question above [18] can't be answered, you may substitute #19.

[19] In SSB the number of SBs is: 1 2 3.14 4 5 6.28 7 8 9 10

[20] The wavelength of 50 MHz (in Meters) is: 6 60 600 0.6

Mail your test to **2120 28th St., Sacramento, CA 95818.** Notification of your passing score will be a copy of ***Worldradio*** showing up in your mailbox each and every month for a year.

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JY9QJ	—DL5MBY	V63VW	—JA6VZB
K4YT/EL2	—W2TK	V73C	—N4GAK
K9VV/C6A	—K9VV	VE8A	—VE3TIG
KC6GB	—LX2AA	VE8TA	—VE2BQB
KHØAC	—K7ZA	VE9MY	—VE9JK
KHØES	—VK4FW	VK2HV	—VK4FW
LX1RQ	—KFØUI	VK6BCP	—HB9CAI
MØADG	—KFØUI	VK9XB	—JJ1TBB
NH2G	—WF5T	VP5/N2VW	—N2VW
OHØKMF	—OH2KMF	VP5/WA2YVA	—WA2YVA
OM9SIAD	—OM3TA	VP5/WB2YOF	—K2SB
P4ØDC	—AA6DC	VP5T	—N2VW
PJ9T	—AB4JI	VP8CSA	—DL1SDN
PJ9U	—OH1VR	VQ9TT	—W8OJM
PQ8MM	—PT7BI	VS9AJM	—W7KCN
PW8LF	—PY2VA	W7FKF/C6A	—WJ8C
PY8JA/P	—PY8JA	WH6ASW/KH2	—VK4FW
R1ASP	—RA1AD	WH7/WR6R	—N2AU
R9/VK9XL	—KE6EVR	WP4Q	—KP4CKY
RA2FBC	—DJ1OJ	XE1/W6EFR	—KFØUI
RP3YPD	—RK3YZA	XM3P	—VE3TIG
RP9ATZ	—UA9AB	XM3QCW	—VE3CT
RZ9A/ZA	—UA9AB	XT2DP	—WB2YQH
RZ9DX/Ø	—RW6HS	XZ1N	—WX1T
SP4ØZEO	—SP5KVW	YA/UT9XL	—F5TCN
TØØU	—DL7CM	YI1HK	—SM3DBO
T82AA	—LX2AA	YV1DIG	—YV1AVO
T88A	—LX2AA	Z31VP	—DJØLZ
TF1D	—DJ1OJ	ZB2FX	—G3RFX
TK2YT	—F2YT	ZB2X	—OH2KI
TL8MS	—DL6NW	ZC4EE	—G4SSH
TM2LB	—F6KCE	ZD9CR	—KA1DE
TO5A	—F6BUM	ZD9DM	—ZP5AA
TO8T	—F5TMZ	ZG2FK	—ZB2FK
TT8WD	—F5UPY	ZG2FX	—G3RFX
TY1IJ	—DK8ZD	ZK1XH	—JR1FYS
UA2DC	—DK4VW	ZK2HP	—JR1FYS
UA2FF/J	—DK4VW	ZP9BB	—PY5FI
UA9AJ/BA	—UA9AB	ZS6Y	—WA3HUP
US8ØBL	—UR4BYU	ZS6YA	—KK3S
US96HM	—UT1HT	ZVØMB/MV	—PT2DX
UT1N	—UT7NW	ZV2EPA	—PY2YW
V26Z	—WF2S	ZW5B	—PY5EG
V63BM	—JA6BSM	ZX1A	—PY1SL
V63KA/MC	—JH8BKL	ZYØZGD	—SMØAGD
V63NN	—JA7FWR	ZY1A	—PY1SL

QSL Addresses

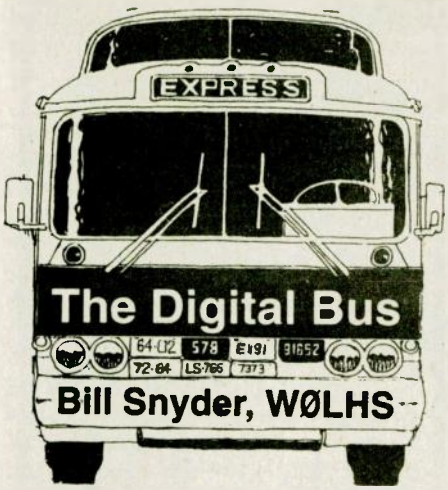
9K1KY	—Kiyoko Yamakami, P.O. Box 3, Tokaimura, Ibaraki 31911, JAPAN
LU6Z	—GACW, P.O. Box 9, 1875 Wilde, BA, ARGENTINA
S21R	—P.O. Box 10052, Dhaka 1207, BANGLADESH
V26AS	—P.O. Box 1828, St Johns, ANTIGUA

Many thanks to the following contributors: W4BAA, AB5QH, WA5TUD, KC7DA, Western Washington DX Club (WAØRJY), Northern Arizona DX Association (W7YS), American Radio Relay League (K5FUV), *Travel Weekly*, *Island News* (W5LJU), *425 DX News* (I1JQJ), *DX News Letter* (DL9GOA), *The Ohio/Penn DX Bulletin* (KB8NW), *NPDXG Bulletin* (CT1ENQ), *The Low Band Monitor* (KØCS), *DX News Sheet* (G4BUE), *QRZ DX* (N4AA), *Inside DX* (N2AU), and *The DX Bulletin* (AE4AP).

As I prepare this month's column the weather has begun to cool down here in the Sacramento Valley. The band conditions still aren't much good. Hopefully we will have some good openings soon. If not, have faith as it won't be this way forever. 73 de John, N6JM. WR

QSL managers

Call	Mgr
3A2LZ	OM9ALZ
3DAØCA	W4DR
3EIDX	KFØUI
3ZØSDT	SP4KGB
3ZØZIM	SP5ZIM
3Z6ØBE	SP2KFU
4F3CV	HB9CXZ
4K9W	DL6KVA
4L1BR	SP7MTL
4L8A	OZ1HPS
4N7M	YU7KMN
4O4BYZ	YU7KMN
4O7OX	YU7KMN
4O9S	YU7KMN
4S7JRG	DF5JR
4U51UN	WB8LFO
4XIARU	DL3TD
4ZØZ	4X6ZK
5B4/DL7UUO	DL7DF
5H3BB	HB9DHB
5H3ES	DF9SU
5H3JA	AAØOB
5NØMVE	ON7LX
5N3/SP5XAR	SP5CPR
5R8EE	FR5EL
5WØCW/UO	DL7DF
5X1D	SMØBFJ
5X1T	ON5NT
5Z4SS	JA1SQI
6Y5/JJ3SRU	JJ3SRU
6Y5/KB5VRF	JR4PMX
7P8/G4FUI	G4FUI
7Q7EH	AA9HD
7Q7JL	GØIAS
7Z5OO	W1AF
8P9GY	KE9A
8P9II	DL7DF
8R1ZG	W4FRU
8S2FRO	SM2EKN
9A4A	9A4AA
9A8ØØOS	9A1BOP
9G5AA	G3SXW
9G5CA	ZL2IW
9H3WM	OK1AD
9K2/YO9HP	YO9HP
9K2GS	WB6JMS
9K2MU	WA4JTK
9L1MA	WØHSC
9M2EU	JA2EJI
9M2JJ	SMØOEK
9M2MC	W8MHV
9M6AG	JA9AG
9Q5BB	EA4BB
9Q5MRC	G3MRC
9V1AN	JJ1TBB
9V1ZB	JL3WSL
9VIYP	RA6YP
A22/H5ANX	ZS6EW
A35DM	ON4QM
A43AT	A43RS
A61AH	KA5TQF
A71FF	A71A
A7IBY	F5PYI
A92FZ	W3HCW
A92SE	K1SE
AH4/AHØW	KE7LZ
AP2MY	OM2SA
AY1I	IØWDX
BD4TB	9A2AJ
C56CW/DX	DL7DF
CI3O	VE3TIG
CN8GB	CN8BA
CO2JD	HI3JH
CP4BT	DL9OT
CQ9MW	DJØMW
CT9F	CT3BM
CU7C	CU7AM
D68DV/ET/XS	DL4XS
DL7WO	DL7DF
EA5GR/P	EA5CIO
EA7AIE/P	EA7CWA
EA7AKI/P	EA7EY
EA7UR/P	EA7TG
EAIFEO/P	EA5OL
ED2ISN	EA4AGZ
ED2SAJ	EA2MJ
ED3MFB	EA3AIM
ED3VCQ	EA3GIS
ED7VBC	EA7ENZ
ED9MVC	EA9URM
EG1ILO	EA1EPB
EG1NAV	EA1JJ
EG1NLE	EA5AR
EG1NLO	EA1EXR
EG1NLU	EA1AUI
EG1NOR	EA1EHE
EG1NPO	EA1DD
EG1NSA	EA1EAU
EG1NSG	EA4BPJ
EG1NSO	EA1FEL
EG1NSU	EA1MV
EG1NTC	EA1NZ
EG1NTM	EA4KA
EG1NTO	EA1OD
EG1NTP	EA1MK
EG1NTS	EA1EK
EG1NVA	EA1ABZ
EG1NZA	EA1ESM
EG1XYL	EA1EK
EG2HU	EA5AR
EG2NBI	EA2PI
EG2NNA	EA2URT
EG2NSS	EA2CIK
EG2NTE	EA2RS
EG2NTZ	EA2URE
EG2NVI	EA2RW
EG3NGI	EA3CUU
EG3NTB	EA3ALV
EG3NTL	EA3GIJ
EG3NTT/NBA	EA5AR
EG4NCC	EA4AKF
EG4NCR	EA4EIC
EG4NGU/TO	EA5AR
EG5NAB	EA5EIL
EG5NCS/W	EA5AR
EG5NMU	EA5GRM
EG5NTA	EA5CKP
EG5NTV	EA5KB
EG6NPM	EA6DO
EG7NAL	EA7CP
EG7NCA	EA7CP
EG7NCO	EA7BB
EG7NGR/NTJ	EA5AR
EG7NMA	EA7AIN
EG7NSE	EA7CVW
EG7NTH/NTO	EA7CWA
EG8NGC	EA8AKN
EG8NTF	EA8NLP
EG9NCE	EA9PY
EG9NML	EASKY
EM1KA	JA2JPA
EM1U	JA2JPA
EV6M	EW6M
EX8ZX	IK2QPR
EY8XX	GW3CDP
EZ/UK8BA	ON7GB
FG5HR	F6BUM
FK8FI	F6FNU
FK8GJ	F6CXJ
FK8GM	WB2RAJ
FK8HC	VK4FW
FM/PA3BBP	PA3ERC
FM/PA3ERC	PA3ERC
FM/PA3EWP	PA3ERC
FM/PA3FQA	PA3ERC
FM5GS	F6GNG
FP5EJ	K2RW
FR8EL	FR5EL
FT5WE	F5GTW
GD4VGN	DL4FF
GJ/DK7SU	DK7SU
GJ/DL7WO	DL7DF
GU/PA3EXX	PA3EXX
GW6J	GW4VEQ
GX4BJC	GØDBX
H25Z	5B4ES
HAM3MQ	HA3MQ
HH2AW	9A2AJ
HH2PK	KA9RLJ
HI3/DH2JD	DH2JD
HP3/JA5SEY	JA5SEY
HSØZAA	KM1R
HZ1AB	K8PYD
HZ1TA	OE6EEG
HZOZAQ	K9ECE
IA5/DK5RK	DK5RK
IA5/I2MWZ	IK1QFM
IA5/IK1NEG	IK1QFM
IA5/IK20WX	IK1QFM
IA5/IK5WWB	IK5WWB
IA5/IK1GPG	IK1QFM
IA5/OE6TQO	OE6TQO
IBØJN	I8JN
IC8/DL2DXX	DL2DXX
IG9RAI	I2EOW
IH9DX	IKØSXU
IIØS	IK2IWU
II1VE	I1BWI
II7DMG	I7IJU
II9CM	IT9PKO
IL3/IK2GPQ	IK2GPQ
IL3/IK2ILH	IK2MRZ
IL3/IK2JYT	IK2XDE
IL3/IK2MRZ	IK2MRZ
IL3/IK2PZG	IK2NRV
IL3/IK2XDE	IK2XDE
IL6/IK6CGO	IK6CGO
IMØ/ISØNHI	ISØNHT
IO6ARI	IK6PTH
IQ7CIS	IK7SLT
IQ1TSM	IK1TSM
ISØ/F6EOC	F6EOC
IUØPAW	IKØSHF
IU3VMD	IK3AWP
J28JA	F5PWH
J3/PA3EGZ	PA3EGZ
J38BO/DF/FR/TF	DL7DF
J3A	WA8LOW
J53KX	DF3KX
J55UAB	F6FNU
J59ON	DJ9ON
J79BPQA/RC/WP	PA3ERC
J87CQ	N5FTR
JA2FTR/3	JA2FTR
JQ9QJ	DL5MNY
JT1FBT	NI7T
JW2EGA	LA2EGA
JY5HF	JY5AR
JY8XY	WB9YXY
JY9QJ	DL5MBY
KC6JF	KDBTP
KC6YA	W6YA
KG4GC	KQ4GC
KG4ML	WB6VGI
KG4QD	WAVQD
KHØES	VK4FW
KH2/WH6ASW	VK4FW
KH8/DL2RUM	DL7DF
KH8/DL7UFR	DL7DF
KH8/DL7URH	DL7DF
KH8/DL7UUO	DL7DF
KH8/DL7VTK	DL7DF
L8DX	GACW
LP7N	LU2NI
LU3ZI	GACW
LU5EVB/Z	GACW
LU6UO/Z	GACW
LU7X	GACW
LYOHQ	LY2ZZ
NCT3/W	DJØMW
NH2G	WF5T
OH1LU/P	OH1LU
OIØ/OH3GZ	OH3GZ
OI2E	OH2IW
OI7AB	OH7AB
OI8LQ	OH8LQ
OZ/DL1EBR	DL1ERB
OZ/DL6JWN	DL6JWN
OZ/DL8AAM	DL8AAM
P29VR	W7LFA
P4ØDC	AA6DC
PA3EVJ	VE3MR
PYØFF	W9VA
R9/W8JY	W8JY
RA2FBC	DJ1OJ
RA9DX	SP7LZD
RAOFA	KM6ON
RF1CP	RA1CP
RK2FWA	DK4VW
RK9XYW	RA9XF
R1ANZ	UWIZC
R1ASP	RA1AD
RP3QWK	RN3QO
RU9J	RA9JR
RW2F	DK4VW
RW9AY	UA9AB
SP5PB/1	SP5PB
SU3AM	DL1FCM
SV8/I2YYO	IK2MYX
T3ØEG	KH6JEB
T94GB	S52CX
T95LSD	G4XTA
T99A	I4QGU
TA2IJ	DJ9ZB
TA3/VA2CO	VE2ZH
TKØP	F6AUS
TK5XN	F2YT
TL8/F5JKK	F6FNU
TMØZK	F5OZK
TM2JP	F5WA
TM6BJ	F6KEX
TM6MXP	F5KFL
TM7XX	F5MUX
TN5MNN	EA5FS
TR8VP	F6FNU
TT8SP	F5OIJ
TT8WD	F5UPY
TY1IJ	DK8ZD
TZ6FIC	F6KEQ
UA2DC	DKVW
UA2FF/FJ	DK4VW
UA9XK	RW6HS
UE3ROM	RW3RN
UN9PQ	IK2QPR
UR4WWT	WR3L
UU5J	UB4JLF
UXOZZ	N3IRZ
V26AK	WB2P
V26B	WT3Q
V26DX	KK3S
V26E	AB2E
V26R	KA2AEV
V26RN	KR2J
V26T	K3MQH
V26TS	KF3P
V26U	WA2UDT
V31RM/UO	DL7DF
V51CM	WA2JUN
V52UTR/UUO	DL7DF
V63MC	JH8BKL
V63SD	K7ZSD
V63TM	JA7AB
VE8A	VE3TIG
VI75RAAF	VK4LV
VK2HV	VK4FW
VK9XB	JJ1TBB
VP5/JJ2QEH	JJ2QEH
VP5/N9DX	N9DX



The best Christmas present I think I ever received was my ham ticket. I got the call, W9LHS, and station license on the day before Christmas, 1932. What a thrill for a sixteen year old high school kid who, with a group of his classmates, had applied for a "Temporary" ham ticket. So this coming Christmas will mark 64 years of my sending sparks into the antenna. What a great hobby!

North Dakota was part of the ninth call district in 1932, hence the numeral nine in the call. A few years later the district was divided and we were assigned into the new tenth district with a zero in each call.

I have seen a lot of changes in the world since the day I became a ham. And the very day I started to write this December column I went to a seminar on "Solutions" sponsored by the software giant Microsoft. I am never anything but amazed when I go to such meetings and look and listen to the presentations by the people of the company.

As a retired film producer/cameraman/writer/editor/etc. I am completely amazed as to what has happened to visual aid-communication equipment and software in the last decade. Everyone in the visual communications business seems to be trying to emulate music video's style of editing which I give a small "one" on a scale of "ten" for actually communicating any ideas to the human beings who watch their TV presentations. Most of the visual stuff I see on that television channel looks like the "out-take" roll we had when we edited educational and/or industrial films in our Moviolas. Just pictures to occupy time while the band plays on.

Today's TV commercials and some shows are going in that direction, too. Every producer is copying the fast cuts and strange camera angles that have made music videos something senseless to actually watch. You can look carefully at the screen for a long time and not really get the idea of what the director is trying to say at all. "Blur-vision" is what I tend to call modern cinema techniques particularly auto commercials. It's all a big unexplained blurrrrr, with the narrator carrying the message, if there really is one...that's all.

And what I just said goes for the Microsoft audio visuals I watched this morning. The great wonderful technique of making video tapes in a computer has grown so easy to do that some producers don't really bother to communicate, they try to dazzle the audience with effect after effect on the screen. "Don't use the same effect twice in a seminar" must be the wishes of Bill Gates, because what I saw today was lost in confusion of what the whole thing was about.

The live narrator and moderator of the seminar would press the button on the computer mouse and something new would slide on the screen. Nobody bothered to tell the audience what those pictures were trying to show, and the words on the screen were sliding on and off so fast it wasn't even fun to try to read them.

I have always maintained that the pictures tell the story, the narration only guides the viewer to receive the information what the pictures are saying. In 1961, I made one 12 minute educational film that is still in many educational film libraries. It is called "Cry of the Marsh" and it has no narration, only music and sound effects on the sound track. It's a powerful visual for preserving the wetlands of North America. It won in every film festival it was entered in, and there is not one sequence of fast cutting in the documentary.

Back at the Microsoft presentation, I managed to get something out of the presentation, but all those screens filled with headlines, sub-headlines and miscellaneous pictures of people with computers and/or doing something were wasted on my 80-year-old brain, believe me.

And to top the whole Microsoft thing off, the sound on the speaking to the camera segment by bossman jillionaire Bill Gates was a few frames out of sync — believe it or not: The sound lagged the picture by a beat or two.

Dayton memories

I have been to the Dayton Hamvention a few times in past years. I was even on the RTTY program one year, which was a lot of fun.

I always enjoyed making the trip probably because I always went with Bob Stanek, WØHAH, a fellow RTTY enthusiast from Minneapolis. My last year at the hamfest Bob and I had were joined by Jules Freundlich, W2JGR, an industrial strength RTTY keyboard operator. I haven't gone for the past couple of years because Bob was ill and couldn't go, and also, I needed new knees because Dayton required a lot of walking.

Recently, I received a phone call from Bob's wife and she told of Bob's passing into the silent key world. The shock of the news hit me rather hard, because we had been RTTY pals for so many years. He and I called each other when a new RTTY country would pop up on the bands (naturally only after we had worked the newcomer, never before). We challenged each other and we laughed when we could score a beat for a new country. It made ham radio even better than the great hobby it is.

Bob was a telephone engineer for the Bell System in Minneapolis in his working years. He was also a volunteer clown for the Minneapolis Aquatennial annual celebration, and this second hobby was as well developed as his ham activities.

Whenever Bob and I would go to Dayton he always carried a couple of small magic tricks that he would pull on unsuspecting exhibitors in the flea market area, an area that covered about five acres of parking lot. The first year we went together he carted a great trick for the occa-

sion; it was a small ball peen hammer with a built in sound effect of glass crashing and tinkling. All the hammer operator had to do was tap it lightly on anything and the glass crash would resound through a tiny speaker built into the gag tool.

Well, with hundreds of computer monitors, CRT tubes, etc., scattered all over the Dayton hamfest area, you can probably guess how much fun we had tapping the little hammer on computer monitors. Bob would walk up to an exhibitor, pick out a monitor that faced away from the proprietor and ask, "Are you sure there is safety glass on this monitor?" When the flea marketeer answered yes to the question, Bob would take the little hammer out and tap the glass front of the monitor. You can imagine the shock wave that hit the salesman!

One lady jumped up and screamed at us: "You broke it! You broke it! You broke it, so you bought it!" I thought she was going to have a heart attack; she was livid. And she didn't laugh when she discovered she was the butt of the joke either. Bob apologized to her, but she was still mad when we left the area.

