Worldradio

Year 25, Issue 2

August 1995 • $1.25

FEATURED IN THIS ISSUE

Bucks County, PA — Surprise visitor at hamfest

Caracas, Venezuela — Getting on the air in Venezuela

Dayton, OH — 1995 Dayton Hamvention

Koloa, HI — Preamplifiers and attentuators

Santa Clara, CA — ITV... return to sender

Winston-Salem, NC — Wherefore art thou, QSL?

COLUMNS

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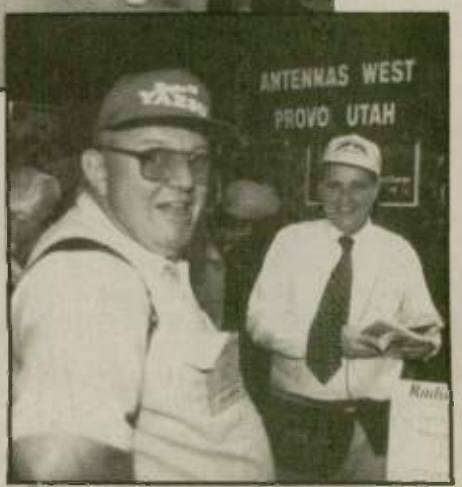

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— *Worldradio* NEWSFRONT —

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

New Hampshire promotes antenna rights

Unanimous votes marked the approval by both the state House and Senate of New Hampshire of HB 379, with Governor Stephen Merrill then signing the legislation into law on 5 June. Members of the legislature wrote the bill to give greater protection to the state's Amateur Radio operators than is provided by federal law in PRB 1.

The new law states in part:

"No city, town, or county in which there are located unincorporated towns or unorganized places shall adopt or amend a zoning ordinance or regulation with respect to antennas used exclusively in the amateur radio service that fail to conform to the limited federal preemption entitled "Amateur Radio Preemption, 101 FCC 2nd 952 (1985) issued by the Federal Communications Commission."

Last year, New Hampshire also enacted legislation which protected Amateur Radio towers from being taxed as real property.

The people responsible for the success of this Amateur-related legislation include:

Rep. Ralph Rosen, W1HSB, author of the bill; Rep. Tom Kirby, W1EJ; Rep. Rudy Adler, W1GUA; Jack Sheehy, WA1ALM; Cal Calvitt, W1WOK; and ARRL Section Manager Al Shuman, N1FIK.

Advanced exam update

Use of the new Advanced Class question pool became official on 1 July. The new 4th edition of the ARRL Advanced Class License Manual containing the entire new question pool is now available from the League for $12. Write the ARRL, 225 Main St., Newington, CT 06111.

RATS!

The Radio Amateur Telecommunications Society may now be reached on the Internet's World Wide Web. The RATS Home Page provides links to projects which include the ROSE X.25 Packet Switch, ROSE packet Radio Mailbox System and much more. The software for each project can be downloaded directly from links on the Web pages. Additional RATS projects are due to added soon.

The RATS Home Page also includes a link to the Packet Radio Home Page maintained by Howie Goldstein, N2WX.

S.P.A.R.C. Net

The Suffolk Police Amateur Radio Club, of Long Island, New York has a new 80M net. The net meets every Monday at 1630 EST on 3.910 kHz.

The purpose of the net is to meet other members of the law enforcement community and to connect with members of SPARC located beyond the range of the club's VHF net.

The net is open to amateurs with interests in common with the net.

Take a careful look

As part of a petition from the ARRL (RM-8418), the League proposes that former licensees whose licenses have expired and are no longer within the grace period, be reinstated. VEs would be authorized to give credit for exam elements successfully completed by a former General Class licensee, for example, who would then be issued a General Class ticket. No examination on present-day regulations would be required, no matter how long ago the previous license was issued.

The Commission also asked for "comments concerning the criteria that should be used to allow any other persons similarly situated (such as former and current holders of other types of operator licenses issued by the Commission, other U.S. government agencies, and foreign governments) to obtain examination credit, without examination, for amateur operator licenses."

Presumably that would include those non-amateurs who had licenses issued though the National Science Foundation to run phone patches from the South Pole, or military personnel who operated special Amateur Radio calls, but were not personally examined and licensed to operate in the amateur bands.

Is it a good idea for former licensees, or licensees from another country, etc., to operate without at least having a demonstrable working knowledge of current rules and regulations?

While there can be no doubt that many amateurs of forty years ago may have superior technical skills in many aspects of the radio arts, there have been great changes as well. What do you think? For more on proposed changes, see FCC Highlights, page 8. *—Lou Ann, KB6HP*

Coordinator will be Russ Famulare, N2TZM, who is a retired New York State Court Clerk.

Fewer VECs

Gordon Girton, W6NLG, of the Sunnyvale VEC reports that the number of Volunteer Examiner Coordinators was down to 16 as of 1 July.

The Great Lakes VEC has not conducted testing in more than 6 months, and the Charlotte VEC has informed the FCC that it stopped testing as of 1 July, due to health problems of a senior administrator.

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Worldradio (USPS 947000) is an international conversation. You are 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. ***Worldradio*** is an independent magazine not affiliated with any other firm, group or organization. Its pages are open to all.

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PUBLISHER'S MICROPHONE

In running the following amateurs through the computer, we see that the average age is 47.2 years old. (Birth years ranging from 1926 to 1960.) Clever folks these. They realized that there will be many increases in paper cost and massive postal increases over their next 50 years, so they locked in their subscriptions at what over time will prove to be but a mere pittance. The latest to become ***Worldradio*** SuperBoosters (Lifetime Subscribers) are:

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•Jim Wennbcom, WAØARZ, Bellevue, WA

•Raymond Magorno, II, KO6IY, doing good things for his country at FPO, Europe.

•Director, Foreiningen Sveringes Sandare, Farsta, Sweden

•

Prior to the tragedy in Oklahoma City there were the prophets of doom saying that such entities as the Internet would spell the end of Amateur Radio's role in emergencies. Many even took such utterances seriously.

Obviously mesmerized by their monitor's scan lines, they forgot to notice that their precious Internet is held together by mundane telephone wires, and a point equally missed is that it takes the electric company wires to power the computer.

On the other side is the fact that an entirely independent, fully capable RADIO system can be carried ANYWHERE in one hand.

An example of that, away from VHF, is the fact that an HF station (100W) can operate all of Field Day on one automobile battery.

Amateur Radio does not need the cellular phone system in order to relay messages.

•

One of the very hardest working people (on a volunteer basis) for the good of Amateur Radio is Bill Pasternak, WA6ITF. Rightly so, he was honored for his many efforts, being selected as the Dayton Hamvention's "Ham of the Year" a few conventions ago.

With all the past success of the Amateur Radio films he has worked on with Dave Bell and Roy Neal that we see on PBS, he isn't resting on any laurels. Even with all the hard work involved in his role at *Newsline*, he has a new big project in the works.

Bill is very concerned with young people, the benefits they will derive from Amateur Radio, and their importance to the growth and continuance of Amateur Radio.

He's working on a new video aimed at school-age audiences and cast with school-age amateurs, so potential amateurs will better relate.

Making a video presentation so it looks better than a vacation through the Grand Canyon home movie is not cheap.

For sponsorship Bill has approached the very people who would have the most to gain financially from a numerical increase in our ranks. Oddly, the equipment manufacturers have not raised their hands with enthusiasm.

It is indeed to all our benefit to have more amateurs, so individual donations of any amount would be in order. Bill has talked about giving any $1,000 or more donors a credit line in the film. But, big or small, all amounts can add up to something very worthwhile. All interested parties may contact Bill at 28197 Robin Ave., Saugus, CA 91350.

What Bill is doing is very important and with an intense dedication he does it very well. We will certainly be participating in his project and highly recommend it. —*Armond, N6WR*

Won't you join us? Subscription form is on page 9.

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Compact HF Transceiver FT-900AT

A full-featured HF base station, compact enough to go mobile.

Specifications

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ACCESSORIES:
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SP-6 Base Station External Spkr.
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"What a great HF! Heavy-duty heat sink! FT-1000 technology. A serious performer."

"Compact for mobile, too. Snap-off front panel mounts anywhere. Built-in antenna tuner. No extra tuner box to hook up!"

"Yaesu did it again!"

VOX
Exclusive! For simple hands-free transmit/receive control.

Dual Metering Display
Exclusive!
Shows power output, ALC, SWR, signal strength.

Built-in CW Keyer
Exclusive!
Use in semi-break-in or full-break-in modes.

10-Key Direct Frequency Entry
Exclusive!
For quick band/ frequency accuracy.

Built with commercial-grade engineering, and a heavy-duty die-cast aluminum heat sink, like all Yaesu base stations – this radio leads the competition in state-of-the-art compact HF technology.

No other radio this small offers 10-key direct frequency entry. Built-in antenna tuner, dual metering in the display, built-in CW keyer, VOX – *and* a heavy-duty heat sink with a duct-flow cooling system that lets you key down longer. As a bonus, to round out the feature-rich FT-900AT, Yaesu's exclusive Omni-Glow™ display provides the best viewing possible under any light condition. Try to find all this on any real HF compact enough to be a mobile. You can't!

Mobile HF has never been better, because the FT-900AT is the first transceiver with true HF technology developed as a base performer and adaptable for simple mobile use. Just snap off the FT-900AT front panel control head and install it just about anyplace in your car, truck or RV. Secure the RF deck under a seat or in the trunk, out of sight and away from critical automotive electronics.

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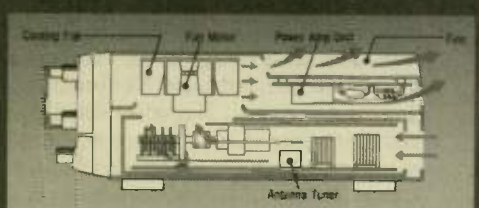

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Dayton Hamvention '95

Norm Brooks, K6FO

Once again this year, the Dayton Hamvention Committee of the Dayton Amateur Radio Association put on the "Greatest Show on Earth" (as far as Amateur Radio is concerned) at the Hara Arena in Dayton Ohio. The dates were 28, 29, and 30 April 1995. This was the last Hamvention to be held in April. The 1996 bash will be moved to May in hopes of encountering better weather. It rained every day during the 1994 Hamvention, but the Weather Gods made up for it by blessing the 1995 get-together with excellent weather.

Over 33,000 ham operators saturated the Dayton area for the three day weekend. Activities included displays of equipment and services by hundreds of exhibitors, a 2,600 space flea market, forums on just about every subject in Amateur Radio, hundreds of prizes valued at thousands of dollars, license examinations, a superb Saturday evening banquet, and alternative activities for spouses who just came along for the ride.

The Hamvention also makes three awards, which are presented at the banquet: The *Amateur of the Year Award* went to Rosalie White, WA1STO, for her leadership in the educational side of Amateur Radio. In her work on the staff at ARRL, Rosalie coordinated numerous workshops to motivate educators in using Amateur Radio in their classrooms. She is a member of the SAREX Working Group, working to bring space flight science to our classrooms. *The Special Achievement Award* went to

Rosalie White, WA1STO

Ed Briner, WA3TVG. Ed is editor of the MARCO Newsletter for the Medical Amateur Radio Council. He has participated in the Flying Dentists visits to Honduras helping to provide dental care to the underprivileged children of that country. *The Technical Excellence Award* was received by Philip Ferrell, K7PF, for his developmental work in fingerprinting radio transmitters. This has helped both amateurs and the FCC in identifying problem transmitter users.

As in the past ten years, ***Worldradio*** was present at its booth on the Hara Arena main floor. We believe we have a choice spot, adjacent to the Cushcraft, Standard and Kenwood exhibits. Many of our subscribers stopped by and we had many fine eyeball QSOs. Your reporter tried to get around to as many forums as possible to report them to you. I didn't do as many as I would like, though, because I had the use of a Sony Hi camcorder and spent a lot of time shooting video pictures.

Ed Briner, WA3TVG

The ARRL forum

I attended the ARRL forum primarily to get an answer to a question we had about minute 85 from the ARRL Board meeting of 20-21 January 1995. This minute read:

85. It was moved by Mr. Mendelsohn, seconded by Mr. Gordon, that the Board, Staff and Legal Counsel continue to study the growing problem of EMI complaints directed against amateurs, including civil and criminal actions brought against amateurs by state and local governments to restrict amateur station and/or operations in the name of interference reduction; coupled with the FCC's lack of meaningful action to reduce the EMI susceptibility of consumer electronics equipment; determine the extent of the problem on a national basis and develop a long-term league policy for addressing this problem including recommendations for additional legislative or regulatory action. Following discussion, the motion was WITHDRAWN.

This minute summarizes the problem that confronts most Amateur Radio operators today. How can such an important issue be withdrawn? The answer was that the discussion pointed out that the League was working on *all* of the items listed, and that to act on the motion would be redundant. Perhaps so. Do *you* believe the League is doing all it can to ease the amateur operators EMI headaches? If not, tell your League Director. Apparently Directors Mendelsohn and Gordon didn't think so, or they wouldn't have brought up the motion in the first place.