Another year he had a small gag Skill saw. When it was started by the rope pull on the machine, it made circular saw noises, and loud realistic cutting wood sounds as it was pushed across the top of a table. It was a gag that Bob bought from a magic supply store. More buzz saw laughs around Dayton.

This last May, at the insistence of Jim Romelfanger, K9ZZ, and Maury Mead, W9FBC, I went to the Circus World Museum in Baraboo, Wisconsin for the opening of the summer circus season. There I met a raggedy volunteer clown named "Troubles." When I asked her if she knew Bob Stanek, who clowned under the name of "Rags," she gave me a great testimonial for Bob's participation in the amateur clown world. He was a judge for hobby clown competition all over the country.

Bob also was an amateur magician to go with his clowning. A few years ago Bob and I invited Taka, JA1JDD, an official of the TEAC company in Japan and a RTTY friend of ours, to visit Bob's ham shack and magic room while he was in Minneapolis on business. I didn't realize Bob was an accomplished magician, too. So I was as amazed as Taka and a Japanese companion were when Bob put on a magic show for us in his basement. He had all of us trying to catch the secret of his tricks, but he held out on us, and laughed with us. WØHAH was a great person and I know the hams in the Minneapolis-St. Paul area will miss him. I know I do!

Pearl Harbor story

Gene Johnson, a friend of mine, recently told me how his father, WØRWJ, on December 7, 1941, was working a ham in Honolulu when the DX station interrupted the QSO by saying, "Hell's a popping. I think we are being bombed. I'll be right back!" His father waited and waited, but the Hawaiian station never returned to his calls. The war in the Pacific had started.

I'll never forget where I was that day. I was lying on my bed reading a college text preparing for a final exam the next day, Monday. I had the radio on softly playing "Sammy Kaye's Sunday Serenade" music show when the announcer interrupted the program for a bulletin telling the world that Pearl Harbor was being bombed. I quit studying that very moment. You're right, I did poorly in the final the next day.

In my ham log of the day, I made the note that Amateur radio was suspended by the FCC. After that we had to register our all our home-built ham transmitters with the FCC. I recently found the certificate of registration in my log of that year. In 1946 WØLHS went back on the air after three and one-half years of radio silence.

EAVESDROPPINGS

I THINK I NEED ANTIFREEZE IN MY ANTENNA ROTATOR, IT DON'T TURN SO GOOD IN THE BELOW ZERO WEATHER.... IT'S NICE TO SEE THE SUN SPOTS DOING THEIR THING AGAIN, WHATEVER IT IS THEY DO . . .

Thanks to WA6OHB, WØML, WØZQJ for their comments. Write me: Bill Snyder, WØLHS, 1514 12TH ST S, FARGO, ND 58103-4134. My packet address: WØLHS@WØLHS.#SEND.ND.USA. NOAM. 73 DIT DIT. **WR**

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BILL PASTERNAK
WA6ITF
28197 Robin Ave. • Saugus, CA • 91350
(Internet)billwa6itf@aol.com
(AOL)BILLWA6ITF
(Netcom) newsline@ix.netcom.com
(24-hr voice/fax) 805/296-7180

National coordination comes one step closer

Unified standards and guidelines for coordinating Amateur Radio repeaters in the United States, its territories and possessions could be a major step closer to reality because of a tentative agreement reached on 13 September. The American Radio Relay League and the National Frequency Coordinators Council have agreed on the wording for a Memorandum of Understanding between both groups. The agreement stems from a meeting between the Council's Board of Directors and the League's Ad-Hoc Repeater Committee. The meeting took place at the ARRL's National Convention in Peoria, Illinois. Under the agreement, a new National Frequency Coordinator's Office will be established. The office will maintain a national database for all matters affecting repeater coordination.

If approved by a vote of the ARRL's Board of Directors, the new office would take a heavy role in coordination matters. It will serve as a communications liaison, or single point of contact between the Council and the FCC. It will act as a repository for information about standards and procedures for frequency coordinators throughout the US, and will contain procedures for resolving coordination and interference disputes involving amateur repeaters. The office will also oversee identification, certification and de-certification of frequency coordinators, based on standards to be developed by the Council.

The Council is already made up of the nation's currently recognized repeater coordinators. It will develop and recommend for adoption what the Council calls fair and equitable procedures for frequency coordination. The Council will also gather and supply data to the League about band occupancy and usage as part of an effort to make sure that listed radio systems really exist and are not simply paper repeaters.

The agreement calls for the ARRL to recognize the Council's independence and to provide what is called "suitable resources and support" to the Council. The League would also provide radio amateurs with information on how to contact frequency coordinators certified by the Council. The agreement also calls on both groups to use their resources to achieve common goals, especially on issues involving amateur regulatory, technical or operating policies.

However, there are unaddressed issues. For hams who operate or put up repeaters, the draft agreement seems to mean little. The Memorandum of Understanding makes no mention of repeater users, or other non-relay spectrum users. Do these hams or others have any rights about decisions on who can put a repeater on the air, and who will not? The Memorandum doesn't say. Nor is there mention of protecting existing repeater operating policies or assurances for new repeaters trying to get on the air.

The Frequency Coordinator's Office can't be created until the League's Board of Directors approves the Memorandum of Understanding. Whether that will happen is not guaranteed. The League's Board meeting is scheduled for mid-October. By the time I sit down to write January's column, any action by the ARRL's board will be known.

My thanks to David Black, KB4KCH, for co-authoring this item.

The best repeater in town

This month we hear from George Tranos, N2LSK, of Bellport, New York, who rightly says that when on Long Island, be certain to visit any of the repeaters operated by the LIMARC — The Long Island Mobile Amateur Radio Club. The repeater and tone access frequencies are as follows:

In Queens or Nassau: 146.850(-) 136.5 PL

1288.00(-) 136.5

In Nassau or Suffolk: 147.375(+) 136.5 PL

449.125(-) 136.5 PL

N2LSK says that the club machines welcome visitors and there is always someone listening! I was a resident of the "Big Apple" when the LIMARC systems came into being. I make use of them several times a year when I travel to the area and always find a QSO on a "LIMARC box."

From the packet airwaves

With the holiday season now upon us, the following packet posting by Bruce Nolte, N6TFS, dealing with highway safety seems very timely. Bruce says that any ham can be of help at any time. It only takes learning how to observe and report.

How hams can help with highway emergencies

Bruce Nolte, N6TFS

Daily, around our country, hams encounter highway emergencies on their travels. It could be as simple as a motorist stranded on a center divider or as deadly as a multi-car traffic accident. These are all emergencies and are worthy of dialing 911.

In this state, all emergency call boxes are located on the right shoulder of the road. All too often a motorist stranded in the center divider attempts to run across traffic lanes to seek help. The state Highway Patrol considers these calls a priority — just as a traffic accident is.

You don't have to ask for a control operator on a repeater to find help. Any interested ham on any frequency who is near any telephone (pay phones, autopatches and cell

phones are fine) can help. I know hams, including myself, who take emergency calls from other mobile hams, and forward them via an autopatch, while driving.

Being a good communicator is the important thing here, not how it gets through. If you are on a surface street and near a pay phone, often that is quicker than even using ham radio. Just dial 911, a free call. Here are the basic steps, from both perspectives, in handling a typical call:

HAM #1: Sees a highway emergency and takes note of details: Location, injuries, description, etc., grabs radio, calls for help. Looking for someone near a phone he transmits: "I have an accident to report, could someone near a telephone assist me? <your call sign>"

HAM #2: (near a phone) responds: "Yes, go ahead with your emergency traffic" (having pencil and paper ready and the phone near the radio is a real plus).

HAM #1: Slowly describes: Location, vehicles, injuries, etc.

HAM #2: Reads back all of the info to HAM #1, checking for errors.

HAM #1: Confirms accuracy or provides needed corrections.

HAM #2 then asks HAM #1 to stay on frequency, in case more info is needed.

HAM #2: Dials 911, asks for needed agency (police, highway patrol, etc.). When the appropriate agency comes on, he explains that this information is via Amateur Radio and then reads the info to the dispatcher.

HAM #2: Calls back HAM #1 on the radio and confirms delivery of the message.

HAM #1: Thanks HAM #2 for handling the traffic.

That's all there is — it's not rocket science, but it can save lives. If you are the mobile ham, don't be afraid to call for help several times. Use plain English when asking for help. You don't need to use any special codes or hamspeak. The responding ham near the phone may even need your coaching. That is not a problem, just walk them through it.

Hams don't have to be members of any special emergency groups to assist on either end of this type of emergency. Through our FCC license and Part 97 of the rules we are expected to assist the public with emergencies — we don't have to be knighted by the Queen first. The repeater on which I am active in the Los Angeles area handled about 5,000 calls last year.

While the W6FNO repeater, 146.82 (-) specializes in this type of communications, *it can be done on any repeater — and should be.* That is why we all should leave nice pauses between our transmissions, so that emergencies can get through.

Hurricanes and floods don't happen everyday, but highway emergencies do. Handling this kind of radio traffic is great training for larger disasters. Many of you will find that it will increase your confidence on the radio — it did for me. If this has provoked any questions or if I have left out something, drop me a line. Feel free to include this in club newsletters. If you do, please send a copy to Bruce Nolte, N6TFS, P.O. Box 41446, Los Angeles, CA 90041.

From the e-mail bag

This month we present a comment on the challenge to the 2 meter and 70 cm bands from the so called "Little LEO" or Low Earth Orbiting Satellite industry. Robert Irwin, WA6CVB, has one simple solution. He says that private repeaters may be part of the problem.

Subj: LEO challenge to 2 and 0.7 m. bands
From: Robert H. Irwin
To : Bill Pasternak
Dear Bill,

I, too, am concerned with the attempt of the Low Earth Orbit satellite industry to reassign the amateur 2 and 0.7 meter bands to their use, and have written to the FCC to object. I think that we may be partly to blame for this, however, in the way we use repeaters on these bands. Specifically, I am referring to the prevalence of "closed" repeaters, often existing for the private use of a very small group of people, for casual two party contacts or phone patches. Isn't this the reason for the cellular telephone service?

As long as we use these bands in this way, commercial interests will challenge us and eventually prevail. (Remember 11 Meters?)

Let's keep our repeaters busy, even if it is only "rag chewing," remembering that there are other higher priorities of use. To me the lowest priority of all is non-use.

73,
Robert H. Irwin, WA6CVB

Holiday greetings

As 1996 draws to a close and 1997 makes its debut, Sharon and I want to take this opportunity to wish each and every one of you a Merry Christmas, a Happy Chanukah and a most prosperous New Year.

de Bill, WA6ITF, and Sharon, KD6EPW, Pasternak

In addition to the addresses listed in the column head, e-mail up to 50 kilobytes can be sent to wa6itf@juno.com). WR

Search And Rescue Communications

Jerry Wellman, WB7ULH
P.O. Box 11445
Salt Lake City, UT 84147

Preemptive response! I like this concept. A recent issue of *Rescue* magazine discussed how Urban Search and Rescue (USAR) teams were on standby for the Olympics in Atlanta. The magazine discussed how appropriate it was to have emergency response ability in readiness for certain events just in case something happened. The issue at hand is the time it takes to respond. When you are in close proximity to an event it only makes sense that rescue can happen sooner.

One of the greatest challenges facing volunteer groups is that of a quick response. Many of us sign up to be on call for various agencies but few of us drive to work in an emergency vehicle or carry our response gear with us. Many SAR groups carry pagers and coordinate with employers to allow volunteers the ability to respond to callouts. This works until the callouts adversely affect the employer.

Some volunteers work in areas where parking is an issue and either take public transportation or share rides with others. In the event of a response, it could take an hour or two to get home and then on scene. It is critical to an emergency that response is quick and efficient. If you're a search pilot for the sheriff SAR team, your aircraft does no good unless you're there to fly when needed. The essence of quick response is the need to treat injury quickly, to rapidly establish a perimeter (for lost person search), or discover immediate evidence such as smoke from a crash site.

"Where do you get ideas for setting up a home station?"

Knowing the response ability of your group is the first step in managing a callout. How many are home during the day or night? How many are retired or have flexible business hours? How many drive to work? And how many carry appropriate response gear? You may have a critical team leader who spends a great deal of time out of town or others who cannot leave work. It's a given that during a major event you'll have more available volunteers. It is the small "emergencies" that create your dilemmas.

If someone is lost or a fire is burning "way over there" it's not as critical to your boss as doing normal business. If your employer's daughter is missing on a hike 200 miles away, it is an emergency. It is all relative. I recall an employer who was tolerant of me leaving to assist on a search mission as long as it didn't happen too frequently. I had to use my vacation time to do it, but it was allowed even with the short notice that often occurred. When a co-worker was reported overdue on a trip, the situation changed. I was called at home and asked to help get a search underway. Management offered to hire aircraft, pay search expenses, or hire resources in order to effect the search. It's all relative.

Seeking and cultivating available volunteers is my suggestion for any SAR group. After you identify the need (such as during the working day) focus on recruiting and training those who can help fill this "shift." It is also possible to work with employers to allow a quick response by some of your most needed people for a short time. You may be needed only to set up the communications center and then could return to work after others have arrived to handle the radio operation.

What came to mind as I considered "preemptive response" is the development of resources close to responders. Perhaps an employer would allow you to install a radio or to store equipment at work that you could take if needed. Many of the Salt Lake area agencies have been willing to purchase and install Amateur Radio equipment for emergency use. If I am available and downtown, there are five emergency operations centers within walking distance where I could be of service. I would not need equipment as it is in place and ready for me to operate. There are also several hospitals a little further away (but still in walking distance) that have also installed equipment.

Another good idea your group might consider are your own dispatch centers. Many Amateur Radio operators have stations that could be designated as net control sites. For example, if I were stuck downtown, some 15 miles from home, it would make sense for someone near my station to be able to use it in an emergency. A proximity operator could get a control station up and running and have resources (HF, packet, VHF, UHF, etc.) to get a response underway. The initial start-up happens quickly and no time is lost waiting for station owners to get home. If

you have a number of available stations geographically scattered in your area the potential for rapid activation exists.

The key to this type of preemptive response is planning. You can't just have someone breaking down your door to use the station, but having a key with a neighbor or taped to the tower (on the six foot support spar) makes it possible to gain entry. When you designate such a station and the owner agrees, an expectation now exists that the station be maintained in a "ready" state. The owner has a personal mission to keep everything ready and the shack stocked (and clean) for quick activation. It means, perhaps, adding auxiliary power sources (solar, battery, generator) to the shack and ensuring the equipment is safe (well grounded).

I recall visiting the shack of an Amateur Radio operator who maintained a very impressive setup. An efficient layout of equipment made it easy to operate a variety of modes and everything was marked and clean. This operator was, however, disabled and in poor health. He was not able to attend meetings but did check into voice nets. He has since moved from the area due to ill health but I think now we missed the boat in not recruiting him as an Amateur Radio dispatch point. I believe he would have been excited to fill the role of keeping his station ready for quick use and I can think of two occasions where his home would have made an ideal staging and operations area.

Once in a while someone will ask: "Where do you get ideas for setting up a home station?" Simple answer: Look at a lot of other stations and steal ideas that work for you. One great source of idea fodder is the ***Worldradio*** monthly feature on station appearance. Each month you get a glimpse of someone else's shack and if you examine the photos carefully, you can see what might work for you. You could even contact the owner (by looking up the call sign and getting an address) and ask "how did you build your shack?"

One other idea is to visit public safety dispatch sites and observe. These are people who live at a console for many hours a week and for which comfortable surroundings are important. With careful observation and a question or two you'll learn a great deal about the little things that make life on-the-air pleasant, especially during stressful operations.

A good idea

San Diego RACES is gearing up to offer a "Communications Academy" early in 1997. I'll try to get more information for a future column but let me assure you this is a great idea! Tim Powers, KA6BJF, is the moving force for the effort and he is the training officer for San Diego County RACES.

Among the topics for classes are:

- Basic RACES orientation and operation.
- Incident Command System.
- Packet radio operations.
- Public safety radio (how it differs from Amateur Radio).
- Vehicle operations.
- Wildland fire safety (how to stay alive).
- Helicopter ground safety.
- Basic first aid.

The word I got from Tim is that these classes will be offered on weekends. These classes look like what is needed in many areas to get new (and old) operators up to speed with basics and policies. I would encourage every radio group to look at how they might sponsor regular training events for your local Amateur Radio community.

You might want to consider a monthly session and announce it on your local repeaters and nets. It would not impact your group adversely if you spread the load among several people and held your sessions in a public access building such as a library or community center. Look through some past columns to get my suggestions on presentations and preparation for training sessions. If you decide to do one, make sure you have lots of handouts, that you are well prepared, and that you spend some time to make it an impressive session.

Your first session sets the general tone for those to follow. If word spreads that you did a super job and the time was well spent, you'll attract others.

Keep in touch! Let me know what works for you and what doesn't. I appreciate the e-mail (jw@desnews.com) and letters. Until next month, best wishes from Salt Lake City. WR

Lorraine S. Matthew, N4ZCF
MARS call AAA9PR

This December, 1996, closes the door on a most interesting and exciting year — a year in which the new Army MARS has continued its transition into operations for the twenty-first century.

The most recent change in operations concerns the Department of Defense mandated deletion of CW operations from military frequencies. This order, of course, met with highly mixed feelings on the part of the MARS members from all services. CW has been given an honorable and dignified farewell through a special CW broadcast held on 30 September, 1996. The broadcast was made in code in the same manner as is used during Armed Forces Day. Special event certificates, signed by all three MARS Chiefs, were awarded to those CW operators in all the MARS services who copied the broadcast accurately.

The text of the message read:

"Subject: MARS special CW broadcast

1. From the very beginning of MARS operations in 1925 when the Army Amateur Radio System (AARS) was founded, CW has played an integral part in the total MARS communications system. Although it has a long, proud, and distinguished service, its importance to military communications has been replaced over the years by newer digital mode technology.

2. We bid our old and faithful friend farewell with very deep and strong emotions, but knowing well that the time for parting has come. We shall miss you, old friend, but never forget the legacy you have left us as we prepare to move forward into the twenty-first century. Like an old soldier, airman, sailor, and marine, the time has come for your retirement from MARS service.

We salute you as you step out smartly to the rhythmic beat of the drums into a well-deserved retirement from MARS service with the highest of honors. Sgd" (by each respective MARS Chief issuing the message).

As we say farewell to CW, we welcome the many other digital modes of traffic relay such as RTTY, Packet, AMTOR, GTOR, Pactor, Clover, and other modes, some of which are still being developed. These modes have increased the speed and accuracy of traffic relay. Radio-to-wire integration of e-mail and radio will yield exciting and real-time communications possibilities that were never available before. A number of Army MARS Internet worldwide web pages have been developed and are linked to the Army MARS Web Page at HQ Fort Huachuca (http://aaa9isc.army.mil). An FTP/IP BBS for MARS information is under development. All of these developments and accomplishments are being carried by the volunteer Army MARS members. Coordination at staff levels pulls all of this talent and accomplishment together into a cohesive whole which serves, and will continue to serve, the MARS system very well.

All of this digital development does NOT, however, diminish in any way the importance of voice communications in the Army MARS program. Indeed, the digital modes enhance the voice networks. Much of the information discussed on the voice nets comes from a digital relay at some point.

The importance of voice communications is emphasized by the maintenance of voice networks within each state as well as by the proposed development of a system of regional voice networks. Such regional networks had their experimental beginnings as part of the Grecian Firebolt 96 Emergency Communications exercise.

The success of the regional concept with that exercise has brought the concept to the drawing boards for possible permanent implementation. A state line will no longer be a barrier to traffic relay and the dissemination of MARS information. Propagation often dictates the use of relay stations outside of state boundaries if those stations are available. By developing a regional network, those stations will be available — thus improving HF capabilities throughout the system. VHF/UHF linked networks are another set of adjuncts to the HF system. Particularly with the emergency mission that characterizes Army MARS operations, the VHF link has proved invaluable. Very often it is a VHF operator who has the first hand knowledge of an incipient or on-going emergency situation. That operator gets the information to an HF operator who can relay the information long haul by voice or by using a variety of modes available at the time. In several instances, MARS operators have alerted the federal agencies via the Director of Military Support (DOMS) several hours before standard sources of information realized that anything was happening. This is a success story for Army MARS happening all over the country.

Long haul voice communications are further enhanced by the establishment of the Army MARS National Emergency Coordination Network (AMNECN). This net is another outgrowth of the Grecian Firebolt 96 exercise. It has served the entire nation, plus outlying Pacific American areas, very well as a MARS 911 system. It is operational and monitored 24 hours per day. If an operator cannot raise a response in his own state or region, he or she can access the AMNECN and get assistance.

It has been my personal experience to be monitoring the frequency and hearing nothing to suddenly be called by a station needing assistance and being able to assist. It is a strange sensation to think that you are alone on frequency to know that there are, indeed, other stations using the net that the net is there for that very purpose. Long skip propagation often makes it impossible for stations within the same state to hear each other. This long-haul net opens the communications possibilities for us all and for all the American people whom we serve.

Thus as we say farewell to CW, an old friend who has served well for more than 70 years, we continue to embrace other newer modes that have replaced it which will insure that MARS will remain:

Proud, professional, and ready. WR

Visit Your Local RADIO CLUB

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

ALASKA

South Central Radio Club. 8023 E. 11th Ct., Anchorage, AK. Meets 2nd Fri./monthly, 7 p.m., UAA Business Ed. Bldg., Rm. 220. KL7CC, (907) 338-0662 for info. Club rptr: KL7CC/R 146.97(-) PL 103.5 Hz. 2/97

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., 1515 E. Osborne, Phoenix. Info: (602) 631-4879. 9/97

Cochise Amateur Radio Assn., (CARA). Meets 1st Mon./monthly, 7:30 p.m. at club facility on Moson Rd., Sierra Vista, AZ. WA7KYT/R 146.76(-) rptr. 5/97

Old Pueblo Radio Club, (OPRC). P.O. Box 42601, Tucson, AZ 85733. Meets 2nd Wed./monthly, 7:15 p.m., Northwest Neighborhood Center, 2160 N. 6th Ave. (South of Grant). 2/97

Tucson Repeater Assoc., P.O. Box 40371, Tucson, AZ 85717-0371. Meets 2nd Sat./monthly, 7:15 p.m., Dept. of Emergency Mgmt., 130 W. Congress. Net Thurs. 7:30 p.m. 146.82(-), 146.88(-), 147.08(+), 448.550(-) & 145.15 Packet. 3/97

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(-). 5/97

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. 4/97

Clovis Amateur Radio Pioneers, (CARP). P.O. Box 514, Clovis, CA 93613. Meets 1st Fri./monthly, 7:30 p.m., Clovis Sr. Cntr., 840 4th St. Info: (209) 298-7707, KE6TCY 147.675(-) PL 141.3 net Thur. 7 p.m. ARRL SSC 3/97

Contra Costa Communications Club, Inc., WD6EZC/R. P.O. Box 20661, El Sobrante, CA 94803-0661. Meets 2nd Sun./monthly (except May & Dec.), 7 a.m., Baker's Square Restaurant in Richmond, CA. Info: Ed Caine, KA6OFR, (707) 996-0962. 1/97

Downey Amateur Radio Club Inc., W6TOI. Meets 1st Thurs./monthly, 7:30 p.m., So. Middle Sch. cafetorium, 12500 S. Birchdale, Downey, CA. (Summer exception: contact Doug, N6WZI, (310) 929-1441). VHF net W6GNS rptr. 146.175(+) Thurs., 7:30 p.m. 5/97

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. 145.110 MHz. 6/97

Fresno Amateur Radio Club. Meets 2nd Fri./monthly, 7:30 p.m., Ernie Pyle School, 4140 N. Augusta, Fresno, CA. 146.94(-) 223.94(-). 11/97

Fullerton Radio Club, Inc., W6ULI. P.O. Box 545, Fullerton, CA 92632. Meets: 3rd Wed./monthly, 7:30 p.m., Sr. Citizens Ctr., 340 W. Commonwealth, Fullerton. Net ea. Tue., 8 p.m. 147.975(-). Info: Bob Hastings, K6PHE (714) 990-9203. 6/97

Garlic Valley Amateur Radio Club (GVARC). Meets last Sat./monthly, 8:30 a.m., Dimitri's Gilroy Inn, 1st and Wayland St., Gilroy, CA. Info: Hal, AC6LK, (408) 779-7787. Net Tues., 7:30 p.m. Club rptr. K6THR, 147.825(-). 6/97

Golden Empire Amateur Radio Society, (VEC). P.O. Box 508, Chico, CA 95927. Club call W6RHC, rptr. 146.85(-). Meets: 3rd Fri./monthly, 8 p.m. at 1528 Esplanade, Rm. 101, Chico. 9/97

Golden Triangle ARC, (GTARC). Meets 4th Mon./monthly, 7:30 p.m., Sharp Health Care Activities Rm., 25500 Med. Ctr. Dr., Murrieta, CA 92562. 6/97

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. (510) 846-6513. 12/96

Marin Amateur Radio Club (MARC). W6SG. Box 151231, San Rafael, CA 94915-1231. Meets 1st Fri./7:30 p.m., Kaiser Hosp., Bldg. 2, Terra Linda, CA. (Summer exceptions; contact Pete N6IYU, 924-1578). Sun. AM Club at Red Cross, San Rafael. 9/97

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, (714) 551-2010 or (714) 551-1036. 2/97

Mount Diablo Amateur Radio Club. P.O. Box 23222, Pleasant Hill, CA 94523. Meets 3rd Fri./monthly, 8 p.m., Our Savior's Lutheran Church, 1035 Carol Ln., Lafayette, CA. Net Thurs. 7:30 p.m. on 147.06(+) 100Hz PL. Info: (510) 932-6125. 7/97

North Hills Radio Club. Meets 3rd Tue./monthly, 7:30 p.m., Carmichael Elks Lodge, 5631 Cypress, Carmichael, CA. Nets 8 p.m. Tue., Wed., Thur., 145.190(-)(162.2) and 224.400(-). Contact: Bob, WA6ULL (916) 983-2776. http://www.ns.net/~NHRC 3/97

Orange County Amateur Radio Club. Meets 3rd Fri./monthly, 7:30 p.m., Orange County Red Cross, 601 N. Golden Circle, Santa Ana, CA. 146.550. Contact Bob Buss, KD6BWH, (714) 534-2995. 1/97

River City A.R.C.S. Meets 1st Tues./monthly, 7 p.m., SMUD Bldg., Don Julio at Elkhorn, Sacramento, CA. License classes offered. For info contact Lyle, AA6DJ, (916) 483-3293. 9/97

San Gabriel Valley Radio Club, Inc. P.O. Box 88, Monrovia, CA 91017-0088. Meets 1st Tue./monthly, 7:00 p.m., Arcadia County Park, 405 So. Santa Anita Ave., Arcadia, CA. 147.765(-) PL 131.8. Info: (818) 857-0249. 12/96

Santa Clara County Amateur Radio Assoc., (SCCARA) W6UW & W6UU. P.O. Box 6, San Jose, CA 95103-0006. (408) 249-6909. Meets 2nd Mon./monthly, 7:30 p.m., United Way, 1922 The Alameda, San Jose. Net all other Mon., 7:30 p.m. W6UU/R 146.385(+), 442.425(+) PL 107.2. 5/97

Shasta Cascade Amateur Radio Society, (SCARS). 2124 Airstrip Rd., Redding, CA 96003. Meets: 3rd Wed./monthly, 7 p.m. at the C.D.F. Conf. Rm. Grape St., near Parkview Ave., Redding, CA. Net 146.64, Wed., 8 p.m. 9/97

Sierra Foothills ARC. P.O. 3262, Auburn, CA 95604. Meets 2nd Fri./monthly, 7:30 p.m., Firehouse, 226 Sacramento St. Auburn. 28.415, 2/220m, Thurs. 7:30 p.m., 145.430(-) (PL 94.8) & 223.86(-). 3/97

So. Sierra ARS. Meets 2nd Thurs./monthly, 7:30 p.m., Veteran's Hall, 125 East F St., Tehachapi, CA. Contact: Caroline, KD6KMN, (805) 822-5995. 147.06/224.42. 12/96

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. 7/97

Southern California Six Meter Club. P.O. Box 10441, Fullerton, CA 92635. USB Net Tue., 8 p.m., 50.150. FM Rpt. Net Thurs., 8 p.m., 52.86/52.36 tx. FM Smplx, call freq. 50.300. Net Sun., 10 a.m. 50.40. 4/97

Southern Humbolt ARC, (SHARC). Meets 4th Tues./monthly, 7 p.m., Best Western Humboldt House Inn, Garberville, CA. Talk-in on 146.79(-). 4/97

Stanislaus Amateur Radio Assoc., Inc. (SARA). P.O. Box 4601, Modesto, CA 95352. Meets 3rd Tues./monthly, 7:30 p.m., Stanislaus Co. Admin Bldg. 145.39(-) (PL 136.5), 224.14, 440.225 (PL 136.5). 3/97

Trinity Country ARC. P.O. Box 2283, Weaverville, CA 96093. Meets 2nd Wed./monthly, County School Adm. Bldg. in Weaverville, 7:30 p.m., Rptrs: WA6BXN 146.73(-) PL 85.4, W6HOR 146.925(-) PL 85.4. 10/97

United Radio Amateur Club, K6AA. L.A. Maritime Museum, Berth 84, Foot of 6th St. San Pedro, CA 90731. Meets 3rd Fri./monthly (except Dec.), 7:00 p.m. Monitors 145.52 Simplex 10 a.m.—5 p.m. 7/97

Vaca Valley Radio Club. Meets 2nd Wed./monthly, 7:30 p.m. (Board mtg., 7 p.m.) Vaca Fire Dist. Stn., Vine St. in Vacaville, CA. Rptr. WD6BUS 145.47(-) PL 127.3. Mary Turner, (707) 451-2134. 5/97

Victor Valley Amateur Radio Club. P.O. Box 869, Victorville, CA 92392. Meets 2nd Tues./monthly, 7:00 p.m., Presidio Recreation Cntr., 11100 Apple Valley Rd., Apple Valley, CA. Talk-in 146.94(-), PL 91.5. Net Sun. 7 p.m. 146.94(-). 12/96

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: Joe, KA6LPZ, (714) 963-4426. 10/97

Westside Amateur Radio Club. P.O. Box 11092, Marina del Rey, CA 90295. Meets 3rd Thurs./monthly, 7:30 p.m., Red Cross Bldg., 1450 11th St., Santa Monica, CA. Net every Tues., 8 p.m., 146.67(-). Voice mail: (310) 917-1100. 5/97

Willits Amateur Radio Society, (WARS). P.O. Box 73, Willits, CA 95490. Meets 4th Mon./monthly, 7 p.m., Brooktrails Fire Dept. (northwest of Willits). Talk-in: 145.13(-), PL 103.5. 9/97

Yolo Amateur Radio Society. Meets 1st Tues./monthly, 7:30 p.m., Training Rm. of the Davis PD, 226 F St., Davis, CA. Contact Dave Nishikawa, KC6YFG, (916) 756-6375/Talk-in 144.430. 10/97

Yuba-Sutter Amateur Radio Club, (YSARC). P.O. Box 1169, Yuba City, CA 95991. Meets 2nd Tue./monthly, 7:30 p.m., Yuba City Police Bldg., 1545 Poole Blvd., Yuba City. 12/96

CONNECTICUT

Middlesex A.R.S., (W1EDH). Meets Tuesdays, 7 p.m., Adult Day Care Cntr., 32 Miner St., Middletown, CT. VE classes/exams; ARRL Service Club. Ctc: M. Harper, W1FYM (860) 633-6295, P.O. Box 5, S. Glastonbury, CT 06073. 3/97

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. 10/97

FLORIDA

Gulf Coast ARC. P.O. Box 595, New Port Richey, FL 34656. Meets 4th Mon./monthly, 7:30 p.m., 3852 Prime Place, New Port Richey. WA4GDN rptrs. 146.67(-) & 145.33(-), serving all of Pasco County. 9/97

Indian River ARC, Inc., (IRARC). 597 Capri Rd., Cocoa Beach, FL 32931-3011. Meets 1st Thurs./monthly, 7:30 p.m., Community Church of the Nazarene, 400 Crockett Blvd., Merritt Island, FL. 3/97

Port St. Lucie ARA. Meets 1st Fri./monthly, 7:30 p.m., St. Andrews Church, Prima Vista Blvd., Port St. Lucie, FL. Contact: Roy Cox, KT4PA, (561) 340-4319. Call in 146.955(-). 9/97

Saint Petersburg Amateur Radio Club. Meets 1st Fri./monthly, 7:30 p.m., Red Cross Bldg., 818 Fourth St. North, St. Petersburg, FL. Nightly net 6:30 p.m., 147.06(+). Rptrs. 147.06(+), 224.66(-), 444.475(+). Info: C. Wagner, KE4EYI, (813) 894-6710. 1/97

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. 6/98

Vero Beach ARC, W4OT. P.O. Box 2082, Vero Beach, FL 32961. Meets 2nd Thurs./monthly, 8 p.m., Emerg. Mgmt., Indian River County Adm. Bldg., 1840 25th St. Net Mon., 7:30 p.m. 146.64. 12/96

GEORGIA

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, N4OTC, 706/673-2291. 3/97

HAWAII

Big Island Amateur Radio Club. P.O. Box 1938, Hilo, HI 96721-1938. Meets 2nd Tue./monthly, 7 p.m., Army Reserve Center, 470 W. Lanikaula St., Hilo. Talk-in on 146.88(-). 6/97

Emergency Amateur Radio Club, (EARC). P.O. Box 30315, Honolulu, HI 96820-0315. Meets 4th Thurs./monthly, 7 p.m., Lincoln Elem. Sch., 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) 833-6944, WH6CZB. 10/97

Koolau Amateur Radio Club, (KARC). 45-145 Mikihilina St., Kaneohe, HI 96744. Meets 2nd Sat./monthly, 9:30 a.m., Hoomaluhia Pk., Kaneohe, HI. 4/97

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: (312) 262-6773. Info net Tues., 9 p.m. on 146.76(-). Meets 3rd Wed./monthly, 8 p.m. 7/97

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. 7/97

Hamfesters Radio Club, W9AA. P.O. Box 42792, Evergreen Park, IL 60805. Meets 1st Fri./monthly, 8 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. 1/97

Peoria Area Amateur Radio Club, (PAARC). Meets 2nd Fri./monthly, 7 p.m., 1401 N. Knoxville Ave. Info: (309) 685-6698. Rptrs: 146.85(-) & 147.075(+). 5/97

Schaumburg ARC. Meets 3rd Thurs./every other month, 7 p.m., Rec. Center, corner of Bode and Springinsguth Roads. Nets all other Thurs., 9 p.m., 145.23(-). Info: (708) 612-9446. 8/97

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(+). 11/97

LOUISIANA

Baton Rouge ARC. Meets last Tue./monthly, 7 p.m., Catholic HS cafeteria, 855 Hearthstone Dr., Baton Roughe, LA. Info: Norma Ramey, WD5GFD, (504) 654-6087. Club rptr. 146.19/79. 9/97

MAINE

Androscoggin Amateur Radio Club. Meets 1st Wed./monthly, 7:00 p.m., Auburn Police Station, 1 Minot Ave., Auburn, ME. Info: (207) 782-8699. 11/97

MASSACHUSETTS

Quannapowitt Radio Assoc., Inc. 6 Savin St., Burlington, MA 01803. Meets 4th Fr./monthly, 8:00 p.m., (May & Nov. meets 3rd Fri.), at Lynnfield-Wakefield Methodist Church, Wakefield. Info: Jim Chamberlain, N1AKG, (617) 944-5098. 1/97

Wellesley Amateur Radio Soc., & Babson Wireless Club. Meets 1st & 3rd Thurs./monthly, 7:30 p.m., Tomasso Hall, Babson College Forest St., Wellesley, MA (Sept.-June) Talk-in 147.03(+). Info: J. Driscoll, NV1T, (617)444-2686. 12/96

MICHIGAN

Adrian Amateur Radio Club, W8TQE. Box 26, Adrian, MI 49221. Meets 1st Fri./monthly, 8 p.m., Civil Air Patrol Bldg., Lenawee Co. Airport, Cadmus Rd., Adrian. ARES net Sun., 9 p.m. 145.37(-). Info: Tom Parsons, N8QEW, (517) 263-5568. 3/97

Chelsea Amateur Radio Club, Inc. Meets 4th Tue./monthly, 7 p.m., Society Bank, 1478 Chelsea-Manchester Rd., Chelsea, MI 48118. 12/96

Eastern Michigan Amateur Radio Club, (EMARC). Meets 1st Tue./monthly, 8:30 p.m., Woodland Developmental Cntr., Kimball Township (Range @ Smiths Creek Rd.). Contact Frank Forsyth, N8XTO, (810) 987-3540. Talk-in: 147.30(+). 9/97

Edison Radio Amateurs Assoc. Meets 2nd Fri./monthly (Sept.-June), 7 p.m., Edison Western Wayne Div. HQ, 8001 Haggerty, Belleville, MI (So. of Ecorse Rd.). Net each Thurs., 8 p.m. on 145.33(-) and 442.80(+) rptrs. 3/97

Genesee County Radio Club, Inc. Meets 3rd Tues./monthly, 7:30 p.m., Genesee Area Skill Center, Torrey Rd., Flint, MI. (810) 634-6077. 2/97

MINNESOTA

Viking Amateur Radio Society (VARS). Meets last Tues./monthly, 7:30 p.m., basement EOC, Waseca, MN. Call-in 146.94(-). 7/97

MISSISSIPPI

Jackson Amateur Radio Club, Inc. Meets 3rd Thurs./monthly, 7 p.m., Am. Red Cross Bldg., Riverside Dr., Jackson, MS 39202. 10/97

MISSOURI

PHD Amateur Radio Assn., Inc. P.O. Box 11, Liberty, MO 64068. Meets last Tue./monthly, 7 p.m., Gladstone Comm. Bldg. (816) 781-7313, Volunteer Examiner Coordinator. 2/97

NEVADA

Frontier Amateur Radio Society, (FARS). Meets: 2nd Sat./monthly, bkfst. 8 a.m. & mtg. 8:30 a.m., Country Inn, SE cor. W. Sunset, Valley Verde. Club info: Jim Frye, NW7O, (702) 456-5396 or Leona Wallace, WA6OHB, (702) 247-6450. 7/97

Wide Area Data Group, Inc. P.O. Box 3132, Sparks, NV 89432. Meets 1st Sat./monthly, 9 a.m., Jack's of Reno, 5485 Equity Ave., Reno. Info: (702) 356-8200. Call in on 147.30(+) MHz. 5/97

Sierra Intermountain Emergency Radio Assoc., (SIERA). Meets 2nd Tues./monthly, 7:30 p.m., Carson Valley Museum & Cultural Cntr., 1477 Hwy 395 North, Gardnerville, NV. Contact: George Uebele, WW7E, (702) 265-4278, 147.330 MHz. 11/97

NEW HAMPSHIRE

Great Bay Radio Assn., WB1CAG. P.O. Box 911, Dover, NH 03820. (603) 755-2600/335-6643. Meets 2nd Sun./monthly, 7 p.m., Rochester Fire Dept. Training Rm. Talk-in: 147.57. 11/97

NEW JERSEY

10-70 Repeater Assn., Inc. 235 Van Emburgh Ave., Ridgewood, NJ 07450. Meets 1st Wed./monthly (except July & Aug.), 8 p.m., VFW, Valley Rd., Clifton, NJ. Rptrs.: 146.70(-), 224.84(-), 444.15(+). 10/97

Bergen Amateur Radio Assoc., (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., 144.40 9 p.m. Wed. 5/97

South Jersey Radio Assoc., (SJRA). Pennsauken Sr. Hi Sch. at Hylton Rd. & Remmington Ave., Pennsauken, NJ 08109. Meets Jan.-Oct., 4th Wed./monthly, 7:30 p.m. (Nov.-Dec. 3rd Wed.). Talk-in: 145.29(-) rptr. Club call K2AA. 8/97

NEW YORK

Amateur Radio Assoc. 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. W2PVL. 10/97

Genesee Radio Amateurs, (GRAM). N.Y.S. Civil Defense Ctr., State St., Batavia, NY 14020. Meets 3rd Fri./monthly, 7:30 p.m. 147.285(+) W2RCX. 12/96

Hall of Science Amateur Radio Club. P.O. Box 131, Jamaica, NY 11415. HOSARC, 2nd Tue./monthly, Hall of Science Bldg., 47-01 111 St., Flushing Meadow Park, 7:30 p.m. Info: Arnie, WB2YXB, (718) 343-0172. 2/97

Orleans County Amateur Radio Club, (WA2DQL). Meets at Emergency Management Office, West County House Rd., Albion, NY 14411, 2nd Mon./monthly, 7:30 p.m. 145.27(-) — WA2DQL. 12/96

PROS, Pioneer Radio Operators Society. Meets 1st Wed./monthly (except July/Aug.), 7 p.m., Sardinia Town Hall, Savage Rd., Sardinia, NY. Net 9 a.m. Thurs. 3853 kHz. 3/97

The Radio Club of J.H.S. 22, N.Y.C., Inc. WB2JKJ. P.O. Box 1052, New York, NY 10002. 24-hr. hotline: (516) 674-4072. Fax: (516) 674-9600. Non-profit org. using Ham Radio to enhance the education of youngsters, nationwide. Join us — "Classroom Net", 7.238 MHz, 7 a.m. E.S.T. PSE QSL! 9/97

Suffolk County Radio Club, (SCRC). Meets 3rd Tues./monthly, 8 p.m., Bohemia Rec. Ctr., Ruzicka Way, Bohemia, NY. Talk-in: 145.21(-) rpt. Morten Eriksen, KA2UIU, (516) 929-6911. 4/97

Westchester Amateur Radio Assoc., (WARA). Meets 1st Wed./monthly, 7:30 p.m., Am. Red Cross Bldg., 106 N. Bway, White Plains, NY. Club net: 145.495(-) rpt. Tues., 7:30 p.m. Info: Dan Grabel, N2FLR, (914) 723-8625. 2/97