It was good to see Pacific Divisions own Rod Stafford, KB6ZV, acting as president of the League while George Wilson is recovering from a stroke. We all wish George a speedy recovery. Other League officials present on the podium were Executive Vice President Dave Sumner, K1ZZ, Great Lakes Division Director Allan Severson, AB8P, and Great Lakes Division Vice Director George Race, WB8BGY.

Dave Farnsworth, WJ2O

The FCC forum

John Johnston, W3BE, and William Cross, AA3DI, from the Wireless Telecommunications Bureau, Private Wireless Division of the FCC gave us the latest information on FCC activities. This was reported last month in the FCC Highlights column.

Computer logging programs

More and more, we amateurs are taking to keep our log on a computer. Of course, the FCC does not *require* us to keep a log. If you are active in, say DX, how would you keep track of your contacts without a log? If you like awards, such as WAS, (Worked all States) how would you know where you stood without a log?

If you are just now starting to keep a log on a computer, you have a bewildering choice to make: Which logging program is the best for me? There are several good ones available,

Lauren Rudd, KD8PZ

and all priced within an amateur's budget.

To help you, there was a forum on logging programs. The moderator was Lauren Rudd, KD8PZ. Lauren became the authority on the subject when he wrote an article entitled "Let Your PC Do the Logging" on page 50 of the May 1995 issue of *QST*. Speakers at the forum were Dave Farnsworth, WJ2O, with the WJ2O logging program; Joe Spear, AH8B/W4, with Hyperlog; Dean Fredericksen, W8ZF, with DX Base; Dave Monfried, W2PK, with Log Plus!; Ira Chavis, WA1W, with Logwindows; and Dennis Hevener, WN4AZY, with LOGic 4.

Each of the speakers emphasized how and why the features of his program evolved. All of them supported the DXer, showing the DXer where he stood on the DXCC award. Most of them worked in conjunction with PacketCluster, even bringing in an alarm when a country you did not have is reported on that system. Some will even set your transceiver frequency and turn your antenna rotator to the DX country! Most supported the state hunter and county hunter. Most allowed you to go to the *Callbook™*, either on hard disk or CD ROM and look up the station you're logging. There were big differences in

Tom O'Hara, W6ORG

the appearance of the logging screens, this no doubt due to each program writer's preference. One, LOGic 4, is so universal that the user can configure it to be used in any contest, even those not yet invented! I will not attempt to enumerate all the features for each of the programs. This has already been done by Lauren Rudd in his *QST* article referred to above. I recommend it.

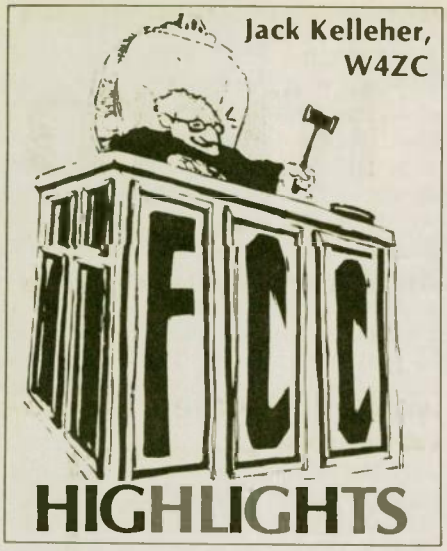
Pactor

You will hear comments that radio amateurs are no longer leading the pack in developing new technology. In the field of digital communications this is *not* true. Actually, Amateur Radio operators are on the cutting edge of digital communication technology. This is brought home quite clearly in the field of Pactor. Pactor was developed by German Amateur Radio operators over five years ago. At that time FSK (Frequency Shift Keying) was the most used method of digital modulation, used for RTTY and Packet. Most everyone knows that those modes had to be slowed down to fit into a reasonable band width on the high frequency bands. Pactor was designed to fit into a 500 Hertz bandwidth and yet vastly improve the throughput of Packet. It became so popular that it is included in just about every TNC (Terminal Node Controller) on the market today.

Time moves on. Again the German amateurs have made an improvement to Pactor that is totally compatible with the old Pactor. They call it Pactor II to distinguish it from the old Pactor I. It appears that Pactor II will be embraced by the Digital fraternity. Several TNC manufacturers will be licensed to use it.

At the forum, Dr. Tom Rink, DL2FAK, was the moderator, and speakers were Phil Sussman, KB8LUJ, editor of The Pactor Worldwide Users Group newsletter; Hans-Peter Helftert, DL6MAA who described Pactor II protocol; Rod Proctor, KI7ZI, who described Pactor

(please turn to page 11)



Last month we gave up our space so that you could have an on-the-scene report from the Dayton Hamvention. Here is a brief recap of what the regular July column would have contained.

FCC Auctions

There is some misunderstanding of this subject, especially as to the possible impact of auctions on amateur frequencies.These auctions involve only frequencies allocated to the land mobile services which are not generally shared with the Amateur Service. Therefore, there should be little or no impact on amateurs. Indeed, the contents of a recent NTIA report indicate that the prospects for retention and even expansion of frequency bands for the Amateur Service look good.

NTIA on spectrum needs

In our September 1992 column we mentioned that a broad-based inquiry had been undertaken by the NTIA into future requirements for use of the radio frequency spectrum in the U.S., and technology trends that would affect use of the spectrum. We noted that the NTIA inquiry directly addresses the Amateur Service, and that they sought comments on: (1) What factors could either increase or reduce the spectrum requirements of the service; (2) Is the current spectrum used by amateurs adequate? (3) What new technologies may increase the ability of the amateur service to share with other radio services in certain frequency bands?

NTIA has now issued projections for U.S. spectrum requirements, which include projected amateur requirements based largely on inputs from ARRL and AMSAT. (The NTIA Report is covered in considerable detail in *QST* for June 1995, pages 75/76).

Auto control on HF

Two years ago ARRL petitioned the FCC to establish permanent rules governing automatic control of MF and HF data operation in the Amateur Radio Service. On 17 April 1995, FCC amended its rules to comply with this request. This brings to a conclusion an action which was initiated back in 1986.

Automatic control of data communications at VHF was authorized in 1986 (RM-85-105). Numerous commentators in that proceeding suggested automatic control also be permitted at MF and HF, either on a regular basis or, at least initially, by Special Temporary Authority (STA).

The FCC chose the STA approach to determining the feasibility of automatic operation below 30 MHz, authorized the STA for experiments to determine the feasibility of HF automatic operations, and extended the STA several times, with a final expiration date of 3 Feb 1993.

On 1 February 1993, ARRL requested that the FCC grant a final extension of the STA, requested that the Commission issue a Notice of Proposed Rule Making at an early date, and suggested the scope of the proposed Rules. Subsequently the ARRL proposal was published for comment. The League position was not unanimously accepted at first, but differences were ironed out, and on 23 June 1994, the FCC issued a Notice of Proposed Rulemaking (Docket 94-59). The amendments proposed in that action and those adopted on 17 April appear to be identical.

The future of Morse

We understand the New Zealand government has decided to actively seek the suppression of RR 2735 at WRC-95. Our understanding until now was that ORACLE sought to modify but not eliminate the RR 2735.

What will happen between now and the opening of WRC-95 (23 October 1995) is anyone's guess. We'll keep you informed. Now for this month's news.

Proposed changes to Part 97

On 8 May, the FCC issued a Notice of Proposed Rulemaking (NPRM WT-95-57) concerning several changes in

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 June 1995.

For more information about the call assignment in the Amateur Radio Service, see Section 97.17(f) of the FCC Rules, or write to the FCC, Consumer Assistance Branch, Gettysburg, PA 17325-7245.

Radio District	Group A Am Extra	Group B Advanced	Group C Tech./Gen.	Group D Novice
Ø	AAØXW	KGØXC		KBØSWQ
1	AA1NO	KE1BU	N1VGK	KB1BSD
2	AA2XP	KG2CX		KB2UXP
3	AA3LW	KE3TS	N3VOD	KB3BJL
4	AE4IU	KS4YB		KF4AQY
5	AC5DE	KK5PK		KC5OYU
6	AC6NN	KO6WN		KE6URO
7	AB7KN	KJ7OI		KC7LLW
8	AA8TS	KG8RR		KB8ZWA
9	AA9PB	KG9CQ		KB9KSE
N. Mariana Is.	KHØR	AHØAW	KHØDW	WHØABC
Guam	WH2P	AH2CZ	KH2NT	WH2ANM
Midway Is.		AH4AA	KH4AG	WH4AAH
Hawaii		AH6OD		WH6CVT
Amer. Samoa	AH8O	AH8AH	KH8CI	WH8ABB
Alaska		AL7QC		WL7CNA
Virgin Is.	WP2R	KP2CE	NP2IG	WP2AHX
Puerto Rico		KP4ZO		WP4MYZ

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Part 97 of its Rules pertaining to the Amateur and Amateur Satellite Service.

Item 1: In July 1993 the National Conference of VE Examiner Coordinators (NCVEC) asked the FCC for a rule change that would provide for a volunteer examiner (VE) on-site manager at license examination sessions. (See RM-8301).

The NCVEC requested that the VE session manager be recognized in the rules as the person in charge of the session. Often there are examinees at a session who are seeking a class of license that requires examination in more than one element. Where there are many examinees, the VE session manager increases examination efficiency by organizing as many VEs as necessary into "teams," each administering a particular element.

The ARRL commented that the current requirement, for three VEs to administer each examination ensures the integrity of the examination system. The ARRL also believes that placing the responsibility for the propriety of the examination on one person only dilutes the joint and several liability of all three VEs. (Note: ARRL/VEC activities are separate from ARRL activities, pursuant to §97.521 of the Rules).

In its NPRM the FCC said: "We propose to amend the rules to recognize the role of the VE session manager as the person who plans, keeps records, organizes and supervises the activities of administering VEs at each session. In our 1993 Financial Inquiry, we solicited information from sixty VEs. The responses of the VEs indicate that many VEs have organized themselves into teams locally, and that a team tends to answer to the leader.

"The team leader is often the only VE who is reimbursed and maintains records...We also propose that each examination element continue to be administered by at least three VEs.

"The presence of at least three VEs will provide the VEC with first-hand observers who can monitor the performance of the VE session manager and the other VEs. This will preserve the cross-checking favored by the ARRL, while recognizing the role of the VE session manager as requested by NCVEC."

Item 2: An ARRL Petition (RM-8418) argued that former license holders whose interest is rekindled should be permitted to reenter the amateur service without examination.

The FCC said: "We believe that the ARRL's position has merit. Former license holders previously passed examinations demonstrating that they qualified for the class of operator license held. Further, this proposal would relieve the VEs from the burden of preparing and administering examinations for former license holders."

The FCC proposed to authorize administering VEs to give examination credit for any examination that the applicant previously passed in obtaining the former license.

The Commission also asked for comments concerning the criteria that should be used to allow any other qualified persons similarly situated (such as former and current holders of other types of operator licenses issued by the Commission, other U.S. government agencies, and foreign governments) to obtain examination credit, without examination, for amateur operator licenses.

To implement this decision, the Commission proposes to add a new paragraph to §97.505, as follows:

"(a)(10). An expired FCC-issued amateur operator license. The least elements required for the license formerly held. No examination credit will be given if the operator license was suspended for the remainder of the license term. If the operator license was surrendered to avoid enforcement proceedings, or if the operator license expired following revocation of the associated station license. Examination credit, however, will be given if the suspension period of the operator license was subsequently modified to denote a lesser time period."

Item 3: The ARRL petitioned the Commission (RM-8462) to increase from two to four the minimum number of members of a club applying for a club station license. The FCC agreed, saying "We believe there is merit to ARRL's suggestion. Requiring four members, rather than two, would assist in ensuring that radio clubs are bona fide organizations. Accordingly, we propose to increase the eligibility requirement to four persons for a club station license."

Appropriate revisions are proposed to §97.5(b)(2).of the Rules.

Item 4: Special event vanity call system. When the Commission proposed adoption of rules for a vanity call sign system they indicated that they would be setting aside one-by-one call signs for special events. (There are 780 such call signs). The ARRL had requested that such call signs be reserved for stations operating in conjunction with short-term events of national significance.

In response, the Commission said stations wishing to obtain a special event call sign would be required to indicate the nature of the event at least 120 days in advance, and certify that it is of special significance to the amateur service community. In addition, the licensee would submit a list of one-by-one call signs, in the order of preference.

This list could be included in a letter or be on a form prepared by the applicant or supplied by an outside source. Unlike ten year term vanity call signs which are scheduled to cost $70, special event vanity call signs are proposed to be free. The first assignable call sign on the list would be stamped "granted" and a copy of the list would be returned to the person making the request.

The special event vanity call sign could be used for a period not to exceed that of the special event, or 15 days, whichever is less. The FCC asked that the amateur community comment of this proposed special event vanity call sign system.