Westchester Emergency Comm. Assoc., (WECA). Meets 2nd Mon./monthly, 7:30 p.m., Westchester County Ctr., White Plains, NY. Contact WB2VUK (914) 631-7424 or WECA INFO LINE (914) 741-6606 for details. Talk-in WB2ZII/R 147.06(+) PL 114.8/2A. 10/97

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(+). 10/97

NORTH CAROLINA

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(+). Phone: (704) 888-4815. 5/97

OHIO

Ashtabula County ARC. Ken Stenback, AI8S (964-7316). County Justice Ctr., Jefferson, OH. Meets 3rd Tue./monthly, 7:30 p.m., County rptr., 146.715(-). 10/97

Clyde Amateur Radio Society (CARS). Meets 2nd Tue./monthly, 7 p.m., Municipal Bldg., Clyde, OH 43410. NF8E rptr. 145.35(-) and 442.625(+) MHz. Net Sun. 9 p.m. Info: E. Remaley, KA8CAS. 3/97

Greater Cincinnati Amateur Radio Assn., (GCARA). ARRL SCC, meets 4th Wed./monthly, 7:45 p.m., Brusman's Hall, 4813 Vine St., St. Bernard. Nets: Mon. 9 p.m. EST 147.15(+), Thurs. 9 p.m., 1.936 MHz. Info: WA8STX, (513) 772-7378 or KW8X 961-3250. 11/97

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(-). 2/97

Western Reserve Radio Assoc. P.O. Box 81252, Cleveland, OH 44181-0252. Meets 2nd Wed./monthly, 7:30 p.m., Jenkins Community Cntr., Main St., Olmsted Falls, OH. Info: B. Beckman, N8LXY, Pres., 146.73, 444.900 MHz. 6/97

OREGON

Central Oregon Radio Amateurs, (CORA). P.O. Box 723, Bend, OR 97709. Meets last Thurs./monthly, 7 p.m., Bend Sr. Ctr., 1036 NE 5th, Bend, OR. 147.06(+) MHz. Info: (541) 385-9497. 6/97

Keno Amateur Radio Club. P.O. Box 653, Keno, OR 97627. Meets 3rd Thurs./monthly, 7 p.m., Keno Fire Stn. Rptr. 147.32(+) W7UFM. Info: Tom Hamilton, WD6EAW, (503) 883-2736. 11/97

Central Oregon Coast ARC. P.O. Box 254, Florence, OR 97439. Meets 3rd Sat./monthly, 9 a.m. for brkfst. Net, Wed. 7 p.m., 146.80(-). Info: 997-2323 or 997-4074. 1/97

Umpqua Valley Amateur Radio Club, Inc. P.O. Box 925, Roseburg, OR 97470. Meets 3rd Thurs./monthly, 7:30 p.m., Douglas County Courthouse, Rm. 310, Roseburg, OR. Info: W5PII/R 146.90(-) or (503) 673-1310. 6/97

Valley Radio Club of Oregon. Meets 1st Fri./monthly, 7:00 p.m., Lane County Red Cross chapter house in Eugene. Info: (541) 683-0987 or write: VRC, c/o 159 E. 16th Ave., Eugene, OR 97401. 12/96

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. 10/97

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. 145.01. 3/97

Mid-Atlantic ARC. Box 352, Villanova, PA 19085. Meets 3rd Thurs./monthly, 8:00 p.m., Radnor Mem. Libraray, Wayne, PA. Call Bob Haase, W3SA, (610) 293-1919. 147.06(+) WB3JOE PBBS 145.09. 1/97

Warminster Amateur Radio Club, WA3DFU. P.O. Box 113, Warminster, PA 18974. (215) 672-9985. Meets 1st Thurs./monthly, 7:30 p.m., Benjamin Wilson Sr. Cntr., Warminster, PA. Net on 147.69(-), 147.09(+), Wed. 8:30 p.m. and 28.450 Sun. 9 p.m. 5/97

RHODE ISLAND

South Coast Wireless Society. P.O. Box 1516, Westerly, RI 02891. Meets 4th Tue./monthly, 7:00 p.m., Pawcatuck Neighborhood Center. Info: Bill, KA1ZZR, (401) 596-5849. 6/97

TEXAS

Brazos Valley Amateur Radio Club, (B-VARC). P.O. Box 1630, Missouri City, TX 77459. Meets 2nd Thurs./monthly, 7:30 p.m., Sugar Land Community Ctr., 226 Matlage Way., 3 blks SW of Imperial Sugar Co. at HWY US-90A & Brooks St. (HWY 58) in Sugar Land, TX. Talk-in: 145.47(-), 442.5(+) rptrs. http://www.hal-pc.org/~bvarc 7/97

Brownsville ARC (CHARRO). Meets 2nd Tue./monthly, 7:00 p.m., Confederate Air Force Hangar, Brownsville Airport in TX. Talk-in on 147.040(+). 12/96

VIRGINIA

Southern Peninsula Amateur Radio Klub, (SPARK). Meets 1st Tue./monthly Salvation Army Community Bldg., Hampton, VA. Repeaters 146.73(-), 449.55(-). VE Exam Info: (804) 898-8031, W4RTZ. 2/97

Virginia Beach ARC. Meets 1st Thurs./monthly (except July), 7:30 p.m., St. Andrews United Methodist Church, Tucson & Princess Anne Rds., Virginia Beach, VA 23462. 2/97

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(-) rptr. Doors open at 9:30 a.m. 5/97

Skyvalley Amateur Radio Club, KC7LOC. Meets 3rd Sat./monthly, 8 a.m., Dutch Cup restaurant off Rt. 2 in Sultan, WA. Info: (360) 793-3433. 4/97

WEST VIRGINIA

Jackson County Amateur Radio Club. Meets 1st Thurs./monthly, 7:30 p.m., United Nat'l Bank of Ripley. Net Mon. 9 p.m. on 146.67(-) WD8JNU/R. For info: D. Tenant, N8ZYB, Rt. 1, Box 188, Mt. Alto, WV 25264. 6/97

Tri-State Amateur Radio Assn. Meets 3rd Tues./monthly, 7 p.m., The American Red Cross, 111 Veteran's Memorial Blvd., Huntington, WV. 5/97

On becoming a ham — and a Skywarn story

Len Helsing, KD4RZH
(E-mail: len.helsing@juno.com)

In 1992 I earned my "ticket" as a No-code Technician after having been a short wave listener for years. I am a totally disabled veteran from injuries which were incurred while serving in the U.S. Navy.

The residual effects from a fractured skull and subsequent coma had me convinced that I could never become an Amateur Radio operator, as I always hoped I could, so instead I enjoyed SWLing (short wave radio listening). Short-term memory loss is a condition that has been my worst enemy ever since. It has caused me loss of employment, and affected my self-esteem and belief in what I could accomplish in life. It is also the factor blocking my ability to remember all of the dahs and dits of Morse code well enough to pass the code exam in the required amount of time.

One day, my wife Margaret showed me an article in the local newspaper telling of the upcoming monthly meeting of the Tennessee Valley Amateur Radio Network (T.V.A.R.N.). When the day of the meeting arrived, I decided to stop vacillating and go. In looking back, I'm glad I did, for I left the meeting challenged to try for my "ticket." I discovered that it was now possible to earn a Technician license without having to take the Morse code portion of the test (I hadn't heard of its creation by the FCC in 1 January 1985). My only requirement would be to pass the Novice and Technician theory tests.

Realizing this, I no longer had to fear the Morse code exam. The T.V.A.R.N. was holding classes for those wanting to study for the FCC license exams and I was challenged to "go for it," so I began studying. I FINALLY passed it on my second try! Then what seemed like the longest period of my life began as I waited for my license to come in the mail. It took 6 weeks!

With my license in hand, I became an active member of the T.V.A.R.N., who's motto is: "Dedicated to the SERVICE of the American Red Cross of Tennessee." They help by having strategically located 2 meter and 440 MHz repeaters throughout the Tennessee Valley region for use in times of disaster. I joined with others who volunteer and have completed the SKYWARN Weather Spotter course with the National Weather Service (NWS).

Amateur Radio SKYWARN operations developed as an important part of community disaster-preparedness programs. SKYWARN is a plan sponsored by the National Weather Service to report and track destructive storms or abnormal weather. Accurate observations and rapid communications during extreme weather situations are vital to the NWS. Amateur Radio operators nationwide are a first-response group. Weather spotting is popular because the procedures are easy to learn and reports can be given from the relative safety and convenience of a home or an auto.

An actual situation arises

Thursday, 18 May, 1995, a tornado watch was broadcast for Sumner County and several other surrounding counties in the middle Tennessee area.

Inside our house, Margaret and I heard the wind outside building in speed and the tree limbs bending under its force. We decided to take the first step of self-preservation that is taught when threatening weather is approaching. I went to the power box to turn off all of the breakers, and then picked up Gretchen, our pet Dachshund, while Margaret located my dual-band hand held transceiver. We went into the small (5'x5') bathroom adjacent to the bedroom (a room that had structural stability from violent winds and without any windows). The handheld was already tuned to 162.55 MHz so I could monitor the weather situation. In just a few seconds, the wind became thunderous. Fortunately for us the storm passed quickly and the winds began to subside.

The telephone service and electricity were soon functioning again.

I contacted the Red Cross chapter office in Gallatin to report in and awaited instructions. There had been heavy damage in Sumner and Davidson Counties.

The Red Cross set up a command post, and Margaret and I were dispatched to do damage assessment as reports came in. I made a visual survey of buildings, making notes of what we observed on Red Cross forms for each damaged building.

We reported back to the command post to turn in the damage assessment reports. Margaret remained there helping with refreshments as victims of the disaster came, while I was sent to survey more reports of structural damage in the area.

The Red Cross Disaster Assessment Team makes a primary visual survey of the damage caused by ANY disasters, natural or man-made, or other situation that causes human suffering or creates human needs that the victims cannot alleviate without assistance. The end result was that I had helped my community — using my Amateur Radio license!

For information about the Courage HANDI-HAM System, contact:
Courage HANDI-HAM System
3915 Golden Valley Road
Golden Valley, MN 55422
(612) 520-0511
handiham@mtn.org
http://mtn.org/handiham **WR**

Computers & Basic Stuff

C.H. Stewart, KD5DL
P.O. Box 181
Duncan, OK 73534

BASIC Grid Finder

In last August's issue we explored the basics of determining geographic positions for places almost anywhere on the globe with relatively high degrees of accuracy. The way we did it was to first find something that had already been measured accurately, such as an FAA navigation aid or a charted airport, then determine the new position relative to it.

We took into account the conversion of statute miles to nautical miles in our measurements, because nautical miles are directly equivalent to measurements of arc, and we adjusted for the effects of the earth's curvature on our longitude calculations. By doing this we ended up with a positional accuracy of at least a tenth of a minute of arc.

Next we applied a 24-line BASIC program to determine the six-character Maidenhead Grid identifier for that location. If you do any kind of VHF-and-above work at all, then you know that the Maidenhead Grid is the defacto reference system for many of the contests and awards programs in that part of the spectrum.

This month we'll go a step beyond that initial program. Where the August column demonstrated how to determine a position's geographical reference coordinates, and how to convert the coordinates to the Maidenhead system, it was still a use-it-once-and-forget-it type of program. This time, however, the program is something you may want to keep on hand during contests to help determine antenna-aiming di-

```
10 CLS: PRINT "GRIDFIND.BAS, BY KD5DL 12/96"
20 PRINT: PI=3.141592654: R=180/PI
30 L1=XX.XXX: L2 = XXX.XXX: REM-YOUR COORDINATES GO HERE
40 DIM A(6), A$(6)
50 PRINT: INPUT " GRID ID"; B$
60 L = LEN(B$): IF L = 4 THEN 80
70 IF L < > 6 THEN PRINT "  ** CHECK INPUT **": GOTO 50
80 PRINT: FOR C = 1 TO L
90 A$(C) = MID$(B$,C,1): A(C) = ASC(A$(C)): NEXT C
100 D = 160 - 20 * (A(1) - ASC("A")) + (ASC("9") - A(3)) *
2 + 1
110 E = (A(2) - ASC("J")) * 10 + (A(4) - ASC("0"))
120 IF L = 4 THEN C=E+5: GOTO 150
130 D = D + ((ASC("L") - A(5)) * 5) / 60
140 C = E + (((A(6) - ASC("A")) * 2.5) + 1.25) / 60
150 E = (SIN(L1 / R) * SIN(C / R))  + (COS(L1 / R)  *
COS(C / R) * COS ((D - L2) / R))
160 E = 60 * (-ATN(E / SQR(1 - E * E)) + PI / 2) * R
170 T = E / 60: F = ((SIN(C / R) - (SIN(L1 / R) * COS(T /
R))) / (SIN(T / R) * COS(L1 / R)))
180 IF F > 1 THEN F = 1
190 IF F < -1 THEN F = -1
200 G = (-ATN(F / SQR (1 - F * F)) + PI / 2) * R
210 IF L2-D < 0 THEN G=360-G
220 IF L2-D > 180 THEN G=360-G
230 PRINT "HEADING=";INT(G);"DEGREES,  DIST=";INT(E *
1.15078);" STATUTE MILES"
240 PRINT: INPUT "DO ANOTHER";Y$: IF Y$ = "Y" THEN 50 ELSE
END
```

Figure 1.

rections and contact distances.

First a little background. I had originally thought to write the August program "backwards," so to speak, to convert from the Maidenhead system to geographic coordinates. It would be a relatively simple matter to use a long list of "IF...THEN" statements or DATA routines to get the job done.

Then I ran across a unique Maidenhead program written for Commodore-64 computers by Joseph Fleagle, WØFY. He developed the program in response to several articles in 1983 issues of *QST*, and had it published in the May, 1985 issue of QEX, the ARRL Experimenters' Exchange.

For this month's generic BASIC program I "borrowed" lines 40 through 140 from Fleagle's program, then added the remaining few lines to compute the direction and distance from your station to the center of the other station's grid square.

Type the information as shown in Figure 1.

Note that you need to put your station's coordinates into line 30; your latitude as L1 and your longitude as L2. Both are entered as decimal degrees. If you live in another part of the world, enter southern and eastern hemispheric coordinates as negative numbers.

As an example, in August's column J.Q. Hamm discovered his QTH was 39-degrees, 59.1 minutes North and 79-degrees, 59.3-minutes West. To convert these to L1 and L2 for line 30, simply divide the minutes by 60 and add to the degrees. In this case, line 30 could be entered as: 30 L1 = 39 + (59.1 / 60): L2 = 79 + (59.3 / 60)

Finally, make sure you use uppercase characters when you enter the Grid ID and when you answer the prompt to compute another problem at the end of the program.

The distance, by the way, is given as statute miles ("highway miles") between your station and the center of the input grid. If you omit the factor 1.15078 in line 210, the distance will be given instead in nautical miles or, if you so desire, changing the factor to 1.852 will give distances in kilometers.

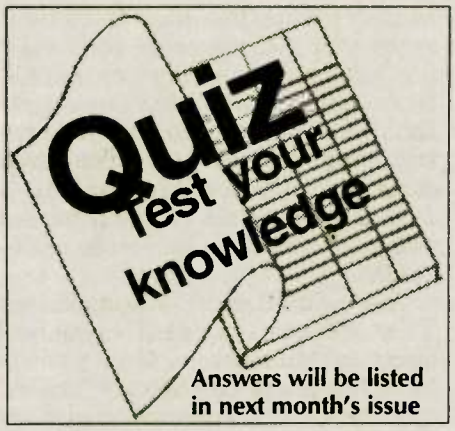
As a test, try using J.Q. Hamm's coordinates in line 30 (L1=39.985, L2=79.988333), and enter DN55CF as the target grid. The program should give a heading of 293 degrees and a distance of 1545 statute miles to the grid's center. Another trial, to FN30VC should result in a 86 degree antenna heading and a distance of 413 SM. If it doesn't, recheck your typing.

Now here's an update from October's column. As you may remember, the column featured a way to use spreadsheet programs instead of BASIC listings to calculate electronic formulas.

J.L. "Mac" McCoy, WØLQV, writes that he entered the SWR spreadsheet program, which was originally written in Excel, on Microsoft Word 4 software. He passes along that Word 4 formulas must be preceded with an equal (=) sign for them to work. He also says the "10" can be eliminated from the LOG statement.

Well, that's it for this month. By the time this issue is published Christmas will almost be here, and the New Year not far behind. As always, my family and I wish you the merriest of the holiday season and best wishes for the coming year.

Until we meet again in February, keep radio active. WR



The answers to last month's quiz questions 54-67 are as follows:

54. B; 55. A; 56. C; 57. D; 58. A; 59. B; 60. C; 61. B; 62. D; 63. B; 64. C; 65. A; 66. A; 67. C

68. What are the penalties for administering examinations for money or other considerations?

A. The VE's amateur station license may be suspended for a period not to exceed 3 months

B. The VE is subject to a monetary fine not to exceed $500 for each day the offense was committed

C. The VE will be restricted to administering only Novice Class license examinations

D. The VE's amateur station license may be revoked and the operator's license suspended

69. What is facsimile?

A. The transmission of characters by radioteletype that form a picture when printed

B. The transmission of still pictures by slow-scan television

C. The transmission of video by amateur television

D. The transmission of printed pictures for permanent display on paper

70. What is the modern standard scan rate for a facsimile picture transmitted by an amateur station?

A. The modern standard is 240 lines per minute

B. The modern standard is 50 lines per minute

C. The modern standard is 150 lines per second

D. The modern standard is 60 lines per second

71. What is the approximate transmission time for a facsimile picture transmitted by an amateur station?

A. Approximately 6 minutes per frame at 240 lpm

B. Approximately 3.3 minutes per frame at 240 lpm

C. Approximately 6 seconds per frame at 240 lpm

D. 1/60 second per frame at 240 lpm

72. What is the term for the transmission of printed pictures by radio?

A. Television
B. Facsimile
C. Xerography
D. ACSSB

73. In facsimile, how are variations in picture brightness and darkness converted into voltage variations?

A. With an LED
B. With a Hall-effect transistor
C. With a photodetector
D. With an optoisolator

74. What is slow-scan television?

A. The transmission of Baudot or ASCII signals by radio

B. The transmission of pictures for permanent display on paper

C. The transmission of moving pictures by radio

D. The transmission of still pictures by radio

75. What is the scan rate commonly used for amateur slow-scan television?

A. 20 lines per minute
B. 15 lines per second
C. 4 lines per minute
D. 240 lines per minute

76. How many lines are there in each frame of an amateur slow-scan television picture?

A. 30
B. 60
C. 120
D. 180

77. What is the audio frequency for black in an amateur slow-scan television picture?

A. 2300 Hz
B. 2000 Hz
C. 1500 Hz
D. 120 Hz

78. What is the audio frequency for white in an amateur slow-scan television picture?

A. 120 Hz
B. 1500 Hz
C. 2000 Hz
D. 2300 Hz

79. What is a sporadic-E condition?

A. Variations in E-layer height caused by sunspot variations

B. A brief increase in VHF signal levels from meteor trails at E-layer height

C. Patches of dense ionization at E-layer height

D. Partial tropospheric ducting at E-layer height

80. What is the propagation condition called where scattered patches of relatively dense ionization develop seasonally at E layer heights?

A. Auroral propagation
B. Ducting
C. Scatter
D. Sporadic-E

81. In what region of the world is sporadic-E most prevalent?

A. The equatorial regions
B. The arctic regions
C. The northern hemisphere
D. The polar regions

82. On which amateur frequency band is the extended-distance propagation effect of sporadic-E most often observed?

A. 2 meters
B. 6 meters
C. 20 meters
D. 160 meters

83. What appears to be the major cause of the sporadic-E condition?

A. Wind shear
B. Sunspots
C. Temp. invers.
D. Meteors

84. What is a selective fading effect?

A. A fading effect caused by small changes in beam heading at the receiving station

B. A fading effect caused by phase differences between radio wave components of the same transmission, as experienced at the receiving station

C. A fading effect caused by large changes in the height of the ionosphere, as experienced at the receiving station

D. A fading effect caused by time differences between the receiving and transmitting stations

85. What is the propagation effect called when phase differences between radio wave components of the same transmission are experienced at the recovery station?

A. Faraday rotation
B. Diversity reception
C. Selective fading
D. Phase shift

86. What is the major cause of selective fading?

A. Small changes in beam heading at the receiving station

B. Large changes in the height of the ionosphere, as experienced at the receiving station

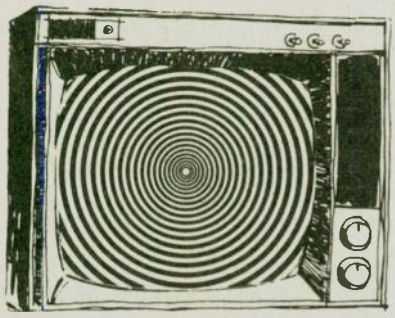
C. Time differences between the receiving and transmitting stations

D. Phase differences between radio wave components of the same transmission, as experienced at the receiving station

87. Which emission modes suffer the most from selective fading?

A. CW and SSB
B. FM and double sideband AM
C. SSB and AMTOR
D. SSTV and CW

Stay tuned next month for more Quiz questions and answers!



RFI & you

Jack Althouse, K6NY

Then and now

Long unshielded wires such as telephone wiring or power wiring in a building make good receive antennas. The telephone cable conducts the RF right down to your neighbor's telephone so he can hear your 20-meter transmission while he's trying to talk to his daughter in Miami. The power wiring takes the RF right into his TV set via its power cord blotting out the picture. Shielded cables are not immune. The cable TV coax shield can conduct your signal right into the TV.

Ferrite cores placed over these cables can prevent the RF from going into the telephone or the TV. What cores should be used? Years ago there were just two answers to this question: 1) Wind the cable around a long ferrite rod or 2) Wind the cable through a big toroid core as many times as possible.

These methods worked back then and they still work now but they have some drawbacks. If you wind the power cord through a toroid you have to take the plug off first or you need a toroid with a big enough hole to get the plug through. If you wind coax through a toroid or around a rod you quickly find that coax doesn't like to be wound in a tight circle. Also, with many turns on the core the inter-winding capacitance reduces effectiveness at the higher frequencies. And these big toroid and rod assemblies don't look too nice in your living room.

The big change in technology came about 16 years ago when computers started to enter the home. Like any fast digital device they generate RFI and they interfered with TV reception. As any Amateur Radio operator knows, TVI really upsets the neighbor who is trying to watch the "Big Game" or his favorite sitcom. The problem became so widespread that Congress got the word and put pressure on the FCC to do something. The result was the famous FCC order requiring all computers to pass RFI tests.

In many cases existing computers had to be RFI-proofed after they were built (and failed the test). The prospect of having every wire coming out of the computer coiled a number of times around a big toroid was not appealing to the computer makers. So new ferrite forms were developed that are more convenient to use, look better and work just as well.

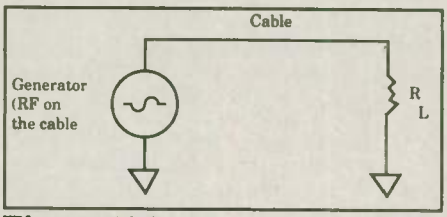


Figure 1(a)

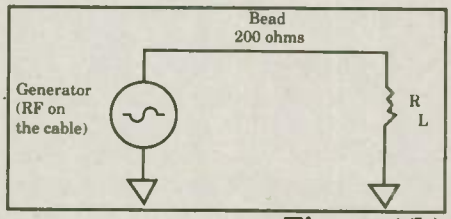


Figure 1(b)

The new shapes of particular interest in Amateur Radio RFI suppression are the large ferrite beads and the split beads.

You can think of the beads as small diameter but very long toroid cores. They come with ¼" hole to fit over RG-58 coax and ½" hole to fit over RG-8, RG-213, etc. The operating principle is that, since the cable goes through the bead only once (one turn) the bead is made longer (one inch instead of a toroid height of ¼") to get the same effectiveness. And if one bead isn't enough you can add more. The beads are useful to keep RF on the cable TV coax shield out of the TV and VCR. And they can be used on stereos and telephones; any cable whose plug will go through the hole. They come in Mix 77, a low frequency ferrite recommended for 160 and 80 meter RFI, and Mix 43, a ferrite particularly good for 20 Meters up through VHF.

The split beads look like beads cut in half with the edges polished so they fit tightly together when assembled. Actually they're molded this way and sold in pairs. Plastic snap covers are available to hold them together or you can use electrical tape to do the job. The beads come with ¼" hole (Palomar FSB-1/4), 1/25' hole (FSB-1/2) and for flat ribbon cable up to 2½" wide (FSB-21/2).

The ¼" split beads are useful for TV power cords, cable TV coax and other smaller cables that already have big plugs on the end. The ½" split beads fit over most computer cables that usually come with multi-pin plugs on the end. At present split beads come only in Mix 43 ferrite.

Frequently asked question

Q: How many beads do I have to put on the cable to stop the RFI? Ans: There is no stock answer to that question. Q: Why? Ans: Take a look at Figure 1(a). This is a schematic of the situation. The generator represents the RF voltage on the cable which is connected to RL, the telephone or the TV set receiving the interference.

In 1(b) we've put a bead over the cable; a bead that looks like 200 ohms to the RF signal. How much good does it do? That depends on the RF resistance of RL. If it is also 200 ohms at RF then we've cut the interference voltage in half (half is now across the 200 ohm bead and half across the telephone). That's a 6 dB improvement.

But suppose the telephone looks like 1 ohm at RF. Now almost all the voltage is across the bead and our RFI probably disappears. On the other hand if the telephone looks like 2,000 ohms at RF the bead won't do much good at all. What we do know is that, in most situations, a bead or two gets rid of, or at least reduces the interference. This means that most household electronic appliances have low RF resistance and the beads will work. So the best advice is to get a handful of beads and go right in there and try them!

One last caution: There are beads that suppress RFI (Mix 77 and Mix 43 beads mostly) and there are lots of beads and toroid cores out there that won't work at all because they were made for some other purpose. Don't start with some unknown bead or core. Get the right kind. Then you've got an excellent chance of solving your RFI problem. WR

YLs on the Air

Kay Eyman, WAØWOF
Rte. 2, Box 366 • Garnett, KS 66032

YL Meetings

After all the reports on YL meetings in my last column, you might think that subject would be exhausted. But there have been two large YL meetings since then and three more are being organized now.

The Japanese Ladies' Radio Society held their 39th annual meeting in Kochi, on 27 and 28 July, 1996. Eighty-four members gathered to enjoy the blue sky, ocean, and sunshine of southern Japan as they renewed friendships and conducted JLRS business.

At presstime, Raija Ulin, SMØHNV, and Elizabeth Anderson, VE7YL, were flying to Australia to attend the ALARA convention. I hope to have news of that meeting in the next column.

Cathy Hrischenko, VE3GJH, who is famous for organizing great events, is now finalizing plans for the CLARA '97 Gala Celebration, marking CLARA's 30th anniversary. The meeting will be held 26-28 September, 1997, in Aurora, Ontario, just north of Toronto, and Cathy has lined up a tour to the Fred Hammond Radio Museum, OM and XYL bagpipers, and a Ukranian dance group. Many of the U.S. YLs are planning to attend, as well as several DX YLs. I'll be glad to send you complete information on this meeting.

At the YL meeting in Berlin this June, a 1998 meeting on the West coast of the U.S. was discussed. Since YLRL will be holding the 60th anniversary convention on the West coast in 1999, three YLs from Norway have offered to host YLs from around the world in Svalbard, just 600 miles from the North Pole, on 20-24 August, 1998.

Unni Gran, LA6RHA; Turid Bjerke, LA9THA, and Ruth Tollefsen, LA6ZH, are organizing the Svalbard Polar YL '98 meeting in Longyearbyen, a town situated at 78 degrees north, on Spitzbergen, which is part of the group of Arctic islands called Svalbard. The meeting will be held at the Svalbard Polar Hotel, a modern conference hotel, with all facilities and excellent cuisine.

The program will include sightseeing trips with ample time for leisurely strolls and tax-free shopping. There will also be an opportunity to operate Amateur Radio from the station of the Svalbard Group of the Norwegian Radio Relay League, using the rare prefix JW. Besides the joy of being together with other YLs, while enjoying our fine mutual hobby, Unni, Turid, and Ruth promise you the unique experience of seeing wild, beautiful, unspoiled, and pure Arctic nature, not far from the North Pole, with daylight around the clock and moderate temperatures. I'll have more information for you in future columns or you can contact me now if you'd like more details.

DX YLs

Lesley Lewis, S92YL, and her husband Charles, S92SS, arrived in São Tomé in July, 1992. Along with them, as part of a Voice of America team, were Buddy Unglesbee and Glenn Britt. Both Buddy and Glenn were licensed and Glenn, S92ZM, is still there. Luis Beirrao, S92LB, is the only local operator in the country. In the past few years, there have been two additions to the amateur community, Antonio Gamito, S92BG, and Frederic Fernandes, S92JR, both from Portugal, who are there on temporary assignments.

You can find the S92 stations on all modes. Lesley works SSB; Charles works mainly CW; Luis is not on very often, but works SSB; Glenn and Frederic work only digital, and Antonio works mostly CW.

Lesley has not been operating on a regular basis because of the poor propagation lately, but she has been getting on fairly frequently in the evenings around 2000 UTC on the Butterfly Net on 14.226.5 MHz, or if she can find a clear spot, she calls CQ. When 17 Meters isn't too noisy, she also works that band, and for awhile she was getting on 20 Meters two or three mornings a week at 0800 UTC, where she worked hundreds of Europeans. She's hoping that conditions will improve so that she can operate without the terrible QRN that she's had.

Roser Gispert, EA3EOV

Lesley became interested in Amateur Radio when Charles was operating from Botswana as A22AA. He taught her the code and when they came to São Tomé, he encouraged her to learn the necessary technical information to pass the Novice test. Buddy and Glenn were eligible to give her the test in São Tomé ; she passed and in due course, received her license from the U.S. With the Novice license, she was able to get a local license, with full operating privileges, and she chose the call S92YL.

Since then, she has increased her code speed, studied for the General test, and passed it when they were on vacation in the U.S. in 1994. Her stateside call sign is N3TIA, although she hasn't used it yet. QSL information is Lesley Lewis, Box 522, São Tomé, DRSTP, West Africa, via Portugal. An SASE and IRC or $1 is always appreciated because they receive hundreds of QSL requests every week. Lesley suggests that the IRC or dollar bill should be

placed inside the return envelope so that it will not be visible if the outer envelope happens to get damaged.

Life on São Tomé would be very dull without Amateur Radio as there are no formal recreational activities. Lesley says she stays home and cleans house, and her other hobbies are quilting, sewing, cross stitch, painting and stamp collecting. On the surface, São Tomé looks like a tropical paradise, but life there is difficult for the locals, who survive by fishing and selling fruit and vegetables. Everything else is imported. There are no supermarkets and they get a lot of their food by mail order from the USA. One or two little shops import canned goods and meat, but of course, the prices are very high.

Lesley and the other S92 operators are looking forward to meeting all of you on the air before they leave São Tomé.

Roser Gispert, EA3EOV, is a professional artist, whose paintings are on display throughout Europe, as well as in Kuwait, Jordan, and Indonesia.

Ranveig Slaatsveen, LA3UHA, reads the Norwegian radio news broadcasts on 75 Meters for the Norwegian Radio Relay League. This past July, Walter Rickett, WA2AUF, who serves as a QSL manager for several European YLs, visited Ranveig in Helgoya.

Ranveig Slaatsveen, LA3UHA, (left) with visitor Yutaka, 7K1NWR.

Unni Grain, LA6RHA, is planning a trip to Viet-Nam during Christmas and New Year's Day, and is awaiting approval of her license to operate. She will be in Hanoi first and then travel south to Ho Chi Minh City. QSL to her *Callbook™* address.

Bergitta Astrom, SMØFIB, is now back home after her temporary assignment with the Swedish Embassy in Luanda, Angola. She operated as D2FIB and made over 1,900 contacts with 100 countries before being transferred to Zimbabwe, where she made 500 QSOs as Z21/SMØFIB. QSLs to her *Callbook™* address.

QSLs go to her *Callbook™* address.

Ruth Geering, IT9ESZ, operated for three days from San Marino, beginning 22 September. The weather was bad, with wind, rain, and fog, but she was able to work from a club station that was cosy and warm. For the first day and a half she was alone, but after that the local OMs came out to visit and to check that everything was all right, since the club station was located out in the countryside, with no houses nearby.

Unni, Bergitta, and Ruth are all planning to attend the Polar YL Meeting in Svalbard. How about you? WR

Richard Fisher, KI6SN
1940 Wetherly St., Riverside, CA 92506
e-mail: KI6SN@aol.com

If you're struggling to fill out a holiday QRP wish list, try these on for size:

The PVC Gusher II

Simple, lightweight, inexpensive, compact and efficient portable antennas are prized possessions of QRPers who like to combine backpacking and Amateur Radio.

Joe Everhart, N2CX, of Brooklawn, New Jersey, has packaged a dipole specifically for portable low power operation that fits the profile to a T — or inverted V, to be more precise.

He calls it the PVC Gusher II. Including its 30-foot coaxial feedline, this versatile antenna tips the scale at about a pound and comfortably slides into a zip-lock plastic bag for storage — perfect for the hiker.

At $20 postpaid, the semi-kit is a bargain even Santa would be hard pressed to duplicate.

What's in a name? The 'Gusher II uses PVC material with simple bolt-and-wingnut and screw-eye hardware at the center feed point, and small PVC-fashioned end insulators.

Everhart, an avid QRPer, chose an inverted V configuration for simple use in the field. It takes just one center support which can come compliments of a tree or lightweight portable mast.

"The antenna is intended for an operating power of 5 watts CW or 10 watts PEP SSB," Everhart writes. "However, similar designs were popular in the '60s among Novice class licensees with transmitter inputs of 75-watts."

The feedline is 30-feet of RG-122/U, "a high quality coaxial cable with 95 percent shield coverage" Everhart says, and is "approximately 30 percent smaller in diameter and 30 percent lighter than the common RG-58-type cables — important for backpacking use. It is considerably more rugged and its loss (less than 1 dB even at 10 M) is substantially less than the RG-174 often used for portable antennas."

The coax comes permanently and ruggedly molded into the center insulator. The "kit" part of the 'Gusher II requires the builder only to cut the elements for favorite operating frequencies.

The antenna itself is small diameter stranded and insulated wire. Each element has a ring-lug soldered to its end for simple attachment at the center insulator feedpoint. They are held in place at the inverted V's apex with small bolts using wingnuts. The elements can be easily interchanged with wires cut for other frequencies.

Small PVC end insulators are affixed to the non-feed end of each element. The antenna is easy to assemble and take apart on the trail — no tools needed.

The PVC Gusher II semi-kit comes with two 50-foot rolls of wire, so antennas can be cut for a variety of frequencies. A comprehensive 14-page instruction manual includes easy-to-understand steps for making a variety of configurations for 40, 30, 20, 17, 15, 12 and 10 Meters. Antenna length calculation formulas and standard lengths for popular QRP frequencies are listed.

There's also plenty of useful advice on how to best erect the PVC Gusher II and on how to get the best match for optimum results — a prime consideration for low power enthusiasts. Instructions for cutting single band, fan and leapfrog dipoles are included, as well as tips for DXing by configuring the Gusher II for low-angle radiation.

The semi-kit includes the pre-assembled center insulator and 30-foot feedline with pre-attached BNC transmitter connector, two 50-foot rolls of stranded antenna wire with ring lugs attached, 5 mini-alligator clips (for implementing multi-band operation), 7 PVC-fashioned end insulators, 5 additional ring lugs and a spare wing nut for the center insulator/feedpoint.

To order write: Joe Everhart, N2CX, 214 New Jersey Rd., Brooklawn, NJ 08030. Via e-mail: n2cx@voicenet.com

The White Mountain QRP SSB transceiver, pictured upper left, the PVC Gusher II portable antenna and the ARRL's new publication *QRP Power* could be on many QRPers' holiday wish lists.

White Mountain SSB QRP Transceiver kit

The White Mountain is a single-band SSB transceiver kit capable of 8 to 9 watts PEP output on either 75 or 20 Meters.

The circuit is laid out on a double-sided printed circuit board that measures 4.4-inches by 5.25 inches.

"Unlike some of the minimum parts count designs," the rig's well-known designer, Dave Benson,

NN1G, writes, "the White Mountain was designed conservatively for high performance. The receiver lineup features a low-gain J309 RF preamp, diode ring mixer and mixer post-amp.

"The remainder of the receiver chain is conventional and features an LM380 audio amplifier for plenty of audio punch. An AGC (automatic gain control) function is included. The transmitter chain also uses diode ring mixers for good inherent carrier suppression and RF stability."

Benson says that Small Wonder Labs currently has no plan to offer the White Mountain for bands other than 75 and 20 Meters, "although a small off-board heterodyne LO (local oscillator) would render operation anywhere in the HF spectrum a possibility."

The company's laboratory tests show a receiver MDS of –128 dBm (0.1 microvolts), 90 dB two-tone dynamic range, 70 dB image rejection, carrier suppression of –40 dB, transmit and receive crystal filters yielding 2.2 kHz bandwidth, an 8 MHz IF, and less than 300 Hz drift from cold start.

The White Mountain tunes about 150 kHz using a 10-turn potentiometer.

"The manual includes a 'build-and-checkout in stages' assembly approach to break the experience into evening-sized chunks," Benson says. He estimates assembly to take about 16 hours.

The White Mountain can be ordered as a board and board parts-only kit, or complete kit with off board controls, frequency counter and enclosure. The controls are interconnected using header strips and a wiring harness.

"The board dimensions allow it to slide directly into side rails on an optional enclosure kit," Benson says, featuring an "off-white extrusion enclosure measuring approximately 1.5-inches high, 5.6-inches wide, 5-inches deep. The matching front panel is silkscreened and both the front and rear panels are prepunched."

A Morse frequency counter provides the frequency read-out — similar to the popular Wilderness KC-1 displayless frequency counter. The builder provides the speaker-microphone. The Yaesu MHW-12AB, Icom M-54, MFJ-284 and Radio Shack speaker-mics all are suitable.

Each board kit (WM-20 for 20 Meters or WM-75 for 75 Meters including all on-board parts) is $100.

The WM enclosure kit, which includes the enclosure, off-board controls and PIC counter, is $60. Add $3 for shipping in the U.S., $10 DX. Connecticut residents add 6 percent sales tax.

The company's mailing address is: Small Wonder Labs, 80 East Robbins Ave., Newington, CT 06111. Via e-mail: bensondj@aol.com

For the bookshelf: *QRP Power*

If you have a photographic memory and have been a voracious reader of the popular periodicals *QST* and *QEX* for the last seven years, there's a good chance the ARRL's *QRP Power* will leave you with a sense of low power deja vu.

Many of us just don't have that depth of recall, or long term pocketbook-power, though. And that's what makes the League's newest QRP publication such a treasure.

"*QRP Power* is a transition from the QRP renaissance period into the 21st century" QRP veteran Rich Arland, K7YHA, writes in the book's preface, focusing on "current trends in the field of amateur low power communications."

It's a compilation of more than 25 top notch pieces appearing in print since 1990. For those of us who have spent hours on hands and knees digging through boxes of back issues for that certain great article, *QRP Power* takes the best work of some of the brightest authors and puts it into one handy 100+ page book.

As a bonus, Mitchell Lee, KB6FPW, and Dennis Monticelli, AE6C, teamed to write *Revisiting the 40-40* — 20-pages of never-before-published modifications, upgrades and operating observations on the popular "40-40" QRP transceiver kit developed by the QRP Club of New England (reviewed in ***Worldradio's*** QRP column in July 1994).

Compiled by the ARRL's Joel Kleinman, N1BKE, and Zack Lau, KH6CP/1, "QRP Power" is divided into six information-packed chapters: How Low Can You Go? (an explanation of QRP, its challenges and the joys of QRP contesting); Construction Practices (practical advice and data on homebrewing); Transceivers/Transmitters (presenting construction articles to satisfy both the rank beginner and grizzled bench veteran); Receivers (from a two-tube regenerative to a high performance single-signal direct conversion circuit); Accessories/Components (substituting parts, using test gear, crystal filter design, building a portable QRP hamshack, and more); and Resources (listing periodicals and publications of interest to QRPers).

Its list of contributors in many ways looks like a Who's Who of QRP. Among them: Wes Hayward, W7ZOI; Dave Benson, NN1G; Rick Campbell, KK7B; Zack Lau, KH6CP/1; Bruce S. Hale, KB1MW/7; David Newkirk, WJ1Z; L.B. Cebik, W4RNL; and Rich Arland, K7YHA.

We also hear from S.W. McLellan, ND3P; Robert S. Capon, WA3ULH; Roger Hayward, KA7EXM; James Craswell, WBØVNE; Tony Brock-Fisher, K1KP, Jacob Mahkinson, N6NWP; and Bill Jones, KD7S.

"Whether you're an old pro or a QRP newcomer," the book's back cover promises, *QRP Power* will provide what you need to get the most out of your low-power operating.

Priced at $12, *QRP Power* is available from The American Radio Relay League, 225 Main ST., Newing-ton, CT 06111. By phone: 860/594-0200; fax 860/594-0303. Via e-mail: lrardette@arrl.org

Contact the League's publications office for details on fees for shipping and handling. **WR**

Quarter Century Wireless Association, Inc.