The NPRM contains proposed language for revision of §97.3 (Note: Changes in the Rules to implement the vanity call sign system are in abeyance until the several petitions for reconsideration are disposed of.)

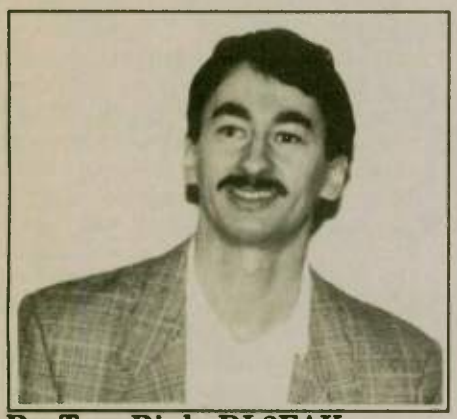
Item 5: Station identification. The FCC has received several informal requests for clarification of §97.119(c) of its Rules, concerning station identification. Subparagraph (c) provides that "An indicator may be included with the call sign. It must be separated from the call sign by the slant mark ("/") or by any suitable word that denotes the slant mark. If the indicator is self-assigned, it must be included after the

call sign and must not conflict with any other indicator specified by the FCC Rules or with any prefix assigned to another country."

The FCC said it is getting requests to include a self-assigned indicator before rather than after the assigned call sign as provided in the current rule. For example, the licensee of amateur station W1AA in Boston, MA decides to operate the station while vacationing in the U.S. Virgin Islands. In order to direct more attention to the station, the licensee may include a self-assigned indicator such as /KP2, in the station identification announcement.

The FCC said: "We propose to permit also the station announcement KP2/W1AA and KP2/W1AA/KP2. We believe that allowing indictors to be included before, after or both before and after, the assigned call sign will provide the amateur service community better flexibility when making the station identification announcement. We propose, therefore, to amend the rule accordingly. The NPRM contains proposed revised language for §97.119(c).

The Commission requested comments on all of these items on or before 14 July 1995, and reply comments by 14 August 1995. By the time you read this the deadline for comments will have passed; but not for reply comments. **WR**



Dr. Tom Rink, DL2FAK

Dayton

(continued from page 7)

II and the DSP-2232; and Gwyn Reedy, W1BEL, who produces the SCS PTC-II TNC.

If you are interested in learning more about this highly technical subject, I suggest you contact Phil Sussman, KB8LUJ, P.O. Box 31, Clayton, OH 45315, and ask for a sample copy of the Pactor Worldwide Users Group Newsletter.

Electrical safety

Each year at the Hamvention, The Dayton Power and Light Co. puts on several Electrical Safety demonstrations. In one of the "industrial" type areas at Hara Arena they set up an actual power line, powered at 7,200 volts. They demonstrated the power lineman's tools, which are made of fiberglass, the high voltage lineman's gloves and how they are safely used.

The demonstration gets the audience's full attention when they show how a damp kite string reacts to 7,200 volts. Things get more exciting when aluminum antenna rods and wires encounter the high voltage.

This "Gee Whiz" demonstration was put on by George Maurer and Tony Norman of Dayton Power and Light. Thanks, fellas! We wish every Amateur Radio operator in the country could see this demonstration first-hand.

Amateur television

Tom O'Hara, W6ORG, who it seems has become "Mr. ATV," hosted the Fastscan Amateur Television forum at the Hamvention.

This year there was more to talk about than the hardware. ATV DX records had been broken, and new special effects computer software was demonstrated.

Gordon West, WB6NOA, told about the new one-way 2518 mile record from KH6HME in Hawaii to KC6CCC in

Gwyn Reedy, W1BEL—*photos by N6WR*

California DX record brought on by tropospheric ducting in December, 1994. Gordon described how the ducting built up to allow the record transmissions, and he also let us hear them in audio. Remember, this is a one-way record. You can be sure the principals will be alert to make it a two way record at the next appearance of tropospheric ducting.

Bill Parker, W8DMR, summarized the standing two-way ATV DX records, complete with maps of the paths and photos of QSL cards. The current record is 626 land path miles, K8AEH to K5YWL.

Dave Couch, KA8DPS, then showed us how much fun computer-generated video effects can be. If you're tired of the video effects you're seeing on commercial television, think how much fun they would be on your own ATV station, showing your own call sign!

Tom O'Hara closed the forum with a summary of how easy it is to get on ATV. If you're like most people, you already have the most expensive parts of an ATV station. A video camera or camcorder is the most expensive part of an ATV station. A cable-ready TV gives you a leg up on the receiver, because some of the channels used in ATV match the channels on the TV receiver. Make your plans now to attend Hamvention '96 on 17, 18, and 19 May! **WR**

Preamplifiers and attenuators

John B. Dillon, KH6FMT

Preamplifiers are frequently needed in the reception of signals from satellites and other sources. This is particularly true with older VHF and UHF receivers or inadequate antenna systems. However, the use of preamplifiers may introduce problems that defeat their purpose, resulting in considerable frustration.

One of the most frequently encountered problems is that of overloading the front end of the receiver with resulting distortion due to increased noise as well as signal, defeating the purpose of the preamplifier.

The problem is due to the fact that the majority of preamplifiers have too much gain. 20dB gain may sound fine

Figure 1. Various size annenuators for use between preamplifiers and receivers.

but noise, as well as signal, is amplified. The solution is the introduction of some form of attenuation between the preamplifier and receiver. Even if the preamplifier is placed at the antenna and 100 feet of RG-58 is used between it and the receiver, which I do not recommend, the attenuation would be only about 5dB at 145 MHz.

Most modern VHF and UHF receivers have very sensitive front ends. The ICOM 970A I use for Oscars is adequately sensitive so that I can receive Oscars 10 and 13 without pre-amplification with one 14 element crossed Yagi and 35 feet of RG-9913. But signals are not sufficiently strong to activate the "S" meter which is not satisfactory. I have not used other similar modern receivers but I am sure the same situation exists.

Many preamplifiers require power through a separate connector but ones such as the ICOM AG25 receive their power via the coax between the receiver and preamplifier. In the former case the insertion of an attenuator at the preamplifier's output is easy and allows for changes. However, when the preamplifier's voltage comes through the coax, a different solution is required.

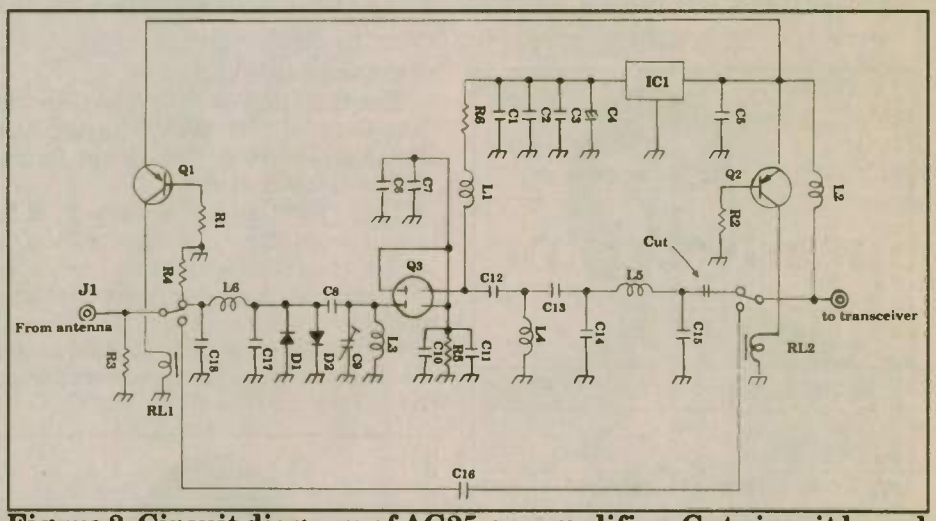


Figure 2. Circuit diagram of AG25 preamplifier. Cut circuit board between L5 and pin of relay. C15 is on other side of L5 and out of the way.

However, if I introduce a preamplifier, Hamtronics, Advanced Receiver Research, Landwehr or the ICOM AG25, which is recommended, the gain is so excessive that reception is unsatisfactory due to overload but the "S" meter is very active. This is totally unacceptable.

At one time, attenuators of various values were available through surplus outlets and may still be found. (Fig. 1). These are precision units. They cannot tolerate power being passed through them and must only be used on receive when used with preamplifiers such as Hamtronics and the basic Advanced Receiver Research units. The Landwehr and ICOM preamplifiers, as examples, have power-activated relays which permit use of the preamplifier during transmission but require that any attenuator be placed within the power bypass circuit if transmission is done with the preamplifier in place. This is never necessary with Oscar 10 and 13 activity since no transmission takes place on the two meter side. But the thoughtless use of a transceiver with an attenuator in place could destroy the unit.

Since I have an ICOM 25 preamplifier and its use as a preamplifier with the 970A was unsatisfactory because of too much gain, I took a look at its construction. It was found to be quite possible to isolate the preamplifier from the power-activated relay in the output and insert an attenuator (Fig. 2). The preamplifier may then be used for both reception and transmission. This cannot be done with the Landwehr.

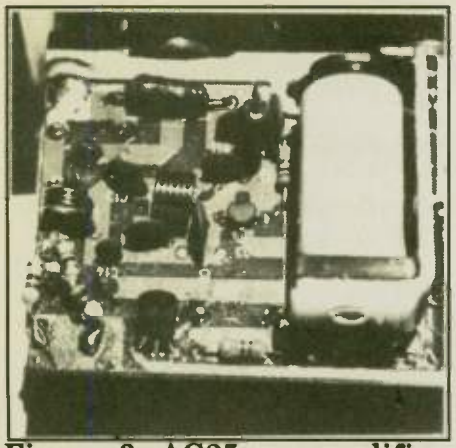


Figure 3. AG25 preamplifier with attenuator in place.

In the ICOM 25, it is practical to cut the center of the pad that connects L5 and the relay terminal and insert an attenuator (Fig. 3). The resistors have very short leads. I used a pi configuration because I like the symmetry of the device. I chose a 10dB level of attenuation which I find satisfactory.

Charts of the required resistor combinations are readily found in the ARRL *Handbook, The UHF Compendium* by Weiner and the *VHF-UHF Manual* by Jessop.

It is quite practical to construct attenuators which work satisfactorily (Fig. 4). What is required is a large assortment of 5% ¼-watt or smaller resistors and a reliable ohm meter. Even 5% resistors vary enough so that it is possible to find resistances close to the mathematical ideal. W6OVW was kind enough to add numerous resistors to my limited stock. **WR**

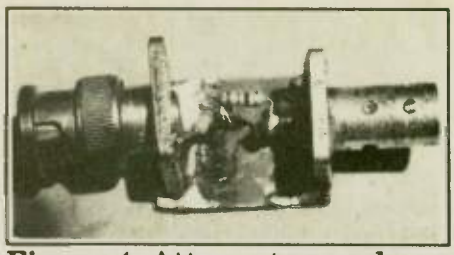


Figure 4. Attenuator made on small piece of circuit board.

Surprise vistor at hamfest

William L. Gorodetzer, K3MFI

The 21st annual hamfest of the Warminster Amateur Radio Club, Bucks County, Pennsylvania, was held at the Middletown Grange Fair on the seventh of May. It was a "personal best" for the club—the most profitable, the largest general attendance and the greatest number of vendors. Like most clubs, it needs a successful hamfest to cover the expenses of running the club; maintaining its repeater, participating in community service activities, and subsidizing programs. Dues only cover about half of the club's annual expenses.

But it will be most memorable because of a club "first"—perhaps an Amateur Radio first—a visit from a *real* ham who appeared in the early hours to get the hamfest off to an exciting start. The confused potbellied pig apparently wandered from a nearby farm and provided some great PR for the club as he greeted the first vendors early Sunday morning.

With some help from the Buckingham police, Don Swartzkoph, N3OZO, and hamfest chairperson Bill Gorodetzer, K3MFI, finally managed to confine the unexpected visitor to a make-shift pen in the building to be used for VE testing. Can you imagine club president, and VE testing liaison, Tom Michaud's face when Don took him over to the testing site and told him there was a "ham" already waiting who would need special arrangements for a code test? Tom was good natured about it and our visitor didn't utter an oink, just a few polite grunts, leaving the test attendees undisturbed, but with a great story to tell their friends about WARC's VE testing program.

Special "ham" guest (center) shows up early to take code test.

Although club members thought the little guy would make a cute hamfest mascot, there were no volunteers to take him home for the other 364 days of the year. The Grange people called a local farmer who owns a petting zoo who promised to give this true ham a good home if the owner could not be located.