John G. Troster, W6ISQ

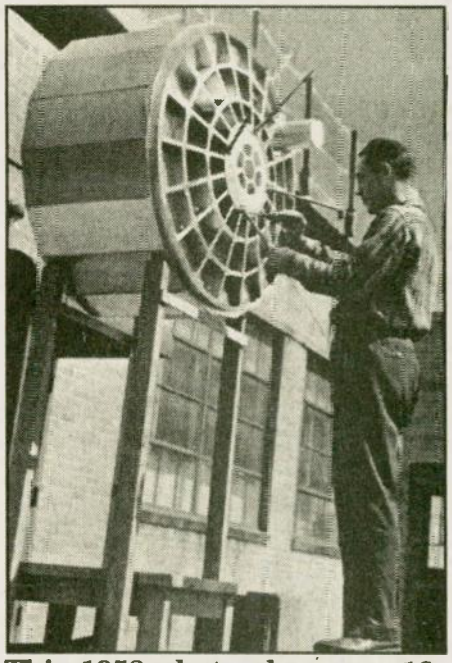
Ho Ho Ho season preview

If you have not already transmitted your Sassy Claws list to the North Pole, I beg you to add a short item saying "I want Cycle 23 to begin — and soon." These conditions on the HF bands are frustrating when one considers all those good higher HF bands going to waste with no exciting propagation. Of course, they aren't completely dead, but for practical purposes, it ain't no fun. I'll give you a tip about how to monitor those bands to get some inkling as to how propagation is developing — monitor the HF beacon frequencies! To wit, the Northern California DX Foundation and the International Amateur Radio Union's CW beacons transmitting on 14.100, 18.110, 21.150, 24.930 and 28.200. As of this writing, there are eight or nine beacons operating in the network with seven more to be added (we will probably have 14 operational before the end of the year). Each beacon transmits for 10 seconds. First its call, followed by four short dashes. The call and the first dash are sent at the 100 watt level, the second dash is at 10 watts, the third dash at 1 watt, and the fourth dash at .01 watt. These dashes show to what extent the path is open.

After each beacon completes its 14 MHz transmission, it automatically flips to 18.110 MHz and sends the same 10 second message. It then goes to 21.150 for another 10 seconds, and so on, until the cycle is completed. Countries now in operation (as of late September) are, in order of transmission: W6WX, KH6WO, ZS6DN, 4X4TU, OH2B, CS2B, LU4AA and YV5B. Beacons are built and ready for OA4B, VE8AT, ZL6B, and awaiting shipping instructions. Beacons for 5Z4B and 4S7B have been shipped and should be on the air by the time you read this. Listeners may also copy 4U1UN and JA2IGY which are on the air but still using an old one-minute format. We are still negotiating with Russia and China for locations. This beacon network is not new. It has operated on 14.1 MHz for more than 15 years, and in just the last two years has broadened its spectrum to cover five bands. There will be more about the International Beacon Project in radio publications in future months. This is a special first alert to all you QCWA boys and gals. Go ahead now, usher in the new Cycle 23 by checking your beacon frequencies and listening to them as they go around the world every three minutes!

Walter Maxwell, W2DU

If you're in QCWA, chances are you remember watching the exciting moment, live on TV, when the astronauts drove their lunar buggy down dale and up hill across the moon. When you see that moon buggy, you're seeing Walt Maxwell's contribution to the program. Precisely, an imposing, unforgettable object on that buggy (not counting the astronauts), the dish antenna mounted to the frame. That antenna, was designed and tested by one of our QCWA brethren, Walt, W2DU.



This 1958 photo shows an 18-sided full-scale spacecraft mockup of TIROS-1, the world's first weather satellite. W2DU is working on the four crossed-dipole transmitting antenna system.

Walt was born in Daytona Beach, Florida but grew up in Mount Pleasant, Michigan. He grew up building radios. At age three, Walt intently watched his father build radio sets for the family, and at age six, he built his own receiver without help from the OM. Then at age eight he began building shortwave receivers and listening to amateurs. When he was nine he was ready for his amateur license, but couldn't get to Detroit to take the exam. So, he had to wait until 1933 for an examiner to come to Mount Pleasant. He received W8KHK and has been licensed ever since.

Walt's first rig was a 210 Hartley transmitter and a 201A-201A receiver feeding a 40-meter center fed dipole. In succession, and with bigger and bigger rigs, he became a DXer for a few years, then a 160-meter phone enthusiast. In 1938 he received his Class A (phone) license and went to 75 and 20 phone with a 59 tri-tet oscillator - 807 - 35T - 250TH final and modulated by four

TZ40s. I mention this lineup with a bit of nostalgia because I had the same thing minus the modulators!

Walt played both trumpet and string base in various high school groups. His good musical ear and radio experience led, logically, to his later becoming an expert in outdoor sound systems, which skill he pursued while he was at Mount Pleasant College.

In early 1940, Walt passed the First Class Phone and the 2nd Class Telegraphy exams. This was good enough to get a job with Pan American Airways flying to South America. Aye, but there was a slight hitch. Enroute to Miami to work for PAA, he stopped off for a few days at Daytona to see friends. While he was there, he was introduced to the manager at radio station WMFJ, and was offered a job! He took it and went to work on the technical staff reading meters every half hour at the 250 watt station. He had another little chore: Copy CW Press Wireless News Service news of the world at 38 wpm, and then announce this news over the air. He left to join the FCC Radio Intelligence Division in late 1940 to design antenna systems for FCC monitoring purposes at Allegan, Michigan and Hawaii. Along the way he met his future wife Harriet, also working for the FCC and who had been the administrative aide to George Sterling of the FCC.

In Hawaii during WWII, Walt became involved in developing antenna systems to track lost aircraft. Air navigation systems then were not all greatly accurate and sometimes a plane would go astray. The DF systems used were not good on sky wave, so Walt worked on the design of long haul systems. By the way, this triangulation tracking idea came from Prose Walker, W4BW, (QCWA member) who later headed the Amateur Branch at the FCC. Walt estimates they saved over 1,000 lives by being able to bring lost planes back to Hickham Field.

In June 1944, Walt went into the Navy and was assigned as an instructor at the Radio Technical School at Corpus Christi, Texas. He taught trouble shooting and service techniques. After the war, he returned to Mount Pleasant, opened his own consulting business, and also became chief engineer of radio station WCEN which he built in 1948. At that point he put his 250TH back on the air and added an RME-69 and HRO. Walt was interviewed for a job with RCA in Princeton, New Jersey, by Clarence Tuska. You may recall that Tuska was Hiram Percy Maxim's partner in starting ARRL. He took the job and in 1949, moved to Princeton where he worked for RCA until his retirement in 1980.

Walt began as a radio engineer in 1949, then joined the newly established Astro-Electronics Division which sought government contracts to develop satellites. Walt became the person in charge of antenna design and testing and began work on a spy satellite. That contract was canceled by Congress, but the government weather service heard about satellites and asked RCA to develop a satellite that could see clouds from above rather than below. This put Walt off and running with the new satellite antenna business. In 1960 he was put in charge of Astro's Space Center Antenna Laboratory and Test Range which position he held until he retired. He developed more than 30 earth-orbiting antennas for use on various satellites including ECHO and all early TIROS-M and TIROS-N for RCA's SATCOM communications satellites. He also worked on the Search and Rescue (SAR) systems flying on the TIROS-N which are used worldwide for emergency locator transmitters aboard aircraft.

That little 28-inch gold plated moon buggy antenna dish Walt developed with two others, and then did all the testing. At his new home in Princeton, Walt went on the air with his old 250TH rig driven by surplus ARC-5s and the old faithful 4-TZ40s modulator. Nowadays, however, he uses a TS-830 or TS-530 to drive a pair of 4-400s built by his son, Rick, WB4GNR 20 years ago. Hamming really took in this family. Not just son Rick who's a Hewlett Packard engineer in Atlanta. Son Bill, AG2B, is a VHF/UHF communications engineer for the State of Florida. Son John is an environmental scientist in New Jersey and twin sister Sue, KA9AJC, teaches elementary school also in New Jersey and her husband is Keith, WD9JCA.

Making it a three generation sweep of hams, Walt's father was W8YNG. Walt's been a widower for 10 years, but has been as active as possible. He's still playing bass in an 18 piece Glenn Miller style professional band. He also plays in a small volunteer string group which entertains at nursing homes.

Just as a sideline, Walt has assumed the responsibility for being frequency coordinator and data base manager for 964 repeaters in the State of Florida, that's second only to California in the number of repeaters. Greater love hath no man for Amateur Radio than one who takes on the job of trying to coordinate 964 repeaters! This little chore totes up a $250 per month phone bill for him, plus law suits, but he says he's happy because he's learning to be an arbiter. Folks, this is a enormous job being done by generous and unselfish guy.

Walt wrote a series of articles for *QST* from 1973-1979. They were entitled "Another Look at Reflections" and they formed the first seven chapters of his book, *Reflections, Transmission Lines and Antennas*. He also developed the W2DU Ferrite Bead Balun which he wrote about in March, 1983 *QST* and also in his book.

We are proud and honored to call Walt Maxwell, W2DU, One Of Us, the Proud, the Elite, the Dedicated, the Many, the QCWA.

Until the next one, 73 + 25, Jack, W6ISQ WR

PBS Virus: Stops your PC every few minutes to ask for money. —ARNS *Bulletin,* Alliance, OH

10-10 INTERNATIONAL News

Chuck Imsande, W6YLJ
10-10 19636

10-10 National Convention

The 10-10 1997 National Convention dates have been set and the location selected. The dates are 10-13 July, 1997, and the place is Council Bluffs, Iowa. Council Bluffs was chosen by the Board for a number of reasons and plans are under way to make this the best 10-10 convention ever. The convention is being dedicated to all 10-10 volunteer managers, and it is hoped that most of these will be in attendance to be honored for their dedication. The schedule of forums is almost full and several ladies' activities are in the detail planning stage. A full schedule of activities, including some very interesting forums, chapter tables, a super hospitality suite, and ladies' activities and a gala banquet with the famous auctioneer, Col. J. Ed Redline, K5ERJ, in charge of the after-banquet entertainment.

Pre-registration will begin 1 January, 1997. A complete convention registration package is available from Tom Henderson, K4CIH #33233, at 4901 15th Place East, Tuscaloosa, AL 35404-4522. Pre-registration prize will again be one of the popular new transceivers. Send for your pre-registration package and be one of the first to register.

10-10 Internet update

The 10-10 Internet continues to grow, with more and more 10-10 chapters coming on-line. At this writing, there are over 20 chapters with their own home page making their chapter information available to all members and non-members alike.

The e-mail subscription list continues to grow, both in numbers of subscribers and in uses. Band openings have been regularly mentioned in real time to help members grab a few QSOs. The uses are endless. To subscribe, send a message to LISTSERV@LEHIGH.EDU with no subject (or only a single letter if your system demands a subject) and this text:

SUBSCRIBE TENTEN-L<first name> <lastname><call>.

If you change servers, please be sure to UNSUBSCRIBE via your old server before it dies and then SUBSCRIBE anew from your new server. Remember there is no charge for the use of the 10-10 Internet service courtesy of our congenial Lehigh University host, Jim Eshleman, N3VXI.

New volunteers take over

Area 6 District Manager Dick Rouscher, W6ANK #1931, has found it necessary, for the immediate future, to surrender his Area 6 District Manager's responsibility due to health problems. Dick has been a hard working 10-10 volunteer since 1972. We thank Dick for his 24-plus years of service to 10-10 and wish him well with his problems so he can again return to serving 10-10 as a volunteer. All Area 6 new member applications should be sent to 10-10 International Net, Inc. 643 N. 98th Street #142, Omaha, NE 68114-2332, for processing until further notice.

Countries Award Manager Tom Henderson, K4CIH #33233, who has been acting in this position on an interim basis, has turned over all records to our new Countries Award Manager, Russ Gauthier, N5EJS #1525. Russ is up and running with a new computer program to process and maintain the Countries Award records. Send your applications to Russ Gauthier, 8816 HWY 165, Pollack, LA 71467.

Worked all States Award Managership has been transferred from Susan, KA1CAD #29600, to Scott, AI1M #23966, in the Brackeen family. Scott has taken over from Susan and 10-10 is fortunate to keep the Brackeen family as 10-10 volunteers. Send your Worked all

States Awards to Scott Brackeen, AI1M #23966, at 93 CR3271, Booneville, MS 37055-4230.

OM/YL Award Manager Elaine Nickoloff, N8CBE #30409, and OM Alex, N8BEL #27438, have decided to do some extensive traveling and therefore, she will not be able to continue in her position as OM/YL Award Manager. We thank Elaine for her many years of volunteer service to 10-10. Stepping in for Elaine is Pat Hibbs, KH6OE #28842. Send all OM/YL award applications to Pat at 4603 Glenna Way, Louisville, KY 40219-2814.

New directors take office

Effective 1 January 1997, five newly elected 10-10 Directors will take office for a four-year term. Joe Williams, WA9TSG #310, currently a Director, was re-elected to another four-year term. Joe has served the last four years as a director and previously was Editor of the *10-10 International News*. The four new directors are: Garry Cameron, VE7ACM #30939 of Port Alberni, BC, Canada. Gary has served 10-10 in scoring 10-10 contests in the past.

Michael (Mike) Elliott, KF7ZQ # 54625, of Boise, Idaho. Mike has served 10-10 for several years as the Information Manager. Richard (Dick) E. Russell, KJ5VV #62500, of Midwest City, OK. Dick has been active in 10-10 activities for many years. Thomas (Tom) Michaelson, KFØZJ #55241. Tom is the Chapter Manager of the 10-10 Platte River Chapter.

The following four directors will be retiring as of 31 December 1996. L.B. Cebik, W4RNL #41159, John Ellison, WØERZ #5145, Dave McCardell, WD4EWB #18760, and Jack Miller, W9WYN #6894. We thank these four directors who have given 10-10 many, many hours of volunteer time during their terms of office.

W6OI on the air

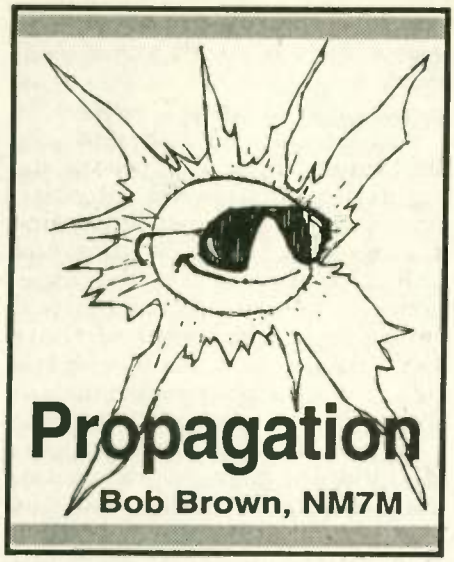
The 10-10 Club Station, W6OI, #109, is on the air each Wednesday at 1800Z as the 10-10 Net Station on 28.800MHz. Net control for the Wednesday 28.800 net is Louise Chapman, N6ELK #36654. For a W6OI QSL card, send a SASE along with your card to N6ELK, 3210 Clark Ave., Long Beach, CA 90808.

Remember the 10-10 Net meets every day except Sunday, on both 28.380 MHz and on 28.800 MHz, at 1800Z. 10-10 Net Control Stations are located in various parts of the country, so contact with the net is possible based on band conditions. If you are interested in obtaining your 10-10 number, check into the net (based on band conditions) and you will make your 10 contacts required for membership in a short time.

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 $1.00 plus 2 first class stamps and an address label for the return of your information package to: Mike Elliott, KF7ZQ #54625, 10-10 Information Manager, 9832 Gurdon Court, Boise, ID 83704-4080. No SASE please, as the information package requires a 9 x 12 envelope. You will receive a copy of the 8 page *Prospective New Member Brochure* which contains everything 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 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 plus $10 dues to Mike. Remember 10-10 numbers are issued for life and your originally issued number is always yours. WR



In my younger days, there were three things that I didn't argue with: Railroad trains at a crossing, high voltage and statisticians. Now that I'm older and more experienced, perhaps even wiser, I still respect railroad trains and high voltage but I question statisticians.

If you wonder why, let's go to what the dictionary gives for the job description of a statistician: "A mathematician specializing in statistics." In order to understand that we have to take another step backwards and see how statistics is defined: "The mathematics of the collection, organization and interpretation of numerical data."

Okay, now we're down to the "nuts and bolts" level and as one who knows some mathematics, I think I can at least understand something of how numerical data might be collected or organized and I'm not afraid to ask questions, particularly about interpretation. True, some of the discussions of probability can get a bit on the "heavy" side but I'm not afraid to wade in and get my feet wet in trying to understand what's going on.

Now the field of HF propagation has its own statistical side, sunspot numbers, critical frequencies and the like. Sunspot numbers, of course, are used by astronomers in connection with the solar cycle and by radio scientists in predicting critical frequencies for any occasion. The raw numerical data for those studies comes from solar observatories, daily sunspot counts. Right at the start, there are uncertainties — counting spots, large and small, and deciding when something is big enough to count as a group, equivalent to ten spots.

Once the daily values are settled, they are collected day by day and then used to obtain the monthly average. The daily values are all integers; after all who ever counted half a spot on a given day? But once the averaging process begins, decimal fractions are part of the scene, say an average of 49.8 spots for the month of June 1993.

But if you look at monthly averages back in '93, they did wander around as solar activity varied: starting at 59.3 in January '93, peaking at 91.0 in February '93, hitting a low of 35.9 in November '93 and closing out the year at 48.9 in December '93. See what I mean?

And speaking of "final words," I want to make this occasion my final words in this column.

As you well know, solar cycles are about 11 years in length and if viewed in terms of monthly averages, they'd look pretty ragged. So the astronomers hit on the idea of "smoothing" the data. That involves using 13 months of data, six months on either side of the month in question. The sunspot counts for the first and last of those 13 months are averaged and then added to the other 11 months of data and then divided by 12 to get the 13-month smoothed sunspot number that you hear about.

So far, everything that I've mentioned is simple enough, mostly just matters of definition. It's when we get to making predictions off into the future that things change and questions come up at once. Now the least controversial sort of prediction is "more of the same," something that I discussed here back in February '94. In the most elementary terms, the idea is that the sunspot number changes in some unknown way and we try to use what we know now to make an extrapolation into the future.

Now "what we know now" can be boiled down to three things: The present sunspot number, the present slope of the SSN curve and whether the slope is increasing, constant or decreasing month by month. If we put faith in this approach, it means that one is not anticipating any "solar surprises" and the SSN curve behaves in an orderly, continuous manner. So if we know the situation at month # M1, a reasonable estimate of the SSN at month # M2 is given by a short sum:

$$SSN(M2) = SSN(M1) + (SLOPE)x(M2-M1) + (1/2)x(CURVATURE)x(M2-M1)x(M2-M1)$$

where SLOPE is how fast the SSN changes per month and CURVATURE is how fast the SLOPE is changing per month, both at month # M1. If the SSN curve is convex upward, then CURVATURE is positive while if concave downward, then its sign changes to negative. That wasn't too bad, the first two terms being nothing but a straight-line extrapolation for (M2-M1) months and the third term puts in the effect of curvature.

If you look at the accumulated records of solar cycles in the past, you can see that the slope and curvature change quite a bit in the course of a cycle so the above approach is only good in the short term, say a few months. But if you look at the Weekly Boulder Report from NOAA, you'll see a prediction for a good part of Cycle 23, from the minimum predicted for 1996 to past the peak around year 2000. How do they do that? Maybe it's just "more of the same" but in a larger context.

You could try your hand at predicting the next cycle by looking at the range of sunspot counts in the past 22 cycles (49 to 201), time- profiles (9.0 years to 13.7 years in length) and their averages. If you do that and look at the present prediction from NOAA, you'll see they're talking about an average, garden-variety event for Cycle 23, a SSN of 108 early in year 2000, just sort of affair that you'd predict

if you looked at the data. But NOAA is one ahead of you, putting in a 90% prediction interval. How do they do that?

Let me show you how that's done but in another context that's of interest to you, critical frequencies of the ionosphere. There, as a DXer, you know that the MUF for a path really speaks to the frequency that gives a mode availability of 50%. But a path can be long and complicated so let's limit ourselves to something simple, the critical frequency of the F-region overhead. That frequency, foF2, is the basic sort of data that MUFs are derived from so if you see how a confidence interval is found for it, you'll see at once how it applies to a path.

In talking to this point, I'll be using some material in a neat book, *Radio Amateurs Guide to the Ionosphere* by Dr. Leo McNamara. He's from Australia and gives some foF2 data that was obtained over Canberra during the month of December back in 1980. More specifically, he shows a plot of 744 foF2 data points, measurements of foF2 for each of the 31 days and the 24 hours in each day.

His plot shows one curve, the median, that you'd recognize at once. It's simply the curve which connects median foF2 values for each hour, i.e., foF2 values with 15 other observations having a higher foF2 at that hour and 15 lower. If one looks at the data for 0200 UTC, it's found that values of foF2 ranged from 2.9 MHz to 8.9 MHz during the month. But the 7.9 MHz data point in the list of 31 had 15 data points with higher values and 15 with lower values of foF2.

That makes it the median of the observations for that hour, the one with as many points lying above as below it or the one with 50% availability. Now there are two other curves, the upper decile and lower decile curves, which may not be as familiar to you as the one for the median. Those curves connect the points which have three data points lying above or below them and for 0200 UTC, the upper and lower decile values are 8.7 MHz and 6.8 MHz, respectively. Since 3 data points represent 10% of the data for any hour in the month, you can see that 80% of all the data points lie between the upper and lower decile curves. Except for being 80% instead of 90%, that's the idea behind the projected sunspot cycle, defining a region where the chance is 90% that the SSN data points will lie in the next solar cycle.

Going back to the foF2 data, those 31 observations could be summarized very simply by saying that the median value for foF2 over Canberra at 0200 UTC was 7.9 MHz and the upper and lower decile values were 8.7 MHz and 6.8 MHz, respectively. When taken over to an oblique propagation, that means there are lower and upper decile frequencies as well as a median MUF for a DX path.