The Warminster Amateur Radio Club, which is an ARRL Special Service Club, has over 160 members who are involved in all aspects of Amateur Radio. Members make a special effort to participate in community oriented projects by providing communications support for events that recently included March of Dimes walkathons; Special Olympics; Bike Tours sponsored by the American Lung Association, American Cancer Society and the National Multiple Sclerosis Foundation; community road rallies, 10K and fun runs; and, weather exercise and disaster drills testing the warning and notification systems for local agencies. **WR**

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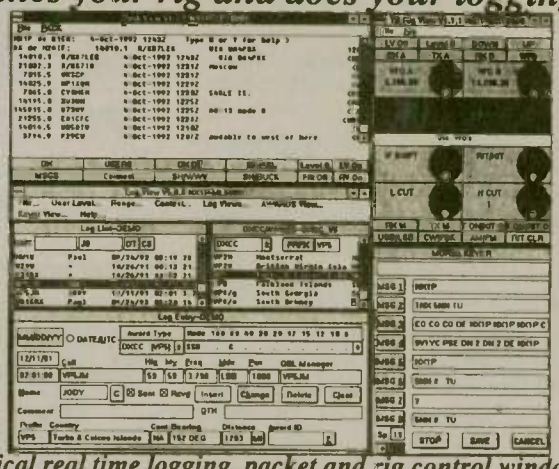

Typical real time logging, packet and rig control windows

Here's an overview of each program . . .

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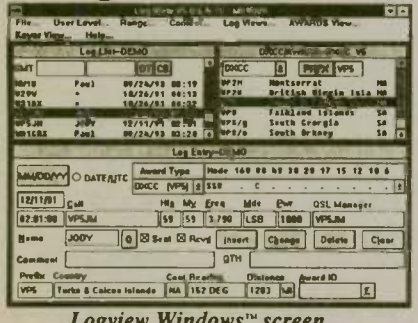

Logview Windows™ screen

Logview Windows™ is a live real time computerized logbook that gives you instant access to your data.

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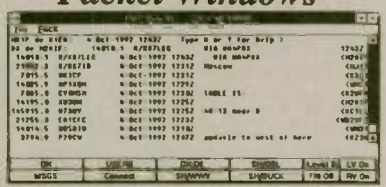

Packet Windows™ screen

Using *Packet Windows™* and your TNC to access DX PacketCluster™, you can display a list of current on-the-air DX stations.

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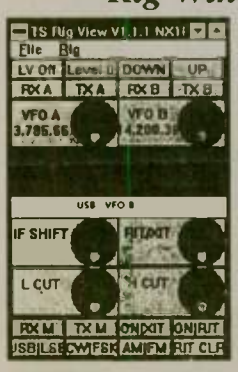

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For *Rig Windows™*, order **MFJ-1683K** for Kenwood, **MFJ-1683Y** for Yaesu and **MFJ-1683I** for ICOM, $29.95 each.

Requires MFJ-5383K/Y/I transceiver-to-computer interface cable below.

Transceiver-to-Computer Interface Cable has *RS-232 serial interface built-in!*

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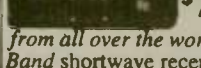

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Getting on the air in Venezuela

Thomas Ask, AC9L

Fresh coffee was handed to me as I settled into one of the waiting room's tan leather chairs. I eagerly accepted the delicious brew and was ready to wait a long time to see the Venezuelan official who would give me my reciprocal ham license. I had just finished panning across the walls of windows that reveled the bright green mountains which encircle Caracas when I was introduced to the radio licensing manager. With a friendly handshake he led me to his office. Fresh coffee was brought in and we were ready to conduct business Venezuelan style.

I was managing an oil exploration crew in southern Venezuela and while in Caracas on my leave from the crew, I got into an ancient Chevrolet with foot-thick doors and made my way to the radio communication office to get my YV2 call. I had worked with Venezuelan officialdom in my job with mixed results. Although "collaboration" fees are required by some petty officials in Venezuela, generally they have a wonderful style of business. It starts with warm hospitality and evolves into learning the nature and disposition of their guest. The introductory chit-chat lasts much longer than in the U.S. and a cordial atmosphere is quickly developed as you debate whether to invite your new friend over for Christmas.

Back in the radio office we finally got to business. I quickly got my license certificate and the radio licensing manager even paid for the fancy stamps that made it all legal.

Continuing our conversation, he tells me about some other "American radio people" from the U.S. He introduces me to them and it turns out they were with the U.S. Department of Commerce and were working on spectrum management. They were not too impressed at meeting an expatriate ham.

In trying to involve myself with the Venezuelan ham community—which I would not be able to do in my remote camp—I visited the Caracas ham radio club. There I was warmly greeted by the well-dressed crowd. Their "International Chairman," who spoke excellent English, immediately befriended me. We were seated in the front row and watched the whole proceeding. At the end of the meeting, new officers were installed. This procedure included the officers raising their right hands as they took an oath to comply with their assigned duties. A very formal and serious approach to ham radio indeed.

After the meeting, I was given a tour of the club station which consisted of the best Collins equipment available. I left my new-found friends, once again appreciating the fraternity of the ham radio community and the wonderful state of ham radio in Venezuela. **WR**

Book Review

Bill Meara, N2CQR/HI8

From Atoms to Amperes (1989) and *An Introduction to the Electromagnetic Wave* (March 1993) by F. A. Wilson, Bernard Babani LTD, London 1989. Available in the U.S. (paperback) from Electronic Technology Tody, Inc., P.O. Box 240, Massapequa, New York, 11762-0240.

When I was teenager studying electronics, I remember arriving at a very frustrating point where the material seemed to stubbornly defy any further "intuitive" understanding. As many times as I read the *ARRL Handbook* and other references, and no matter how well I mastered the formulas and the exam material, I still had a lingering, nagging feeling that I didn't quite really understand what was going on inside those transistors and capacitors. In my case, the matter-of-fact treatment given to "hole-motion" was especially irritating.

With this frustration as a backdrop, the advertisement for F.A. Wilson's book *From Atoms to Amperes* really struck a chord: "Have you ever... Thought the idea of holes in semiconductors is a bit much?" I was writing a check before the magazine hit the coffee table!

Mr. Wilson's book fully lived up to the promise of the advertisement. It is beautifully written in a very elegant British style. It takes the reader through an easy-to-understand review of the pertinent elements of physics and helps fills an important gap in ham radio literature: the gap between the theoretical physics textbooks and the more practical ham radio handbooks. The book brings Einstein into the ham shack and reminds us that when we sit down in front of our rigs we are indeed playing with the fundamental forces of the universe. The reader is given a very clear picture of where the limits of human knowledge currently lie —it would have been very comforting for me years ago to have known that nobody has a full, intuitive understanding of the electron.

The advertisement also offered *An Introduction to the Electromagnetic Wave* by the same author. This book provides a very useful examination of the phenomenon that is the heart of our hobby. Again, Mr. Wilson is merciful! He frequently reminds the reader that he is dealing with a very difficult topic that does not lend itself to easy, intuitive understanding: "Energy is Nature's prime mover in life, a quantity rather difficult to pin down."

There aren't many electronics books that begin with a quote from Tennyson, but Wilson's book on the electromagnetic wave does: "knowledge comes, but wisdom lingers." This is surely a good quote for those trying to really understand radio waves. I don't think that a true, deep understanding of this phenomenon can come from a reading of any single book — I think that the wisdom Tennyson and Wilson allude to can only come from a careful reading of a number of sources. Mr. Wilson's book certainly helped one struggling amateur (me!) get closer to real understanding.

Mr. Wilson has a great talent for taking extremely complicated material and explaining it to the nonphysicist. He employs mathematics in his explanations and those who have been away from math might find even his simple algebra a bit daunting, but I found that even without too much attention to the formulas, I was able to get a great deal out of the books. Both are very well illustrated with very helpful and illuminating drawings.

I think that both these works would be absolutely superb for those involved in using ham radio as an educational tool. They provide an ideal link between the ham radio club and the high school science and math classes. For all amateurs, they hold out the promise of the kind of scientific understanding that cannot help but enhance the enjoyment of our great avocation. **WR**

ITV...return to sender

Raymond H. Griese, K6FD

About three or four months ago I was in QSO with some friends of mine in the Pacific Northwest on the 80M band. Conditions were normal, noisy, crowded, with a lot of fading. Everything was normal and then all of a sudden it wasn't. I distinctly heard my own transmissions on the frequency from a few minutes earlier. The signal was weak and the quality wasn't too good but I could easily recognize my voice and the words I had spoken. I thought "if this is somebody's idea of a joke, I really feel sorry for them." Not wanting to encourage the joker I didn't say anything to the others but did comment "I think I hear some weak co-channel interference — do you fellows hear it?" They didn't. So I thought maybe it is just a mistake - maybe somebody is trying out a tape recorder and trying to find out if it can be re-transmitted.

Off and on for about three or four months I would hear this weak signal on frequency rebroadcasting my comments to the fellows in the NW. I still didn't say anything thinking that my silence would discourage whoever was having fun rebroadcasting me. I was now getting to the point where I was about to call the FCC and tell them of the trouble because I could imagine that the joker might decide to rebroadcast my conversations in some illegal manner. How should I act to protect myself from these broadcasts in the future if they were illegal?

A few days ago I was in the shack getting ready to listen to the bands and turned on the transceiver which was still tuned to the 80M QSO frequency. And there I was again—in broad daylight now. That meant the recording artist was nearby my own QTH. I was astonished to say the least. And then I became more astonished. I heard my wife change channels on the TV in the next room and the rebroadcast disappeared in the middle of a word. Now I was dumbfounded—amazed—stupified—you name it.

I went into the TV room and asked my wife "did you just now change programs?" The answer was "yes."

"Did you change from the VCR to the TV?" The answer again "yes."

I asked her to rewind the tape back to were she was when she changed from the VCR to the TV set. She did. You guessed it! The rebroadcast on 80M was from our own VCR and not from some joker as I had suspected.

Absolutely no chance of a mistake. I tried it several times.

Then the explanation came to me. The VCR records TV signals. The TV signal is an amplitude modulated signal that extends from a few hundred kHz to about 5 or 6 MHz. And our 80M ham band is in the middle of the VCR's frequency range and that is why it happens. It had picked up enough signal to record on the tape with sufficient level for me to hear it on the receiver in the next room. Well, I heaved many a sigh of relief as you can well imagine. It's not a jammer — it is ITV. Television interference returned to the sender !

I began to wonder—"am I the first amateur to experience ITV?" Seems hardly possible but I have never heard of this before. **WR**

20th Anniversary celebration in Pottsville

Andy Catchmark, N3LBM

The Schuylkill Amateur Repeater Association, Inc., celebrated its 20th anniversary in March, 1995. Since 1975, the Schuylkill ARA, Inc., has provided Amateur Radio operators in Schuylkill county and surrounding communities in Pennsylvania with excellent repeater coverage. In addition, during the twenty years the membership has been involved in numerous community activities and public services.

To celebrate this occasion, a party was held by the membership at the Yorkville Hose Co. in Pottsville, PA.

Bottom row (left to right): Charter member Francis Hillibush, K3KVK; President Gary Fleishut, KA3FUL; and charter member John Smith, K3SLJ. Top row (left to right): Treasurer Harold Kunkel, N3HHG; Vice President Andy Hitzel, N3HHH; Secretary Bill Dale, WY3K and Public Relations officer Andy Catchmark, N3LBM. **WR**

Wherefore art thou, QSL?

Richard A. Genaille, W4UW

Prologue

Much has been written about the "why" of sending QSL cards and most of us involved in the various award programs sponsored by the ARRL, by *CQ* and other groups around the world have been QSLing for years. So what's the big deal about QSLing you say? You can take it or leave it! Unfortunately many of the award programs require that QSL cards be submitted for verifying contacts or, if not submitted, be available if the program award manager wishes, to see a particular card.

Some awards require only that log entries be verified by two or more officers of the radio club of which you are a member. However it is done, some sort of credible confirmation must be submitted. Those hams who are "hooked" on award programs such as DXCC, WAS, WAC, WAZ, WPX etc., all of which have varying degrees of difficulty in attaining, gain a certain amount of self-satisfaction as well as prestige among their peers. In all cases these awards attest to the diligence, knowledge, skill and patience of the operators who pursue them. Award programs have become an important part of ham radio.

A trend

The purpose of writing this article is to point out what seems to be a trend in the percentage of returns for the number of QSLs sent and to suggest, to the award sponsors, that the time has come to revamp the requirement for submission of QSL cards by substituting alternate forms of confirmation or suffer a serious reduction in the amount of participation in their various award programs.

Articles continue to appear, in various publications, purporting to provide one with all one needs to know about QSLing. I don't see many statistics to corroborate the suggestions. I have been QSLing for over 50 years via the bureaus, direct with SAEs or with SASEs and IRCs or "greenstamps," ad infinitum. I have used the same QSL card for many years but my newest batch of cards has had the "brag" lines removed so as not to "touch any raw nerves" on the part of other operators. No longer do I advertise DXCC, WAC, WAS, WAZ, WPX etc., on my cards. I am also considering the deletion of any mention of my station equipment. QSLing is not working as well as it used to and I have the statistics to prove it. I believe that individual operators are part of the problem.

Computerized logging was put into operation in my shack in January, 1987. The computer has made it very simple for me to keep track of contacts and all the pertinent details of the contact including the method and route by which my QSL was sent. It also enables me to print QSL information regarding the stations who have not responded, as well as tracking the total investment in postage and donations. This has prompted me to call attention to the problem.

During 1987 through 1989 I operated quite heavily, being active in a number of award programs sponsored by ARRL and *CQ*. I was also working on a variety of miscellaneous awards such as the former Soviet Union's R-100-O Award (oblasts), the South African Radio League's All Africa Award, the Hong Kong Amateur Radio Transmitting Society awards and a number of others. Figure 1 should give you a feel for the volume of activity during the seven year period from 1987 through 1993. The peak year was 1989, with a total of 1,272 contacts. It was a "hump" year so-to-speak. After 1989, I was able to slow down considerably. By 1990, I had reached some of my award goals and had some additional paper and plaques to decorate the walls of my shack. In 1991, I decided to bring up my CW total and my overall activity started to pick up. I also got curious about responses to QSLs. A simple spreadsheet program provided me with some interesting information.

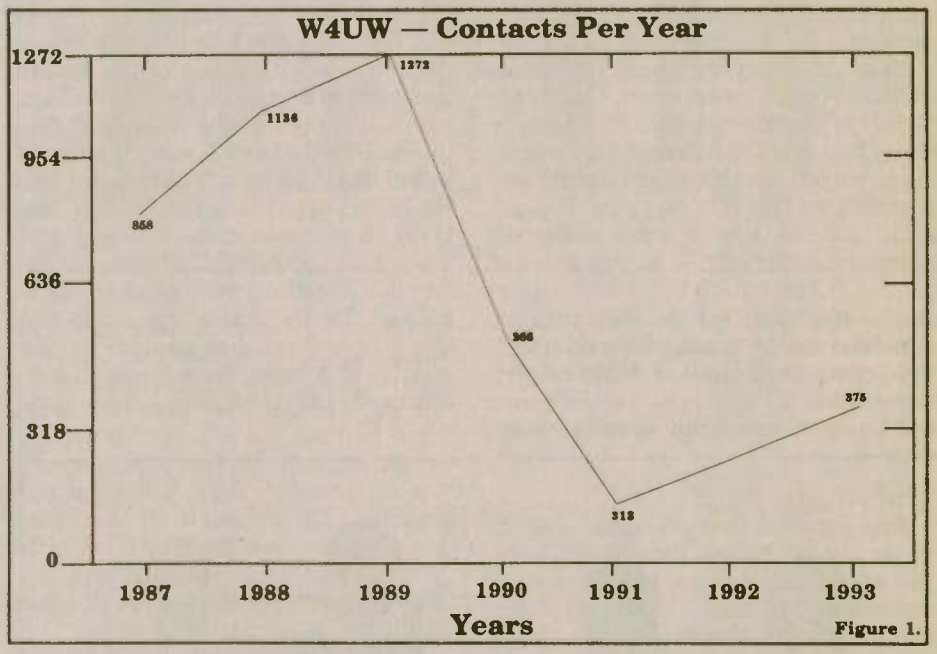
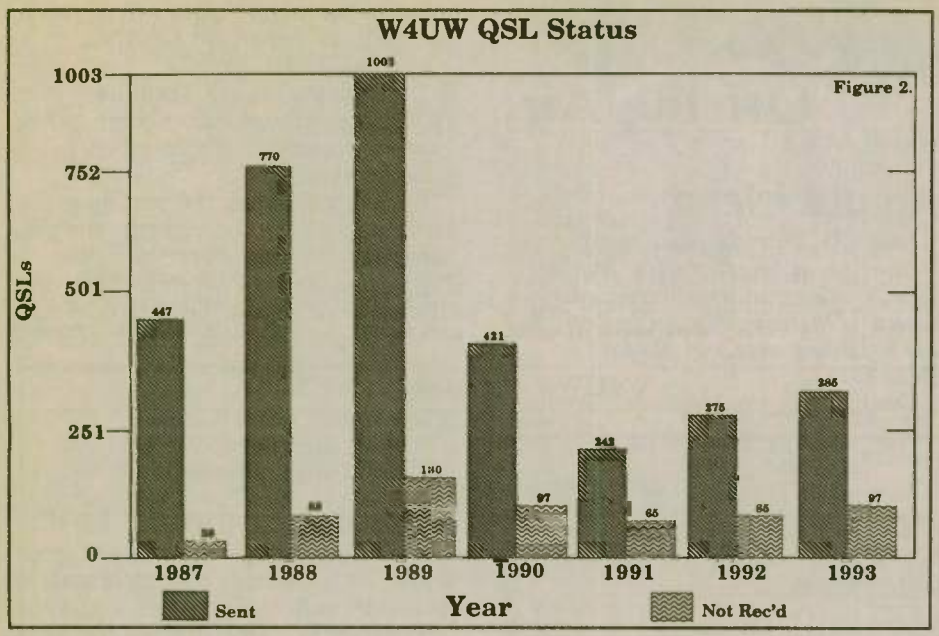


Figure 1.

Figure 2 shows the volume of QSLing that was done during the seven year period. Over 1000 QSLs were sent out during the year 1989. Compare the number of QSLs sent versus the number not received. The percentage of cards sent to those received was quite satisfactory. But, notice the percentage of returns from 1990 through 1993. The trend is not very encouraging, is it? In 1989, for the 1000 cards sent out, 823 received responses. In 1993, of 285 cards sent out the response was only 188. Why has the percentage of returns taken such a downturn?

Not receiving the QSL cards that I need is only one of the problems that bothers me. Not including the cost of the QSL cards and the envelopes, I have somewhere in the neighborhood of $500 floating around and doing me no good. That's enough for me to purchase a TNC, an antenna tuner or



some other gear for the shack that I can amortize by putting to good use. I once considered the cost of QSLs and the sending of them as part of the game but lately I am beginning to have my doubts.

The sting

Just because someone doesn't QSL doesn't mean he is a deadbeat. There are any number of good reasons why someone just doesn't QSL and we should respect those reasons. There are good reasons why a QSL is not returned promptly, for example poor health or some serious personal problem. Not all of the "no returns" can be blamed on these reasons, however. Well, let's try mail pilferage. In this day and age we hear many stories about mail theft not only in other countries but in our own country as well. Not all of the "no returns" can be blamed on this reason either.

It is slowly becoming obvious that there are many who have decided to make money from not QSLing! Your money that is. I would prefer to be considered as W4UW and not W$UW or Santa Claus! Let's consider the individual to whom you make "donations" of SAE, SASEs, IRCs, "greenstamps" or whatever. I have had a chap tell me that he didn't have any QSLs but if I would draw one up with all of the information and send it to him he would sign it and send it back to me. That was when the last WARC band was opened up. I'm still waiting for the card.

Another chap asked for the same thing and I received a quick turnaround. An operator in the Caribbean was worked on RTTY for a new country. About a year later I worked him again and asked if he had ever sent the QSL for the first contact. He informed me that he was still waiting for his printer. Another operator must have had the same luck because my screen printed out, "He tells everyone the same story! You'll never get one from him!" How about that? More than one of us has been "had" by this Caribbean cardshark! I think there are many more stories that can be told that would be familiar to all of us.

I think these stories should appear in print! There are many operators who do not have the courtesy, honesty, self-esteem and good sportsmanship to send you back a QSL. After all, when you QSL direct and provide him with an envelope and adequate postage or financial assistance his costs are probably well covered, you don't have to be too smart to figure out that if some conniver, in a location of little activity, gets busy some weekend and works a few hundred contacts he can clear a couple of hundred bucks for his efforts and some of it is out of your pocket! Unfortunately, the U.S. has its share of deadbeats, but the stateside guy isn't as bad. He only pockets a 32 cent stamp and an envelope. Great for paying his bills but not so great if you need his QSL! There are not many good excuses for not QSLing.

Epilogue

While I seem to have dwelled more on individual operators it is because they generally require direct QSLing. Remember that bureau QSLing works only if an operator's location is in a country served by a bureau. If he does not belong to an organization which provides him bureau service, then the direct route is the only way possible to send him your QSL. Direct QSLing is usually quite successful with legitimate Dxpeditions or other sanctioned operations or the operations of those stations for which a QSL manager is available.

We need help from the people who make QSLing a necessity! Announcements of all sponsored, award oriented contests, sweepstakes, Field Days and whatever should not only specify the usual rules for scoring and log deadlines but also a statement encouraging participants to QSL, reminding them why. Contest exchanges could be arranged to indicate by a single letter, such as "Y" for Yes and "N" for No, whether or not the participant will QSL. If he indicates "Y" and reports from a sufficient number of other participants indicates that he fails to respond, after a reasonable period of time, to SASEs or SAEs with IRCs or "greenstamps," the contest and/or the award sponsor should consider disqualifications or handicaps being applied to future submitted scores or other submissions. If he indicates "N" others would have the option of working him or not, as they choose, and save them the time, trouble, and money of QSLing that individual. A contestant who does not follow up on his promise to QSL could be considered to have exhibited poor sportsmanship and his scores should be considered questionable! Many of us are dependent on contests for help, especially when some of the "hard-to-gets" come out of hiding.

Another possible solution might be for the contest sponsors to provide, for a nominal charge, copies of the logs

range for the award managers to accept the log copies as verification of contact. Instead of wasting time and money in sending out QSLs to these overly busy operators I would rather send a buck or so to the contest sponsor for copies of specific scoring logs. Multiply a reasonable sponsor charge by the number of frustrated QSLers and I think that the contest sponsor could more than offset his cost and make frustrated participants happy.

Alternatively, but at more effort, the contest sponsor could send out a surrogate card that would be acceptable verification. It seems to me that whoever sponsors the various contests and operating events has a vested interest in supporting their own award programs by helping those who continue to participate in these activities. Good operating skills, techniques and state-of-the-art equipment can help many of us in our pursuit of the many available awards. How about some help before poor or no QSLing results in a loss of interest in the award programs simply because we cannot get needed QSL cards in a timely manner or at all? It would be a shame for eager hams to drop out of award programs because when they do there will be subscriptions to magazines, DX bulletins and QSL manager lists cancelled because they will be of little or no use to them if the QSLs dry up! And, they probably will not need any more QSL cards or *Callbooks™*!

Some good ideas anyone? Or, should DXCC, WAC, WAS, WAZ, WPX and the many other awards dry up and fade away? **WR**

Off the Air

An old friend

Recently ***Worldradio*** *heard from long-time subscriber Roy McCarty, W9KA. Along with his check for renewal of his subscription he included the following note and photo.*

Dear ***WR***:

Enclosed is my check for another year of ***Worldradio*** and a picture of my rig.

Roy, W9KA, at his QTH

Not much of a ham station, one hundred watts and an indoor dipole antenna. I am lucky to operate at all. I'm 87 years old and live in a large retirement community.

In the picture, the large certificates on either side of W9KA are the original station licenses for 9KA, Dec. 1926, and 9BA, Feb. 1927. The certificates above the ARRL plaques are original operator licenses.

9BA was the license of my YL who later became my XYL. We did not have W9KA and W9BA until late 1928. She gave up the hobby after a few years, but we have grown old together.

I joined ARRL in 1924, two years before I got my license. I now have over 70 years continuous membership. No, I never became a life member, but I should have.

You might find this interesting — the certificate at the top right in the picture was for membership in the "I Tappa Kee Radio Fraternity." My certificate was signed by J.R. Meloan, 6CGM, and Kenneth Isbell, 6BOQ/6AMR. They are not in the *Callbook™* now.

It has been a great hobby!

Roy W. McCarty, W9KA
Boca Raton, Florida

Amateur Radio on Line

Receiving ***Wordradio*** is always a treat. Your articles are informative and interesting. On page 9 of your May issue, it states that we can send in information and news, so I thought I would share this information.

At my son's request, I now subscribe to America OnLine (AOL). Other than sending e-mail to my son in Missouri, I couldn't imagine any other use for the service. While exploring, I found that there is an Amateur Radio forum on AOL. The host is Terry Stader.

Some categories or services offered are listed below.

Conventions and special events
Conference Center
Software exchange
Message center
Swap and sell equipment
ARRL reading room
National Contest Journal
Packet Radio
Shortwave Radio
Call sign updates
Ask the experts

I took advantage of the "swap and sell" category. I hope now that someone will need what I'm selling.

Ham radio buffs have found another way to communicate and that's great. Another new toy to enjoy!

Sharon Anne Vaughn, N8YOI
Linwood, Michigan

Editor's note: Many of the computer services have Amateur Radio categories—check out the various servers. Happy exploring!

Awards

ARRL Atlantic Division awards

Kay Craigie, WT3P

The following awards were presented at the ARRL Atlantic Division Convention, held in conjunction with the Rochester, NY, Hamfest on 19 May 1995.

Amateur of the Year

The 1995 ARRL Atlantic Division **"Amateur of the Year"** is Kenneth Botterbrodt WA2CVJ, from Marlton, New Jersey. An active member of the South Jersey Radio Association, Ken also serves as ARRL Assistant Section Manager for Youth Activities for the Southern New Jersey Section.