Thus, by operating at the lower decile frequency, the path probably will be open at least 90% of the days in a month at that hour. In contrast to that, if one operates at the upper decile frequency, termed the HPF (highest possible frequency) chances are the path would be open only 10% of the days in a month at that hour. The median MUF, clearly, has an availability of 50% and it's the figure quoted most often in propagation work. But you'll see all three curves for a number of paths in *QST* each month.

Another frequency, FOT (French initials for the optimum working frequency), is taken as 85% of the median MUF and would appear to be a safe frequency to operate on in terms of reliability of the path. But being lower in frequency than the MUF, it will be subject to greater ionospheric absorption during daytime hours. Also, during daytime, it would involve a greater level of noise. If that wasn't bad enough, propagation modes of higher complexity, say 3F as well as 2F, may be possible and that raises the possibility of multi-pathing, something less than desireable for digital modes of operation. The best strategy is to check it out, whether one of our bands is around there.

Back in July '93 I showed how foF2 values varied with season, using as an example the situation over Boulder, CO where the value was about 6.3 MHz in June and 10.8 MHz in December. Now experience shows that there's a seasonal variation in the range of those decile values, from about +/-8% of foF2 in the summer to as much as +/-25% in the winter. Now, again from your DXing, you know that MUFs are higher in the winter; that's the "good news." But the "bad news" is that the variability in propagation will be greater, as just indicated.

All that says there are seasonal changes in propagation but given the variability, you'd do well to listen to what the statisticians say about critical frequencies. Not that you can't question them; just look hard at what they predict and listen hard for what the bands are telling you. After all, that's the final word.

And speaking of "final words," I want to make this occasion my final words in this column. So I am going to give my word processor a rest, let my number-cruncher cool off and get ready for the next solar cycle. After all, I was born around the minimum between Cycles 15 and 16 and here it is the minimum between Cycles 22 and 23. If you think about it, seven solar cycles is quite a stint in this world so I'm going to retire for the second time and let a younger person take over. But in doing that, I will take the occasion to make a final pre-emptive strike, declaring that Cycle 22 is over and Cycle 23 is about to begin. Don't bother me with minor details, like others have essentially said the same thing. Take it from me, the new cycle is going to start now. Get out there on the HF bands and work a pile of DX for me. If you've enjoyed my column, drop me a note or a postcard some time, telling me about your DXing; I'd like to hear from you. Better yet, how about making a contribution to the Courage HANDI-HAM System? They're a good cause and need your support. Tell them Bob, NM7M, sent you. 73 SK . WR

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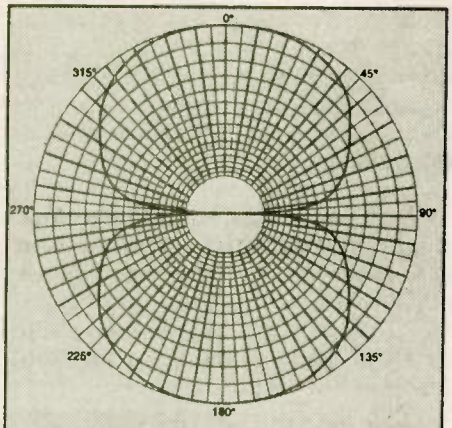


AERIALS

Kurt N. Sterba

Odd. Quite odd indeed. An instrument which would be of great value to any radio amateur is practically "off the scope" as far as most are concerned.

I'm talking about the Field Strength Meter (FSM). Now, I have been witness to real antenna arguments. Amateurs on both sides of the argument pull out their Kraus and Maxwell texts to prove they are right, even though their positions are 180 degrees from each other.

Enter now the final arbiter, the truth teller: the Field Strength Meter. With this piece of equipment there are no ifs, ands or buts. Either the signal voltage went up or it went down or stayed the same. One can argue all he wants, pull out every book he wants and give his own interpretation to what it says, but, like "The Shadow," the Field Strength Meter knows. The arguments are over.

Thankfully, Palomar Engineers has just come out with an FSM. Serious antenna experimenters know Palomar mainly for their Noise Bridge but the company also has SWR/Power meters, Baluns, and a slew of other quality products. (Palomar Engineers, P.O. Box 462222, Escondido, CA 92046; 619/747-3343; fax: 619/747-3346, e-mail 75353.2175@compuserve.com is the way to reach K6NY, Jack Althouse.

The age-old argument about what antenna tuners do or don't do is answered for all time in just a few moments. Field patterns of rotating antennas can be plotted. The effect of radials — more or fewer, longer or shorter, number of groundplane elements or whatever can be observed. Every RF radiation question is solvable. If you can ask it, the FSM (a good one) can answer it.

If the FSM is not at the tip of the tongue, or at least on the workbench, of every amateur, it may be due to the paucity (up to now) of proper units. Some amateurs would build the old classic 1N34 diode unit. So we had a non-linear circuit being fed into a hamfest-purchased 1944-era meter. Fun, but science it's not.

Science is measuring — accurately. Most hams rely on an SWR meter or power meter to tell them what's going on. Such instruments can be fooled. The FSM is the only one that tells you what is goin' thataway.

The Palomar unit costs $195. While that might dissuade some from purchasing it, I suggest that a couple of ham buddies go in together on one, or that radio clubs buy them and check them out to their members.

There are some very professional features to this FSM which covers 1.8 to 150 MHz. It has a highly accurate 30 dB step attenuator with 5 dB steps. In the commercial world, antenna gain measurements are done by switching in and out attenuators. (More on that in an upcoming article devoted to antenna gain [real] measurements). The Palomar Engineers FSM has, to help the sensitivity, a 25-dB RF amplifier (make measurements a half-mile from the transmitter). There is a five-position bandswitch and a variable tuned circuit adjusted to your transmitter frequency. That prevents other signals from interfering with the readings.

The detector is linear over a nearly 30 dB range. (For newcomers, 30 dB is the difference between 1,000W and 1W). When it gets to its limits, the correction chart so thoughtfully furnished can be referred to. This is a serious machine!

There is a gain control so reference levels can be set. The meter is readable to .1 dB. The preferred power supply is 12V but a 9V battery can power it at reduced sensitivity. Thus it can be taken out in the field for far field measurements. Antenna input is a SO-239 connector. Most amateurs are familiar with the "double power/3 dB" equation but there are those who are less facile with the voltage ratios. Palomar furnishes a scale with the instructions.

Meter Reading	dB	Meter Reading	dB
1.00	0	.50	-6
.89	-1	.45	-7
.79	-2	.40	-8
.70	-3	.35	-9
.63	-4	.32	-10
.56	-5		

There are those who say the ½-wave vertical has a stronger signal than the J-Pole. Now that argument can be settled. Some say a ½-wave vertical has 3dB gain over a ¼-wave. Others say it is 1.8 dB. who is right? YOU are, after YOU have measured it to your satisfaction.

Mention should be made here of the Inverse Square Law. That is, from where you make a measurement, doubling the distance will results in a voltage drop of 6 dB. Every time you double the distance there will be another 6 dB drop. In actuality, that law does hold up well if you are aiming at the moon. Over real ground there will be further losses.

Allow me to digress for a moment. Recently I did an article about the 2:1 rectangular loop with 50-ohm feed. One amateur put it into his computer and came to the conclu-

sion that the loop formula (1005/F in MHz) used all these years was wrong and that my loop (despite my giving more documentation than you will read in most antenna articles) was actually resonant about 1 MHz off.

Instead, I advocate building REAL antennas, putting REAL watts into them and measuring the REAL results.

What might be one great virtue of this Palomar meter would come about if the various mobile shoot-out groups around the country would adopt this meter as their standard and then agree on a reference receiving antenna. This would make the results translatable across the country. Yes, there would be some site differences if the measuring crew were wearing their big cowboy belt buckles or one ham with a lot of gold fillings was smiling, etc.

Of the many uses this meter could be put to are: modeling (real) antennas at 144 MHz prior to building larger versions for the HF bands; in putting up a new antenna, (with careful placement of the meter and notations of settings and readings) later readings would reveal if, over time, there was signal degradation (attenuation); and a visual check if the right antenna was on the right band.

So much for theory. Here are some tests I have actually made with the new Palomar FSM. It was compared with three other meters, the first two were homebrew and the third was a commercially made unit.

With a 50W Bird Slug

Watts	FSM1	FSM2	FSM3	Palomar
02	1	0.3	.03	.05
08	2	1.5	.14	.1
32	8	2.87	.46	.2

With a 250W Bird Slug

Watts	FSM1	FSM2	FSM3	Palomar
50	14	16.9	0.63	.25
200	47	59.4	1.75	.50

With a 1,000W Bird Slug, scale and pads changed

Watts	FSM1	FSM2	FSM3	Palomar
250	45	56.3	2.84	.1
1000	74	92.9	4.98	.2

The true voltage increase as shown by the FSM is a doubling of field strength voltages with four times the power. As can be seen from the above recordings on other meters, they are all quite misleading, but the Palomar is very accurate.

This is a device for serious antenna work. With the addition of a tuned preamp, the antenna range distance could be extended even further.

A bit of warning for those just getting into transmitted RF measurements. It is filled with ambiguities. Signals do funny things. Strive for results that are repeatable. And, keep a watchful eye out for when the metal-sided, signal-reflecting Good Humor ice cream truck is driving by.

(The masked Krusader, Kaptain Kurt will return next month with a new and novel antenna.) **WR**

The missing Q signals

John Queen, KAØSEY

Some Q signals have never made it to the ARRL's official list. Yet you may agree, after reviewing those listed here, that at least a few of these would be useful. As with the regular Q signals, each can be a statement or a question, depending on whether a question mark follows it.

QLF: I'm sending with my left foot."

"Are you sending with your left foot?

QRC: "Warning, rag chewer on frequency."

"Are you a rag chewer?"

QOK: "Your last transmission was okie dokie."

"Was my last transmission okay?"

QFH: "This frequency is mine. Go elsewhere."

"Is this frequency hogged?"

QBS: "It's getting deep here."

"Did I tell you about the one that got away?"

QZZ: "I fell asleep on an open mike."

"Is that just 60-hertz hum, or are you snoring?"

QBA: "My antenna is big."

"How big is your antenna?"

QHI: "I'm jumping in quick to say 'hi,' then going QRT."

"Are you leaving after just one transmission?"

QBO: "Don't sit next to that guy in the meeting."

"Buddy, can you spare some soap?"

QCQ: "Calling CQ in Q signals.

"Is there any end to this insanity?"

QCW: "I'm going to whistle Morse on FM (or SSB)."

"Why are you whistling Morse?"

QET: "Phone home."

"Has anyone called me from another planet?"

QGE: "I bring good things to life (to the party)."

"What good things do you bring to parties?"

Contest Corner

Don Durk, KA1DWX
76226.1414@compuserve.com

Top Band time!

If you are in the Northern Hemisphere, now is the time for low band DXing! Whether it's 160 Meters, 80 Meters or both — this is the time. The low solar indices actually seem to help 160 and to a lesser extent 80! If you're experienced on these bands you know the ropes. For those of you with fewer notches on your 6-band DXCC belt, get on the band and talk with some of the old pros.

For starters, simple antennas at modest heights (of course, the higher the better!) will get you to the "near" in DX, especially at propagation peaks surrounding sunrise and sunset at the DX end of the path. If you have a bit more room, try a double extended zepp for a bit more gain or a modest long wire! For those who are ambitious, you can plan separate receiving and transmitting antennas. Verticals, whether short, long, T- or L-shaped, etc., work well for transmitting. For receiving, these antennas often are not as quiet as needed, so you may want to use a dipole or a loop for receiving. Wouldn't a long beverage antenna be nice?

What is your favorite contest? Do you have a particular type of contest you prefer? Most folks are casual contesters. What do you try to do for an hour or two in a contest, during a contest weekend?

Contest results for most of the international contests are available and usually are sent directly to the entrants within 8 to 12 months. It is helpful to enclose an address label with your entry to facilitate handling.

Most contests require separate logs per band, check sheets for over 200 Qs, a summary sheet and a signed and dated affidavit attesting to observance of the rules of both the contest and your local regulating authority. A statement wherein you agree to be bound by the decisions of the contest committee is also needed. Electronic log submissions are often accepted provided the format is as specified. Usually ASCII or CT.Bin files are okay. All times are in UTC.

Late November 'tests

(see November ***Worldradio*** for details)

***CQ WW CW**

23 November 00:00 - 25 November 24:00

(RST +CQ ZONE)

Q 1x/ band. 1.8- 28 MHz. (Not WARC bands). You must sign portable if your call sign indicates a different zone or country than actual. Single ops need 12 hrs. or more for awards; multis need 24. Ten minute rule and antenna details-Ck rules! Score-pts (diff continent 3 pts; own country 0 pts, but ok for mult; NA other NA countries 2 pts; Non NA stns — same continent but different country 1 pt) x mults (ea CQ zone+ea DXCC country/WAE country per band)/ mm=zone mult only. Single op all-band, or single band. A1-single op high-no DX alerting assistance. A2-single op low-not> 100W out. A3-single op QRP-not> 5W out. A4-single op assisted. Multi op — all band only. B1-multi op 1 tx- 1 tx on 1 band during any 10 minute period, except that during this 10 minute period 1 and only 1 other band may be used if the station worked is a new mult. B2- multi xmtr-1 signal and running station per band. Team- any 5 ops in the single op category. You may be on only 1 team per mode. You may be on entirely different SSB/CW teams. Competing on a team does not prevent you from submitting your score for a club. A list of the team's members must be received by *CQ* prior to the contest's start. FAX to *CQ*, Att: Team Contest, 516 /681-2926. Club — at least 3 logs and club officer must report list of participants and scores. For awards, single op must have minimum of 12 hours on; multi must have minimum of 24. Trophies, plaques and certs. Ck sheet for each band w/ 200+ Qs. Penalty for dupes or broken calls — up to 3%, 3 Qs removed for each error; for > 3% possible disqualification. Disks —IBM, MS-DOS compatible. Format CT.Bin for example-HSØAC.BIN or N6TR.DAT or your .DBF files. *CQ*.

December 'tests

***QRP ARCI Holiday Spirits Homebrew CW Sprint**

1 December 20:00-24:00

(RST+state, province, DXCC country+ ARCI QRP number or power output for non-member) Q 1x per band. Fqs.-1.810, 3.560, 3.710, 7.040, 7.110, 14.060, 21.060, 21.110, 28.060, 28.110, 50.060. Score-pts (5 w/ARCI QRP member; 4 w/non member in different continent; 2 for non-member in same continent)+ bonus points (for ea band on which homebrew is used: +2,000 for HB xmtr; 3,000 for HB rcvr and 5,000 for HB xcvr) x mults (all band total of states/ provinces and DXCC countries) x power multiplier (1x for>5W; 7x for >1W; 10x for<1W; 15x for <250 mW). Single band; all band; high band (20,15,10 or 6); low band (160-40). N6GA

***Telephone Pioneers QSO party**

7 December 19:00- 9 December 05:00

(Exchange-last 2 digits of the year you became a Telephone Pioneer-if not available, then last 2 digits of your year of net credited service, plus chapter number).

Q 1x per mode, per band 1.8-225, and 1x above 420 MHz if different chapter. For same chapter, Q only 1x. Score- pts (1 pt for phone Q, 2 pts for CW, RTTY, AMTOR, packet) x mults (chapters worked — only 1 mult for each chapter). E.Woods, Rm 1S012H, 3600 Marconi, P.O. Box 15038, Sacramento, CA 95851.

***EA CW DX 'test**

7 December 16:00-8 December 16:00

(EA stns-RST+province; others-RST+number)

Q1x per band 80-10 meters. Score-points (1 for ea EA Q) x mults (each province per band). Provinces are: A, AB, AV, AL, B, BA, BI, BU, C, CA, CC, CO, CR, CS, CU, GC, GE, GR, GU, H, HU, J, L, LE, LO, LU, M, MA, NA, O, OR, P, PM, PO, S, SA, SE, SS, SG, T, TE, TO, V, VA, VI, Z, ZA. Single op, multi band// multi op single xmtr. Logs to: URE, EA DX test, P.O. Box 220, Madrid, Spain

***ARRL 160 CW 'test**

6 December 22:00-8 December 16:00

(US/VE -RST+section; DX RST only)

42 Hrs. w/no time limit. DX to DX QSOs not allowed. Pls keep 1.830-1.850 open for intercontinental Qs. Scoring- pts (2 pts for Q w/ ARRL/RAC section; W/VE get 5 pts for DX Q. Single op w/o packet-QRP(5W or less), lo pwr(<150W out), hi pwr (> 150W out); multi only 1 transmitter okay- packet or assisted) x mults (ARRL/RAC sections{+VE8 and VY1}+DXCC countries). Club competition. Certificates. *QST*

***TOPS CW Activity 'test**

7 December 18:00-8 December 18:00.

(599+number or member number)

80 Meters only! Points- 1 per Q with own country 2 per Q w/ own continent. Six pts per Q w/ other continent or /mm. Bonus- 2 pts for ea Q w/ TOPS member. Single op// multi op//QRP (less than 5W out). Mults are different prefixes worked. Score = total points x mults. OE1TKW.

***ARRL 10 METER SSB/CW 'test**

14 December 00:00-15 December 24:00

W/VE -(59(9)+ state/ province)

DX- (59(9)+ number) mm/aero-(59(9)+ ITU region)

Q 1x per mode. 3 Classes: CW; SSB; mixed mode. Operate only 36 of 48 hours available. Score- points (2 pts SSB/FM; 4 pts CW; 8 pts for CW w/N/T stns) x mults (50 sts + DC; Canada (NB, NS, PEI, PQ, ON, MB, SK, AB, BC, NWT, YU, NF, LAB); DXCC countries and ITU regions for/mm or/ am. QRP//low power//high power. Certificates. *ARRL*

***TARA RTTY Sprint**

14 December 21:00-15 December 01:00

(RST+state or province)

Q 1x per band, 80-10 meters. Score - pts (1 per Q) x mults (count only once, not once per band. Mults are ea state, province+VE8 and VY and DXCC country- USA and VE not DXCC country; KH6 and KL7 are DXCC countries). A1- single op all band < 150 W. A2-Single op all band> 150W. Multi op. TARA, 2204 22nd Street, Troy, NY 12180.

***Int'l SSB/CW Naval 'test**

21 December 16:00-22 December 16:00

(RS(T)+number or Naval nr)

Q 1x/band. 80-10 Meters. SSB; CW and mixed mode. Single op. Score- pts (1 per Q or 10 pts if Naval member) x mults (total number of Naval members all bands). DL8JE

***RAC Canada winter 'test**

29 December 00:00-23:59

(VE stns-RS(T)+prov; others RS(T)+ number)

Q 1x per mode per band 160-2 meters. CW 25 kHz up. Ck for CW on the half hour. Phone-1850; 3775; 7075; 7225; 14175; 21250, 28500. Score- pts (10 for VE Qs, 2 for outside VE Qs, 20 for RAC official stns{VE/VY_RAC}) x mults (per band up to 10 provinces and 2 territories- NS, PQ, ON, MB, SK, AB, BC, NT, NB, NF, YU, PE). Single op all band// Single op low power (<100W)//single op single band// multi-op. Single ops using packet or spotting are classed as multi op. Plaques. RAC, 614 Norris Court, Unit 6, Kingston. Ontario, K7P 2R9 CANADA

***Straight Key Night**

1 January 00:00-24:00

80-20 Meters, 60 to 80 kHz from bottom of band and 10 kHz up from Novice band edge. Use SKN in place of RST when sending report.

Following SKN report send a list of those worked and your vote for best fist heard (not necessarily worked). Also vote for most interesting QSO. *QST*

January 'tests

1/1/97
*SARTG RTTY 'test
*AGCW Happy New Year 'test
*ARRL Straight Key Night

1/4 Weekend
*AGCW DL QRP 'test
*Hunting Lions CW'test
*ARRL RTTY 'test

1/11 Weekend
*JA Int'l LFCW DX 'test
*Midwinter Contest CW 'test
*Hunting Lions SSB 'test
*MI QRP 'test
*No. American QSO Party

1/18 Weekend
*NAQP SSB 'test
*ARRL VHF 'test
*YL Int'l CW 'test
*HADX 'test

1/25 Weekend
*CQ 160 CW 'test
*REF CW 'test
*UBA SSB 'test
*QRP ARCI Novice/Tech Roundup

February 'tests

2/1 Weekend
*No. New England (ME/NH /VT) SSB/CW 'test
*Classic Radio Exchange
*NA SSB Sprint
*AGCW Straight Key

2/8 Weekend
*RSGB 1.8 MHz CW 'test
*PACC (Netherlands) SSB/CW 'test
*WW RTTY WPX 'test
*Asia/Pacific 20/40 CW Sprint
*NA CW Sprint
*YLRL SSB YL/OM 'test
*QCWA CW QSO Party
*Utah 160 Meter Challenge

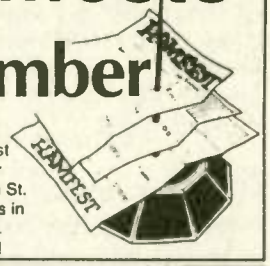
2/12-2/16 (Mon-Fri)
*School Club Roundup

2/15 weekend
*ARRL Int'l CW DX 'test
*YL Int'l SSB 'test

2/22 Weekend
*RSGB 7 MHz CW 'test
*CQ WW 160 SSB 'test
*UBA (Belgium) CW 'test
*No. Carolina QSO Party
*YLRL CW YL/OM 'test
*ARRL 160 CW 'test
*CO QRP Party
*High speed CW 'test WR

Is it time for you to upgrade? Visit your local VE examiner. See page 69.