Ken's enthusiastic presentations and hands-on demonstrations in schools have interested many youngsters in ham radio. After a brief talk from Ken about ham radio and its relation to geography, the kids are encouraged to get on 40 Meters and 2 Meters for QSOs. Ken has arranged television coverage for ham radio via the Lenape High School Television Network, a cable TV channel operated by the local school district.

In addition, Ken and his assistants put on many special event stations for community activities such as the Medford Apple Festival and the Chatsworth Cranberry Festival. The operators at these events are frequently young amateurs, who do a good job of demonstrating and promoting Amateur Radio. He even helps Jaggard Elementary School in Marlton put on their own Field Day in early June, while classes are still in session. Some of Ken's youth projects are illustrated on page 12 of the April, 1995, issue of *QST*.

While at the convention to receive his award, Ken took the opportunity to pass his Extra class license examination!

Grand Ole Ham

Recognizing lifetime service to Amateur Radio, the **"Grand Ole Ham"** award may be conferred upon Atlantic Division OMs and YLs who have been licensed at least 30 years or are at least 50 years of age. The 1995 "Grand Ole Ham" is Donald E. Wagner, W2QFC, from East Aurora, New York.

Licensed at the age of 14, in 1934, Don took part in the 1935 ARRL Trans-Oceanic 80 Meter tests and worked two European stations. Working Europe on 80 Meters was an astonishing feat back then, especially for a teenage boy.

Over the years, Don has been active with several radio clubs; most recently, he has helped promote the growth of the Pioneer Radio Operators Society and has served that club as president and vice president.

As a member of the Army Signal Corps, Don took part in the 1944 D-Day invasion of Normandy at Utah Beach. A few years ago, he helped found the Association of D-Day Utah Beach Radio Amateurs, which has an ongoing relationship with French hams in Normandy.

Don is a published author of ham radio articles, a respected Elmer, and a life member of the Niagara Frontier Chapter of QCWA.

Technical Achievement

The 1995 Atlantic Division **"Technical Achievement"** award has been presented to Tim Duffy K3LR, from West Middlesex, Pennsylvania. This award recognizes outstanding technical accomplishments in any field of Amateur Radio.

President of the Mercer County Amateur Radio Club and active with the North Coast Contesters radio club, Tim currently serves the Atlantic Division as representative on the ARRL Contest Advisory Committee. He moderates the antenna forum at Dayton and was formerly the moderator of the contest forum at the Hamvention™.

Tim designed and maintains the K3LR contest station, a center for multi-multi contest efforts each year. He has published technical articles and frequently gives speeches on RFI, antennas, and contesting. Tim has often helped other hams solve their technical problems, from RFI to equipment and tower difficulties.

Licensed since age 12, Tim is now 36 years old and employed as RF engineering manager at Wilcom Cellular in Youngstown, Ohio. He is also president of LTA Industries, making antennas for commercial and amateur users and publishing the NA contest logging software. Tim and his wife expect their first child later this year.

New CLARA certificate

The Canadian Ladies Amateur Radio Association (CLARA) is pleased to announce a new certificate, its fourth. Here is a current list of the available certificates.

Number 1 - CLARA Certificate

* CLARA members work 12 YLs in 6 Canadian call areas (limit 5 VE3).

*Other YLs and OMs in Canada work 10 YLs in 5 Canadian call areas (limit 4 VE3).

*DX stations including U.S.A.; work 5 YLs in 3 Canadian call areas (limit 2 VE3).

*Use all bands and modes. All QSLs dated12 Sept1972 or later may be counted.

*Canada and U.S.A. please send $3; all others please send $4.

*An endorsement is available for each set of 5, 10 or 12 Canadian contacts. Again, please send a copy of your log and $2.

Number 2 - YL DXCC Certificate

*Work YLs in 100 different countries. Use an approved DX country list.

*Open to all YLs and OMs. QSLs must be in your possession and your log must be verified by one other currently licensed amateur.

*Canada and U.S.A. send $3; all others please send $4 plus a copy of your log to the CLARA Certificate Custodian.

*An endorsement is available for each additional 10 countries. Send $2 and a copy of your log sheet.

Number 3 - CLARA Family Certificate

*Families must reside in Canada.

*Work two or more members of the same family (they need not live at the

same address) to get family credit.

*Use all bands and modes. All QSLs dated 1 Jan 1975 or later may be counted. Logs must show the full names and relationships of contacts.

*You get 1 point for the first family member, and 2 points for each additional member worked. Remember you must work 2 or more from the same family. Twenty two points are required for the certificate.

*Canada and U.S.A. send $3; all others $4 plus a copy of your log sheet to the CLARA Certificate Custodian.

*An endorsement is available for each 22 points earned. Please send a copy of log and $2 for endorsement.

Sample: CLARA member (Diane Ernst VE1YL) - 1 point

Member's husband (George Ernst VE1GV) - 2 points

Diane's mom-in-law (Amy Ernst VE1AMY) - 2 points

TOTAL - 5 points

Number 4 - CLARA Ten DX Contacts Certificate

Work 10 YLs in different countries. Use an approved DX country list. Open to all YLs and OMs. All QSLs dated 1 Jan 1990 or later may be counted.

An endorsement is available for each additional 10 countries. Send $2 and a copy of your log sheet. WR

SPECIAL EVENTS

Flat Hammock Island

For only the ninth time in history, Amateur Radio is going to Flat Hammock Island. Tri-City ARC will mount his year's expedition on 20 August and will operate from this unique, uninhabited island from 1300Z to 2000Z. Look for KA1BB in the lower 20 kHz of the General class phone and CW bands — 20 and 40 Meters. QSL with letter size SASE through Tri-City ARC, Box 686, Groton, CT 06340. For further information, please contact: Bob Darge. KA1BB, 8 Willow Lane, East Lyme, CT 06333-1526; 203/739-8016.

Schuylkill County Fair

The Schuylkill ARA will operate a special event station 6-12 August, to celebrate the week of the Schuylkill County Fair. SARA's special event station will use the individual operator call sign with a suffix of "Schuylkill County Fair" or "/SCF" if operating CW. Operation will be both phone and CW in the Novice and General subbands. For a certificate, please send an SASE to: N3ILC, Ed Brennan, 520 Spring Garden St., Pottsville, PA 17901.

Old Threshers Reunion

The Mt. Pleasant, Iowa ARC will be operating WØMME, 30 August through 4 September during the Midwest Old Threshers Reunion. Operation will be in the General portion of the 80-10 Meter phone bands.

Visitors attending can reach the station through club repeaters on 147.39(+) MHz and 444.95(+) and are encouraged to visit the ham shack and sign the guest register. Last year, 189 visiting hams from 18 states signed in.

The Old Threshers Reunion is an established celebration of our rich agricultural heritage that attracts visitors from across North America. It features hundreds of operating steam engines, antique tractors, gasoline engines, antique cars and trucks, a log village, electric trolleys and steam trains.

For a QSL card, send an SASE to Dave Schneider, WDØENR, 1675 Old Highway 34, Mt. Pleasant, IA 52631-9580.

APCO Annual Conference

The Michigan chapter of APCO will sponsor K8DD, 12 August, 1400Z to 13 August 0200Z and 13 August 1400Z to 14 August 0200Z, to commemorate the 61st Annual Conference of the Associated Public Safety Communications Officials —International, Inc. (APCO) from the location of the original Detroit Dispatch. SSB frequencies will be 3.910, 7.272, 14.272, 21.312, 28.393 (CW contacts on request). For a unique QSL, send QSL and a business size SASE to Detroit Dispatch Special Events Station, Box 611230, Port Huron, MI 48061-1230.

Antique Aircraft Fly-in

The Clark County ARC, W7AIA, will again set up a Special Event station at the annual Northwest Antique Aircraft Fly-in, at Evergreen flying field, just east of Vancouver, WA. This event will take place the weekend of 19-20 August. Operation will be in the lower portion of the General class band on the 80, 40, 20, 15, HF bands and 2 Meters, 146.52(S) for local contacts. Local repeater 147.87(-). For a certificate, send QSL and #10 SASE to: CCARC, P.O. Box 1424, Vancouver, WA 98668.

Erie County Fair

The Firelands ARC will operate WB8LLY 8-13 August, 1500-2400Z from the Erie County Fair. Operation will be in the General 40, 20, 15 and 10 Meter subbands. For certificate, send QSL and a 9 x 12 SASE to FARA, P.O. Box 442, Huron, OH 44839.

Naval Security Group

Fleet Radio Pacific (FruPac), the Amateur Radio operators of the Naval Cryptologic Veterans Association, will operate N3GKE, on 20 August, 1400Z to 2000Z from 3801 Nebraska Ave. This commemorates the move of Naval Security Group headquarters from Washington to Maryland. The frequencies will be those normally used by FruPac on their daily schedules, 7.234 MHz, 14.243, and 21.375 ± QRM. A beautiful 9 x 12 certificate will be issued to all who make contact and send QSL and SASE to NU3D, 7801 Overhill Rd., Glen Burnie, MD 21060.

National Lighthouse Day

The Old Barney ARC will operate special event station W2OB, on 5 and 6 August from 1200-2300Z to celebrate National Lighthouse Day at "Old Barney" on Long Beach Island: IOTA, NA-111 in Barnegat Light, New Jersey. Frequencies will be: CW—7.040, 14.040; SSB—7.250, 14.280, 21.380, 28.380; FM—146.52(S), 146.835 repeater and other area repeaters. QSL via Joe Fleishinger, NU2F, 75 Joshua Dr., Manahawkin, NJ 08050. Include either an SASE for QSL only, or a 9 x 12 SASE with 2 units of postage for a certificate and QSL.

Wings of Eagles Airshow

The Genessee Radio Amateurs will operate W2RCX on 19 and 20 August, 1300 UTC to 2100 UTC to celebrate the 15th annual "1941 Wings of Eagles Airshow" being held at Genessee County Airport. Operations will be on 40 Meters, 7.250 ± 20 kHz and on 20 Meters 14.250 ± 20 kHz. For certificate, send QSL and 9 x 12 SASE to GRAM, P.O. Box 542, Batavia, NY 14020.

Trainfest

The Northeastern SD hams will operate 12 and 13 August, 1400-0200Z, to commemorate the 11th Annual Trainfest in Milbank, South Dakota. Operation will be in the General phone 20, 40, 40 Meter bands and the Novice 10 Meter band. For certificate, send QSL and a 9 x 12 SASE to: KAØUEQ, Jim Thomas, 606 S. 6th St., Milbank, SD 57252.

Lum 'n Abner

The Ouachita ARA will operate AC5BI/5 3-

5 August, from 1300-2200Z, to commemorate the 64th Anniversary of the 'Lum 'n Abner' program from the hayday of broadcasting radio. Suggested frequencies are the lower 25 kHz of the General phone bands of 75, 40, 20, 15 Meters and 28.435 MHz. For special QSL, send QSL and #10 SASE to: AC5BI, Jack Brewer, 268 Polk 36, Hatfield, AR 71945.

Duluth Folk Festival

The 48th Annual Duluth International Folk Festival will be held on 5 August. Special event station WAØQIT will be on the air from 1600-2100Z from Bayfront Park in Duluth, on 14.255 MHz ± QRM. QSL with 9 x 12 SASE, or #10 envelope for folded certificate to: ARS—WAØQIT, 123 S. 65 Ave. W., Duluth, MN 55807.

Coast Guard

The Raritan Bay Radio Amateurs will operate N3CG from the Sand Hook Coast Guard Station from 1800Z 5 August until 1800Z 6 August, to commemorate the anniversary of the founding of the Coast Guard. Operation will be in the lower portion of the General 80, 40, 20 and 15 Meter CW and Phone subbands; and on K2GE/R 146.76(-) and 443.200(+). For a special commemorative QSL card, please send your QSL and a regular SASE to RBRA, P.O. Box 173, Sayreview, NY 08872. QSL cards to foreign stations will be sent immediately via the ARRL Outgoing QSL Service.

Herkimer County Fair

The Fort Herkimer ARC will operate KBUYI on 19 August, 1400-2200Z, to commemorate the annual Herkimer County Fair. Operation will be in the General portion of 20 Meter phone and on 40 Meters, the Novice CW portion and General CW and phone portions, and 2 Meter packet. For a certificate, send QSL/SWL and a 9 x 12 SASE to KB2UYI, John Reed, 617 Jeffrey St., Herkimer, NY 13350.

Mt. Davis

The Somerset County ARC will operate station NJ3L from the highest point in Pennsylvania at Mt. Davis. Operations will be 12 August beginning at 1700Z and ending 13 August at 2000Z. Operation will be on the lower 50 kHz of the General class phone bands of 10-80 Meters as conditions allow. For a certificate, send QSL and SASE to NJ3L, Dudley Daniels, R.D. 7 Box 270, Somerset, PA 15551.

Spare yourself the embarrassment—read the manual

Ann S. Shaver, WH2E

Long ago I grew immune to my own efforts to embarrass myself—or so I thought. Recently, however, two separate incidents made me realize I'm still vulnerable.

I was sitting at the Board of Directors' Meeting of our local radio club not long ago when my HT started playing the opening notes of "Ode to Joy." Everyone turned, stared and asked how I did *that*. I looked around, too, and muttered something about bandits playing music on the repeater. Unfortunately that excuse

...my HT started playing the opening notes of "Ode to Joy."

didn't convince anyone because everyone else had an HT tuned to the same frequency and only mine was singing.

A few days later I took another HT—fortunately still under warranty—back to the local "candy store." "It won't take a charge," I explained to the repair technician. He agreed to test it to see if it were something simple before sending it back to the factory. He telephoned me the next day to report that he had had no trouble charging it; but to be sure, he would drain it and try to recharge it again. When he called me back the following day to report that everything seemed to be working well. I muttered something about the "technician-present phenomenon" and picked it up, wondering if I were truly crazy.

No, I'm not crazy, it turns out; just incredibly lazy. In both cases, the problem could have been avoided if I had bothered to read the instruction manual. It seems HT Number One plays a tune to warn the user that the power-saver mode is about to kick in and turn the unit off after a period of non-use. Had I bothered to read about all the wonderful features before using the HT (for 2 years!), I could have proudly taken credit for the classical concert.

The problem with HT Number Two is even more embarrassing. It turns out the snazzy leather case covered the lettering labeling the speaker and mike receptacles, making it appear that the speaker jack was the recharging socket. No wonder it wouldn't take a charge—I was plugging the adapter into the wrong place. A normal person would have been chagrined; instead, I just giggled and reminded the technician that the Christmas turkey he had shared with us was tasty and if he wanted future invitations, he better not laugh at me.

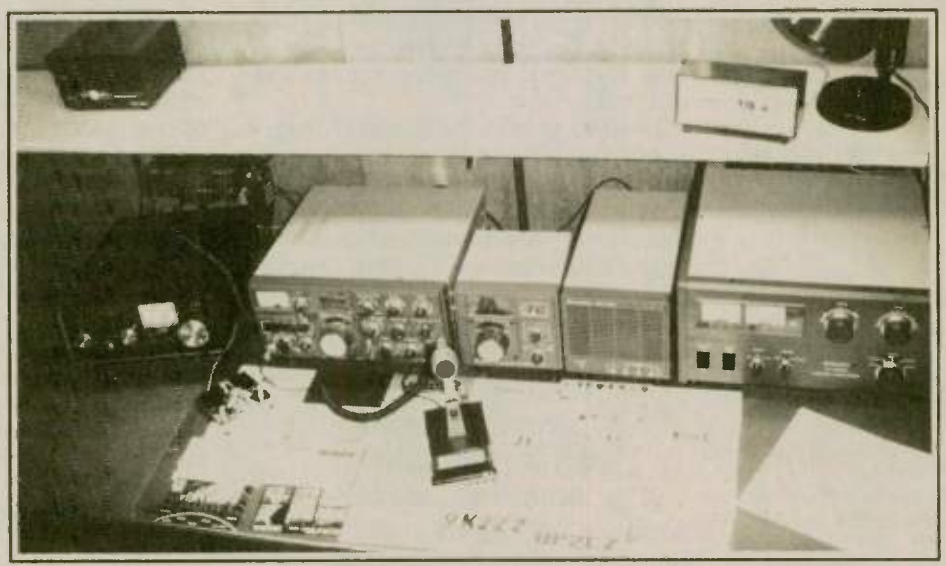
So, there you have it. Either read the instructions that come with your radio equipment or learn to cook! Either one will make you a welcome addition to your local radio club. **WR**

YOUNG HAMS: Send in your news, features and ideas. . . let your voices be heard in ***Worldradio!***

STATION APPEARANCE

Raymond A. Allard, K1MFZ

*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.*



Little did I or my Scoutmaster realize that a Boy Scout merit badge would stimulate a life-long love and hobby. But it did. It was 1959 and I was only 12 years old. I was fascinated by learning Morse code for my badge. Advancement, for me, now meant learning everything I could about radio and radio transmission. I was hooked!

I received my Novice ticket in September, 1959, and set up my first station. It consisted of a Heathkit DX-20, an RME 45 receiver, and a 40 Meter dipole antenna. While my fellow scouts set their sights on Eagle, I set mine on Extra. I finally passed in August, 1994 — after 35 years.

My station from left to right top shelf - supply for Yaesu FT-2200 2 Meter transceiver (under top shelf) utilizing an ARX-2 vertical at 25 feet; an MFJ-989C tuner; a Bencher Iambic Paddle; a Kenwood TS-820S transceiver; and a Kenwood TL-922A amplifier. Other antennas include the G5RV inverted "vee" at 50 feet and a Cushcraft R-5 vertical. I have added a Kenwood TS-850S/AT transceiver and an Ameritron amplifier since this photo was taken.

Over the years, many members of my family have become involved with ham radio and have held Amateur Radio licenses. My brother Dave, KD1PW, and his wife Jody, N1TEA, are very active on the ham bands.

My radio shack is located in the basement of my home in Pawtucket, RI and I'm usually there in the evenings relaxing.

Besides being a member of the ARRL, the QCWA, and a VE, I have earned my WAS, WAC and DXCC awards. During my 35 years of ham radio, I have participated in many contest and Field Day operations, but my greatest two wishes are the licensing of my XYL (whom I began dating in the 7th grade) and to be part of a DXpedition some day! **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 monthly AMATEUR "HI" contest. You could win a free year's subscription to **Worldradio!**

A good Samaritan

Pete Hardiman, N7DUC

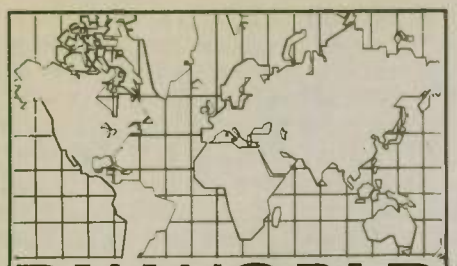
The year was 1946, I had returned from Europe, 8th U.S. Army Air Force, and was serving with the Virginia Air National Guard, also attending the University of Virginia, and deeply interested in Amateur Radio, operating W4UVA while studying for my license.

A good Samaritan ham in Richmond, Virginia, took me under his wing helping to get me to understand the protocol and regulations of FCC, meanwhile I helped him build a W8JK flopover antenna of open wire. We got it up, attached to his chimney and to a pole across the yard. It was a 10 Meter version nice and small, easy to handle. We turned on the transmitter and tried loading up the W8JK but there seemed to be a dead short. Taking the transmission line off the rig, we attached a short open line with a light bulb which lit up very well as we tuned the final. We then took the light bulb up on the roof and disconnected the feeders from the antenna and connected the light bulb to the end of the feedline.

Upon trying the transmitter we saw the bulb light up, so called "testing, testing" and signed his call. Back came the reply "can I help with a report?" It was a W5 in Texas!!! We continued to work stations including W1, W4 in Florida and a W8 in Ohio, all on this light bulb vertical feedline!? After connecting the antenna back up, we found that it worked well (and was still in service when I left for Korea in 1951) along with a 20M version!

Right now I have a 300-ohm W8JK cut for 15M eagerly awaiting conditions to return to normal. Building it recently reminded me of that strange happening back in 1946! **WR**

MAYBE I SHOULD LEAVE SOME OF THE UHF HANDHELDS AT HOME



DX WORLD

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

W-100-N

Congratulations to the following DXers for completing the necessary requirements for ***Worldradio's*** *Worked 100 Nations Award*:

493. Walter L. Lototski, Jr., WA1MKS, 04 May 95
494. William H. Kirk, W6RQQ, 04 May 95
495. Charles H. Bilharz, WZ3E, 04 May 95
496. Adrian E. Clark, W2PDH, Jr., 25 May 95

Walter, WA1MKS, managed to work the required nations all on 20 Meters, SSB, while Charles, WZ3E, worked his on 10M, SSB, QRP style.

I am still receiving W-100-N applications that are copies of DXCC applications. Please use the new ***Worldradio*** application forms, available from headquarters, 2120 28th Street, Sacramento, CA 95818. Please provide an SASE.

Nigeria (5N)

According to *Long Skip*, 5N3/SP5AXR should now be back in Nigeria until about September. Try 14.226 MHz after 2200 UTC. On RTTY, 5N5FSR has been busy pleasing the DXers. Try 14.087 MHz after 2330 UTC and 21.087 MHz at 2000 UTC. WARC band activity includes 5N3ALE near 18.148 MHz at 1230 UTC. Several calls were found on the 20M band and includes the following:

5NØAIP	14.010 MHz	2300 UTC
5NØJHE	14.292 MHz	1800 UTC
5NØSAI	14.170 MHz	2145 UTC
5N1DMA	14.210 MHz	2030 UTC
5N2NFA	14.240 MHz	2015 UTC
5N3ALE	14.215 MHz	0115 UTC
5N5FSR	14.243 MHz	2200 UTC
5N8NDP	14.208 MHz	2100 UTC
5N9KWO	14.240 MHz	2145 UTC

Senegal (6W)

6W6JX is often found on 40M CW. Look for this one between 7.004 and 7.015 MHz at 2300 UTC and again at 0600 UTC. He has been known to work other bands, even SSB. However, the bulk of his activity is 40M.

Nepal (9N)

In his DX column in *Amateur Radio Action*, Jim Smith, VK9NS, reports that activity from Nepal continues on a regular basis. JA9MWU was to have been in Nepal recently and received the call 9N1MWU. The only call close to that is a 9N1WU which was reported working into Europe on 14.195 MHz at 1700 UTC on 26 April. Other calls reported include 9N1ARB on 14.192 MHz at 0200 UTC and 9N1RHM on 14.243 MHz at 1500 UTC.

Qatar (A7)

WARC band activity includes Qatar. On 30M, A71A was worked on 10.102 MHz around 1800 UTC; A71AN on 10.101 MHz at 2315 UTC and A71CW on 10.105 MHz at 2330 UTC. A71AN and A71CW were also found on 17M. A71AN was on between 18.073 and 18.080 MHz around 1500 UTC and A71CW was working the east coast on 13 May near 18.069 MHz around 2130 UTC.

Twenty Meters is the best bet to look for A7 as the following reports show:

A71A1	14.196 MHz	1845 UTC
A71NI	14.168 MHz	2100 UTC
A71BY	14.170 MHz	1945 UTC
A71CW	14.014 MHz	2300 UTC
A71EZ	14.001 MHz	1815 UTC

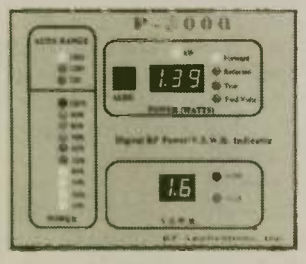
A71A was also reported on RTTY near 14.083 MHz at 2200 UTC on 14 May, working into the midwest. A71EZ was found on 40 and 15M in addition to his 20M activity. Try 7.004 MHz at 2100 UTC or 21.013 MHz at 0900 UTC.

Pratas Island (BV9P)

The Pratas Island DXpedtion came off as planned. Signing with BV9P, operations began on 25 May by an international team led by Ken Chang, BV2RA, a Taiwanese politician, and Dr. Bolon Lin, BV5AF, President of CTARL. The team includes 13 other Taiwanese DXers. Where Pratas Island stands at this moment is still in discussion with the DXAdvisory Committee. If it meets all the necessary requirements for DXCC country status and approval of the committee members, we will have an addition to the DXCC Countries List. Whatever the outcome it will count for IOTA chasers, (AS-110).

Thailand (HS)

The DX Bulletin reports activity on 20 CW by HS7ECI. Look for this one between 14.008 and 14.013 MHz from 1900 to 0100 UTC. Also on the same band try HS1OVH who was found between 14.008 and 14.010 MHz around



1400 UTC.

Other activity includes:

HSØZAA	14.025 MHz	1500 UTC
HSØZAH	14.196 MHz	1545 UTC
HSØZB	7.007 MHz	1500 UTC
HSØZBI	14.180 MHz	1300 UTC

HSØ/G4UAV is operating with a reciprocal agreement. Try near 14.179 MHz at 1300 UTC. *DX News Sheet* reports that the RAST has been authorized to use the special call of HS5ØA for one year, starting May 1995, to celebrate the 50th anniversary of King Bhumibol Adulyadej, HS1A.

North Korea (P5)

As reported in the July issue of ***Worldradio,*** a group of businessmen from Finland traveled from Tokyo to North Korea. They were on a professional mission, but as time permitted, they promoted theAmateur Radio service. They had been invited to the PDR of Korea by representatives of the DPRK ruling family. While in North Korea, a complete Amateur Radio station, which included four Yaesu HF/VHF transceivers, was donated to an educational institute of the DPRK's choice. Actual Amateur Radio activity is now scheduled for later this year. The delegation includes three members withAmateur Radio licenses from various locations in the Far East and South East Asia. The Finnish delegation included OH2BC, OH2BH, and OHØXX. P5/OH2AM operated briefly on May 14th as the first authorized Amateur Radio operation from North Korea. Some 20 contacts were made on two occasions and two bands. The DX Bulletin reports that these frequencies were 14.295 MHz and 7.002 MHz.