Hamfests December



Do you have a hamfest coming up? Send your information to our 28th St. office at least 2 months in advance of your event. We'll send prizes!

California

The **Livermore ARK** will hold a swap meet on 1 December, 7 a.m. to 12 noon at Las Positas College, 3033 Collier Canyon Rd. (Airway Blvd. exit to north of 580 highway) in Livermore. Features include new, used, surplus ham, computer gear, misc. electronics and testing equipment, refreshments. Admission and parking is free. No VE exams. Sellers pay $10 space fee. Contact Noel Anklam, KC6QZK, at 510/447-3857 eves. or leave message days at 510/783-2803. Talk-in on 147.045(+) (PL 94.8) and 145.35(-).

Illinois

The **Illinois Valley ARC and Jacksonville ARS** will hold the Central Illinois Winter Superfest on 14 December, 8 a.m. to 2 p.m. (vendor set-up 6 a.m.) at the Turner Junior High School, 664 S. Lincoln Ave. (one block north of Wal-Mart). Features include indoor flea market, radio and computer dealers, free parking, refreshments, VE session (10 a.m., preregistration required, contact Tim Childers, KB9FBI, 773 E. College, Jacksonville, IL 62650, telephone 217/245-2061). Admission is $3 each or two for $5, children under 16 are free. Tables (with one admission) $10 each. Reservations taken until 30 November. Send SASE and check payable to Jacksonville ARS, c/o Kaye Green, KB9KHQ, 27 Ivy Wood Dr., Jacksonville, IL 62650. Talk-in on 146.775(-) and 444.675(+).

Florida

The **Columbia ARS** will hold their second annual hamfest/tailgate on 14 December at the Florida National Guard Armory, in Lake City, FL. For information, call 904/755-7969. Talk-in on 145.49(-) or 147.15(+).

Indiana

The **Hancock ARC** will hold a hamfest on 1 December from 8 a.m. at the Hancock County Fairgrounds in Greenfield, Indiana. Admission $5, 8' table spaces $15, 8' table with electricity, $20. Mail registration to Hamfest Committee, P.O. Box 335 (please note change), Greenfield, IN 46140; 317/326-3168.

Michigan

The **Hazel Park ARC** will hold a hamfest on 1 December from 8 a.m. to 2 p.m. at the Hazel Park High School, 23400 Hughes Street. Admission $4/advance or at the door, tables/$14 (reservations for tables must be received with check, no reservations by phone). Plenty of free parking. Swap information, tables and ticket reservations to HPARC, Box 368, Hazel Park, MI 48030. Talk-in on 146.64(-) (DART).

Minnesota

The annual **Courge Center Handi-Ham** winter hamfest will be held on 7 December from 8:30 a.m. at the Courage Center in Golden Valley (Handi-Ham Headquarters), 3915 Golden Valley Road. There will be a Handi-Ham equipment auction, flea market, dinner at noon and program. For more information, contact Don Franz, WØFIT, 1114 Frank Ave., Albert Lea, MN 56007.

Nevada

The **Western USA and Mexico Chaverim Chapter** will hold its annual convention in Las Vegas, Nevada's Monte Carlo Hotel from 8-12 December. Chaverism is the Hebrew word for friend. The Chaverim organization was founded by the late Hal Crystal, K2BYB, as a way of promoting closer ties between Jewish hams and their friends here in the US to the Amateur Radio community in Israel. Those interested in attending the convention should contact K6AIZ via e-mail at k6aiz.aol.com or direct to his call sign address. Talk-in on 146.88(-) or 144.345 MHz.

South Carolina

The **Union County ARC** will host the second annual hamfest on 14 December from 8 a.m. to 3 p.m. at the Union National Guard Armory on Industrial Park Road in Union. Walk-in VE exams will be given. Talk-in on 145.25(-). **WR**

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

Powerport 50/149 power supplies

Cutting Edge Enterprises has improved on its portable power supply line by adding a device with more muscle and endurance. Powerport 149 provides 12 volts DC and 140 watts AC power with 9 amp hours of storage capacity. That's nearly 3 times the power potential and greater battery capacity than the Powerport 50. It is still compact: 4" x 4.5" x 6" and its lightweight 9 pounds belies its heavyweight abilities.

The Powerport rechargeable power supply is built around a sturdy 12V 9 amp hour gel cell battery. Powerport 149 is equipped with a fully automatic wall charger. This charger allows you to leave your battery plugged in year round, keeping your battery in prime condition and ready to go at a moment's notice. Powerport can also be charged in your vehicle through the cigarette plug.

Available in 50 watt and 140 watt models, Powerport is an economical, highly portable supply to energize your equipment. This unit is particularly useful in the field where conventional power sources are limited or not available. Powerport can be used to run and charge handheld radios, cell phones, laptop computers, test equipment, soldering irons and electric hand tools, fax machines, video cameras, emergency lighting, and more. Can even be used for boosting low car batteries through the cigarette plug adapter. Great for remote setups on Field Days, camping trips, sports events or emergency power. Don't get caught short of power! Price: 50 watt Powerport 50, $114.50 plus shipping; 140 watt Powerport149, $159.95 plus shipping. For information, contact Roger Hall at Cutting Edge Enterprises, 1803 Mission St., Suite #546, Santa Cruz, CA 95060; 800/206-0115.

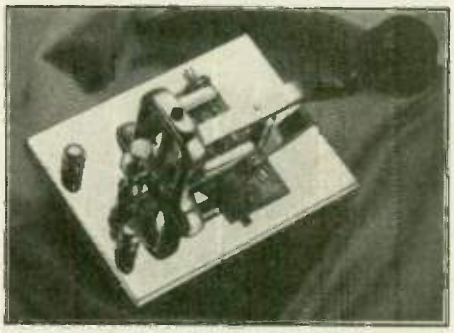
Toolpak utility bag

PAKTEK™ introduces a new addition to its line of tookpak products. The basic design of utility bags has been around for years and accepted for what it is, basic. We have taken this basic bag-design and improved it using durable, leading-edge fabric and hardware. The result is the *ToolPak* brand *Utility Bag,* a basic bag that is basically tough.

Made from 1000 Denier *Dupont Cordura, ToolPak's Utility Bag* is puncture, abrasion and mildew resistant to keep your radio equipment dry.

Features include: An oversized opening designed for easy access, two flap-covered external pockets keep accessories handy, constructed from *Dupont Cordura* for durability, sturdy nylon handles are tough enough for industrial use, and a price of only $17.97.

The *ToolPak* brand *Utility Bag* can be ordered from PAKTEK, Inc. at 7307 82nd St. CT SW Tacoma, WA 98498; 206/584-4914, fax 206/589-1091.



Vibroplex® Straight Key

For the first time in its 100-plus year history, Vibroplex has a straight key in its key line. The design is distinctively Vibroplex. A heavy solid steel base anchors the Straight Key to the operating position. The lever arm pivots in the famous Vibroplex chromed mainframe. A stainless steel tension spring allows complete control of the tension, and the Straight Key has the famous brass Vibroplex logo plate with a unique serial number pinned to the top of the base with stainless steel pins.

The initial production run of the Straight Key is now being assembled. The first keys manufactured will have consecutive serial numbers. Orders will be filled on a "first come-first served" basis, so the early orders will get low serial numbers. To allow all dealers equal availability, initial orders will be limited to a maximum of 10 keys per retail location. Be sure to get your order in soon for low serial numbers.

The Straight Key has a unique me-

chanical action, unlike any straight key that has ever been manufactured! Yet, the smooth action and the heavy steel base will allow the operator to send perfect code.

The Straight Key Racer is very easy to adjust, with three adjustments. Adjustment one controls the pivoting of the contact lever, and can be set from "loose" to "stiff" pivoting. The second adjustment is the contact post spacing, which in conjunction with the contact lever pivot adjustment sets the total action of the contact lever. Adjustment three sets the spacing of the key lever, allowing the operator to precisely control the "feel" of the key. The three adjustments are essential for sending good Morse code.

Prices are $174.95 for the deluxe hand key and $139.95 for the standard. For more information, contact The Vibroplex® Co., Inc., 11 Midtown Park, E., Mobile, AL 36606-4141; 800/840-8873, fax 334/476-0465.

CTCSS/Burst tone unit

Communications Specialists, Inc. of Orange, CA introduces an upgraded version of their popular TE-64D tone encoder. The multi-purpose CTCSS/Burst tone unit now displays the actual tone frequency on a four digit LED display. The self-contained, fully enclosed encoder provides all EIA CTCSS tones from 67.0 Hz to 203.5 Hz plus all common burst tones from 1600 to 2550 Hz in 50 Hz increments. A front dial rotary switch provides tone selection, making it ideal for mobile applications, night time operations, or whenever high visibility readout is desired.

Operates on 6-16V DC (can be modified up to 30V DC) and measures 5.25" x 3.3" x 1.7". Frequency accuracy is .1 Hz for sub-audible and 1 Hz for audible tones. Priced at $129.90 and available for immediate delivery with our "no-hassle" one year factory warranty.

The digital display portion of the TE-64D can be added to an existing TE-64 with the TE-64D-MOD kit priced at $49.95. Available as a kit or you may return your TE-64 for free factory installation.

For further information contact: Communications Specialists, Inc., 426 West Taft Ave., Orange CA 92865- 4296; 800/854-0547, fax 800/850-0547 (USA and Canada). 714/998-3021, fax 714/974-3420 (International).

DJ-S41T "pocket size" HT

Alinco Electronics announces the availability of the DJ-S41T, a Handy-Talkie (HT) Transceiver designed to operate on the 70 cm (440 MHz) band. The new HT, only slightly larger than most pagers, runs on 3 AA cells. The DJ-S41T is expected to be available for less than $150 at most Amateur Radio retail locations that carry Alinco products.

Taka Nakayama, Vice President for Alinco, cited that the DJ-S41 makes a quality Amateur Radio communicator available at a price nearly anyone can afford. The unit features 21 non-volatile memories, CTCSS encoder, offset capability up to 15.995 MHz can transmit through most of the U.S. 70 cm band (425 ~ 449.995 MHz) and transmits with a power of 340 milliwatts. Mr. Nakayama indicated that the output is more than adequate to "hit" repeaters or carry on simplex communications over a considerable distance. The unit could also prove popular with those who have access to cross-band repeaters or mobile units with cross-band capabilities.

A unique feature of the DJ-S41T is its pivoting "swing up" antenna. The flexible design allows the radio to remain compact in pocket or purse without detaching the antenna. It also does away with the risk of misplacing a detached antenna.

"This radio is exciting for many reasons," said Doug Wynn, sales manager for Alinco. "First, it puts a quality radio within budget reach of nearly every licensed Amateur Radio operator, Technician Class and above. The low price is perfect for those who have more than one licensed ham in the family. Second, it can be used through repeaters, cross-band repeaters or simplex. It's perfect for families or groups who enjoy travel to the great outdoors or the local shopping mall; the DJ-S41T will allow them to stay in touch. Third, women love it. Nearly every woman who has had a chance to preview the radio asks when and how they can get one. It's small enough to fit in a purse or to be carried on a belt like a beeper, without being obtrusive. In addition, it's a radio you can give to a youngster — it's rugged, the antenna can't get lost and it fits in a pocket, on the belt or into a school bag easily. Fourth, The AA battery power means that batteries are always available to the user. Our tests show 40 hours of cyclical use can be obtained from a set of 3 AA alkaline cells. If a person wants NiCad batteries, there is an optional package available for the radio."

Technically the radio is impressive in its user simplicity. One of the features that should prove popular is the ample audio that can be generated from the speaker. Among the features to be found are 50 CTCSS tones, battery save function, large illuminated display, adjustable offset (to 15.995 MHz), adjustable tuning steps, pager "alert" alarm, hi/low transmit power setting, programmable auto power off feature and more. The radio comes with a belt clip and carry strap.

"The DJ-S41T is consistent with Alinco's commitment to providing radios that are simple in operation, clean in design and dependable in use, while offering superior value to our customers. For more information, contact Alinco Electronics, Inc., 438 Amapola Ave., Ste #130, Torrance, CA 90501; 310/618-8616, fax 310/618-8758. WR

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AUTO-CALL MAGAZINE, official journal of the Foundation For Amateur Radio, a federation of over 80 clubs in the greater Baltimore/Washington DC area. Great coverage of FCC, ARRL, VEC, Public Service and club activities in the area. A must for those even passing through the area. For a sample copy write FOUNDATION FOR AMATEUR RADIO, P.O. Box 7612, Falls Church, VA 22046-7612. F1296

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HAM RADIO REPAIR! Reasonable charges. JIM RUPP (WARRC), 998 Whipple, Grayland, WA 98547-0697, 360/267-4011, AB7DR. 696-697

QSLs — ELEGANT, AFFORDABLE. Samples $1 (refunded with order). ELEMENTAL DESIGNS, Dept. W6085, 1639 Fordham, Mountain View, CA 94040. 8-1296

SELLING VARIABLE CAPACITORS, 25 to 250 pF 4kV removed from new equipment, ideal for tuners. $50 each including postage. W6QEU, 1236-40th Ave., Sacramento, CA 95822. Msg phone 916/421-1637 (Kopps). F197

NW80/20 5 WATT CW TRANSCEIVER Kit offered on 80M, 40M, 30M, 20M, specify band $73.95. Ck/MO to DAN'S SMALL PARTS & KITS, Box 3634 Missoula, MT 59806; phone/fax 406/258-2782. Catalog two stamps or visit our web page: http//www.fix.net/dans.html 1096-397

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WANTED FOR MUSEUM: Apple-1 and other pre-1980 micro-computers, also early micro-computer journals, newsletters and advertising literature. KK4WW, P.O. Box 341, Floyd, VA 24091, 703/231-6478 or 703/763-2321. 196-197

AMATEUR RADIO REPAIR— Prompt service. HALL ELECTRONICS, 1660 McKee Rd., Ste. A, San Jose, CA 95116; 408/729-8200. 196-397

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CHAVERIM-WESTERN USA AND MEXICO CHAPTER. Jewish amateurs and friends interested in our chapter or the Chaverim, contact KA6BJO, 2242 #N, Laguna Hills, CA 92653. 696-697

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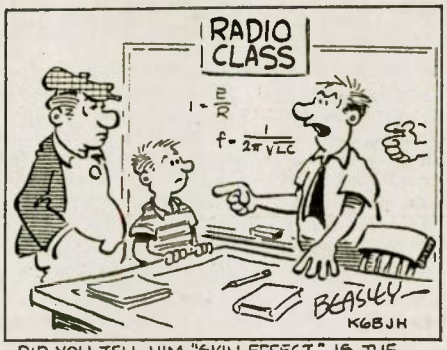

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1)Sales through dealers & carriers, street vendors & counter sales	902	798
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VE exam schedules

As a service to our readers, ***Worldradio*** presents a feature listing 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 October, please have the information to us by mid-July.

p/r pref. = pre-register preferred but w/i OK
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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.

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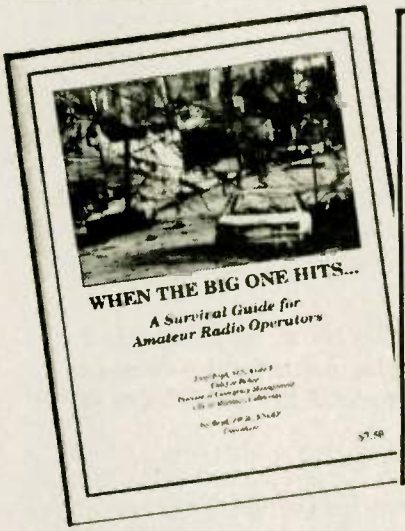

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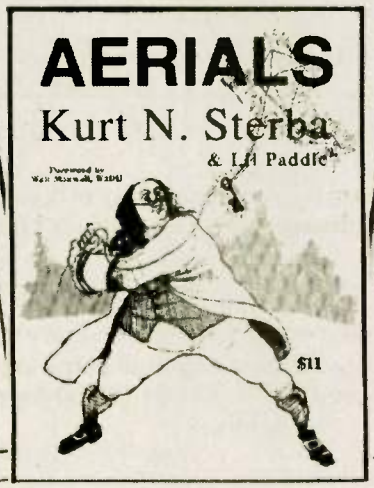

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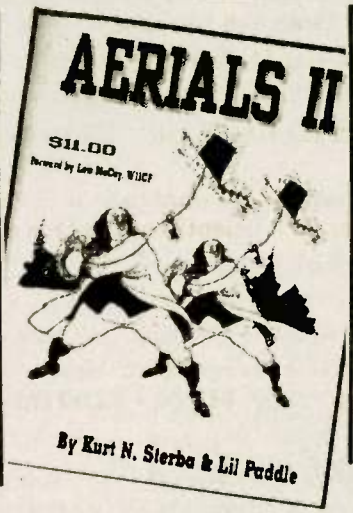

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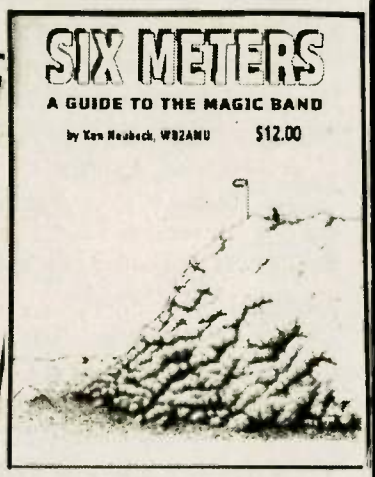

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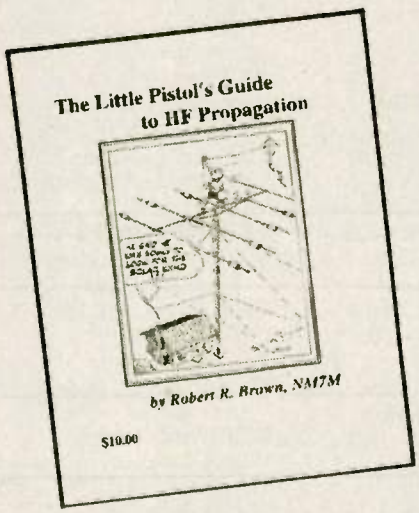

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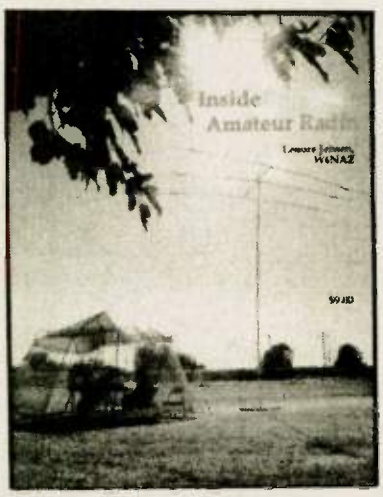

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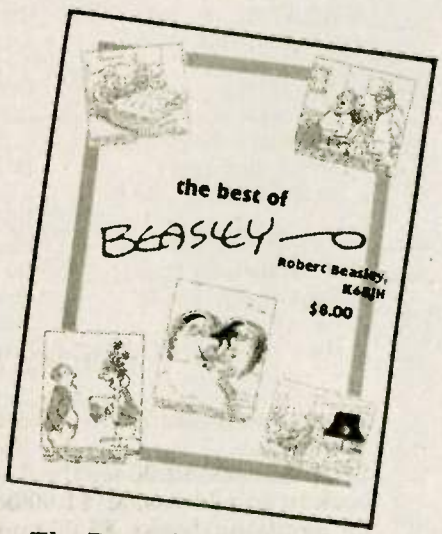

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Late Flash

Congress directs FCC to sell part of 2.3 GHz ham band

Part of a ham band is being put up for auction to the highest bidder and the United States Congress has mandated the sale. For what may be the first time in history, Congress has ordered that specific radio frequencies be reallocated. This includes 5 MHz that Amateur Radio shares with government services between 2305 and 2310 MHz.

During its final hours before adjournment, members of the 104th Congress approved a provision as part of a larger appropriations bill. That provision directs the FCC to take 30 MHz of spectrum from the 2.3-GHz region and sell it to the highest bidder to help balance the budget.

Back in May of 1994, the National Telecommunications and Information Administration identified the amateur segments 2300- 2310 MHz and 2390-2400 MHz for reallocation. But this latest move by Congress comes as a surprise, nonetheless. Last year hams scored a major victory by getting primary allocations on the 2390-2400 MHz and 2402-2417 MHz subbands, and many assumed that the government would then leave the entire band alone. Capitol Hill lawmakers proved them wrong.

The recent congressional action reallocates 2305 to 2320 MHz and 2345 to 2360 MHz to wireless services, consistent with international agreement concerning spectrum allocations. The action was included in the massive, 2,000-page Omnibus Consolidated Appropriations Act, which Congress passed and the President has signed. The act is now Public Law 104-208. Just when Amateur Radio operators will be told to leave the affected segments has not been disclosed.

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