Mount Athos (SV/A)

The DX Bulletin reports that Peter Vekins, KC1QF, along with Andreas, SV1BKN, plan to operate as SVØGV/3 near the peak of MountAthos, this July for a few days beginning July 6. They plan both CW and SSB.

Cameroon (TJ)

Long Skip reports that TJ1JR expects to be active from Cameroon until 1998. I found no activity for this station. The same publication did report a TJ1JB on 14.027 MHz at 2315 UTC. TJ1PD has been on now and then. Look for this one around 14.226 MHz after 2300 UTC and near 18.118 MHz at 2130 UTC

Benin (TY)

Only one call for Benin has been reported. TY1IJ was on 7.010 MHz at 0600 UTC and later at 2230 UTC on 18.135 MHz. The date was 22 April.

Brunei (V8)

V85BG has been busy on 20M between 14.195 and 14.320 MHz after 1300 UTC. His usual spot probably will be on 14.226 MHz. Also heard on 20M was V85AA at 1400 UTC working into the midwest on 14.005 MHz. RTTY activity was by V85GA on 14.088 MHz at 1430 UTC on 19 April.

Auckland Island (ZL9)

DX News Sheet reports that the ZL9GD operation during January and February was conducted largely from aboard ship. As a result contacts will probably not count for DXCC. Evidently, this was a result of a misunderstanding by the operator and was in no way meant contravene any of the DXCC rules.

IOTA

I recently received a VS6WO QSL confirming an 80M contact I made during the ARRL International DX Contest. Clearly printed on the card is IOTA AS-006. Hong Kong Island counts towards IOTA, but many of these calls are located on the mainland. It is difficult to tell if these stations are on the mainland or are on the island. The VS6WO clears any doubts. The bands haven't been on their best behavior, but IOTA still prevails. Here is a sampling of some May activity:

AS-110	Pratas Island	BV9P
NA-019	Kodiak Island	KL7HKX
NA-057	Roatan Island	N7QXQ/HR6
NA-067	Hatteras Island	K3VMX
NA-204	Sabana Archipelago	COØOTA
SA-081	Tumaco Island	HK3JJH/8

Lenny, W5BOS, plans to activate Popof Island in the Shumagin Islands group (NA-087) in July. Look for Lenny signing with W5BOS/KLØ beginning 2200 UTC on 12 July through 2300 UTC 15 July. Activity is to be both CW and SSB.

Although Popof Island has a reference number, most IOTA chasers have yet to work this one.

IOTA Contest

Plan for the big IOTA contest the end

of July. Those of you New Yorkers who live on Long Island here is the chance to be chased. Yes, plain old Long Island counts as an IOTA island.

I have collected a few island DXpeditions that plan activity during the contest. As of the beginning of June this is what we have:

EU-008	Mull Island	GM4QK/P
EU-008	Gigha Island	Windy Yetts CG
EU-010	Barra Island	GM3ZRS/P
EU-031	St. Andreas Island	IK7XIV/IL7
EU-040	Berlenga Island	CS2B
EU-049	Thassos Island	SV/IK3GES
EU-052	Lefkada Island	IK3GES
EU-088	Laesoe Island	OZ/DL2HEB/P
EU-124	Anglesey Island	GW5LP/P
AS-004	Cyprus	ZC4DX
AS-006	Hong Kong Islands	VR2EZ
NA-092	Mustang Island	KG5CM/ K5LBU/WQ5Y
NA-065	Guemes Island	AA7RW
NA-094	St Paul Island	AA4VK/ WA4DAN/KW2P/W5IJU
NA-139	Assateague Island	WA3WJD/ AA3HA

DXCC Processing Status

The DXCC Desk reports that at the end of April the number of unprocessed applications was 378 (34,634 QSL cards). During the month 536 applications (48,168 QSL cards) were received for endorsements and new awards.

Other DXCC Matters

The minimum-sized rule recently adopted by the ARRL Awards Committee went into effect 20 April 95. This rule will apply only to country petitions received by the DXAC on or after that date. The petition for Scarborough Reef was in the hands of the DXAC before the 20 April date, and for that reason, the rule will not be applied by the DXAC in its deliberations and voting on the Scarborough petition.

The DXCC Desk has received documentation and has approved operations of the following:

3DA/SP2JYX	9U/F5FHI
4U/KCØPA	C21/W9GW
4U/VE3UWC	CN2GB
4U9Q	FJ/OZ7SM
4U9U	J75A
6Y5/DL2ECB	VP5/KØPP
7O1AA	VP5PP
8Q7DM	ZB2/N7RK
9L1PG	ZF2VW
9Q2L	ZS6YG
9Q5TT	V5/ZS6YG

The 4U/KCØPA operation was from Western Sahara and is the only 4U operation accepted. Their calls 4U/VE3UWC, 4U9Q and 4U9U, are from Syria, Zaire and Burundi, respectively.

Regarding the 7O1AA the DXCC Desk includes the note: Only cards in our log copy, 27 Mar to 16 Apr 94.

Antique QSL Department

In past columns we ran several cards from the estate of KL7PI, who had

worked several calls from the Middle East operated by a Dick McKercher. Well, now we have some cards from Dick operating Stateside. Dick, now WØMLY, was signing W6MLY back in the 1930s.

His first card is that of YM4AA from Danzig, then a DXCC country. The contact was dated 12 Mar 38. Following the war this country ceased to exist, therefore there is no such listing on the postwar DXCC. The area is now part of Poland.

FI8AC was the call used by R. Lebon in Hanoi in French Indochina. Dick worked this one on 17 Mar 38. This country is now Vietnam. I used an FI8AC card in my column 10 years ago.

The QSL Bureaus

Our QSL bureaus, often unrecognized for the many hours of volunteer services by fellow DXers, should be praised. Bill Schuchman, W7YS, of the Northern Arizona DX Association writes the following: "With the ever rising cost of mail, 'QSL via the Buro' is the way to go for all cards except those stations that have a QSL Manager. Although slow, the bureau is quite dependable and inexpensive for common DX. I am particularly fortunate to have Stan, WS7O, of the Willamette Valley DX Club as my card handler. Stan forwards my cards every month if there is a sufficient number of cards for me, provides the correct postage, an envelope of proper size, and he includes a slip of paper that tells me what credit I have left. The Service could not be better, and it is a credit to the WVDXC to have a volunteer like Stan."

QSL Routes

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

1PØN	—DH7PT	BV9AAA	—BV2KI
1PØP	—DK8KW	BV9AYA	—EA5KB
1PØU	—DL7UHA	BV9P	—KU9C
3A2RAR	—3A2LZ	C2/ZL1AMO	—ZL1AMO
3D2CT	—SM7PKK	C49C	—5B4NC
3D2CU	—G4WFZ	C6AFP	—N4JQQ
3D2EK	—N6EK	C6AGH	—KA1DIG
3D2LF	—AA6BB	C6AGN	—W1SE
3D2XC	—JE1DXC	CJ1MA	—VE1AGF
3V8BB	—YT1AD	CN2HW	—I5JHW
	(See Note 2)	CN5I	—I5JHW
4F2IR	—DU3CO	COØOTA	—CT1ESO
4N73N	—YU7FIJ	CQ1C	—CT1EWA
5N3/SP5XAR	—SP5CPR	CU9/CU7AA	—CU7YC
5N8NDP	—IK5JAN	CY9/AA4K	—WA4DAN
5R8ED	—LA1SEA	CY9/KW2P	—WA4DAN
5R8FA	—JE8BKW	CY9/W5IJU	—WA4DAN
5TØAS/P	—IT9AZS	CY9/WA4DAN	WA4DAN
5W1GEH	—K8VIR	D68QM	—ON4QM
7J4ACF	—DF1CZ	EG1RD	—EA1NK
7Q7TT	—ON5NT	EMØF	—OE5EIN
7S3OWG	—SM3CVM	EMØRSE	—DJØMAQ
8P9GE	—K2PF	EN2H	—I1PJA
8P9GU	—DL7VOG	EO5ØBA	—RB5BA
9H3UD	—DL8OBC	EXØA	—DF8WS
9H5ØRAF	—9H1KK	FM5CD	—F5VU
9L1PG	—NW8F	FR5HG/E	—F6FNU
9MØA	—JA9AG	G4MFW/ZL8	—KA1JC
9M2IY	—JA1INP	H44GC	—K2PF
9Q2L	—PA3DLM	H44KA	—K2PF
9V1AC	—JF1KJC	HBØ/DL8SET	—DL8SET
9X/ON4WW	—ON5NT	HBØ/DA1WA	—(See Note 4)
AHØI	—JF11RW	HC1SK	—SM6DYK
AHØW	—KE7LZ	HC7SK	—SM6DYK
AX2ITU	—VK2PS	HH2/KB0QNS	—KB5IPQ
BV9A/JI6KVR	—EA5KB	HH2/KB0SFR	—KB5IPQ
HH2/N3SIY	—KB5IPQ	UZ1ØØXE	—UY5XE
HSØZAX	—N4VA	V47XC	—GØIXC
HS7CDI	—7L1MFS	V63EI	—JK12BQG
HS7ECI	—JA3CE	V77H	—KH6HH
HV4NAC	—IKØFVC	V7X	—KH6HH
IE9/IT9JPK	—IT9JPK	V85NL	—JA4ENL
II3CC	—IN3AHO	VF1L	—VE1AL
II9R	—IT9HLR	VK6ISL	—(See Note 1)
IQØJ	—IK0REH	VP2EFO	—W9TPS
IQ4T	—IK4HVR	VP2EN	—AA4NC
J20SF	—F5LBM	VP2EP	—WAØPUJ
JW6PHA	—LA6RHA	VP2ES	—KCØZC
KH2/WA6OWM	—WA6OWM	VP2MDO	—WB4FNS
N7QXQ/HR6	—NA7X	VP5/JA7XBG	—JA7XBG
	(See Note 3)	VP5/JH7MQD	—JH7MQD
OJØ/OH8AA	—OH6LI	VP5A	—KN4UG
OM9XR	—OM3LA	VP5VW	—W8TPS
P29VMS	—DL2GAC	VP9/WJ2O	—WJ2O
P39P	—5B4ES	VP9RND	—WB2YQH
PT7WX	—W3HCW	VU2JPS	—VU2AU
PW6AB	—PS7AB	W5BOS/KLØ	—W5BOS
PXØUP	—PY1UP	WR6R/KH6	—N2AU
PX1MD	—PY1VOY	XN5JA	—VY1JA
R1FJL	—JA3AFR	XU1MF	—JA1JTU
RKØQXY	—UAØKCL	XU95HA	—HAØHW
SV5/G4JVG	—G3OZF	XW1	—JH1AJT
SV5/SM7DAY	—SM7DAY	XW1BOD	—JA2BOD
SV9/HAØDU	—HAØHW	XW2A	—JA2EZD
SV9/HAØET	—HAØHW	XX9TRF	—K2PF
SV9/HAØHW	—HAØHW	YZ5ØAA	—YU1FD
SV9/HGØD/P	—HAØHW	Z32JA	—WA4JTK
T2ØXC	—JE1DXC	Z32XA	—KM6ON
T93M	—K2PF	ZA1AJ	—OK2ZV
T94DD	—K2PF	ZA1MH	—Z32KV
T9A	—K2PF	ZD7WRG	—WA2JUN
TA1/K8CFU	—K8CFU	ZD8PC	—N2PC
TA2DS	—WA3HUP	ZF2WH	—AH9B
TE2M	—TI2YO	ZP8XB	—PY8I
TM5RE	—F5PJA	ZF2NE	—W5ASP
TO7I	—F5JYD	ZF2VV	—NX1L

H44MS and DJ9RB station.

Bill also has informed the officers of the club of the outstanding job being done be Stan.

Do you have your envelopes at your bureau? To receive QSL cards via the bureau does not require ARRL membership—it is a service to all. Regarding envelopes, each bureau handles this differently, and some prefer just funds where they provide the envelopes, address lables and postage. They will inform you the status of your account. Contact your bureau for their procedures. My local QSL sorter is Darryl Beckman, W6JII, of the Southern California DX Club. Although I don't receive monthly mailings, I do receive an envelope every so often within a reasonable period of time. Thanks Darryl. And, this reminds me, that my account is in arrears.

Miscellaneous

DX News Sheet has a new editor. Brendan McCartney, G4DYO, who had been editor for a number of years, resigned without notice on May 4, 1995. Apparently, he had some problems with the RSGB (Radio Society of Great Britain), in the production of the publication.

They were to have had a meeting on 18 May in attempt to resolve the problems, but he resigned before the meeting could take place. Brendan told me a couple of years ago that he was not a member of RSGB. Perhaps that may have been one of the problems. That's like having the editor of *QST* not being a member of the ARRL.

I welcome the new editor, Chris Page, G4BUE. He is a member of FOC and a particularly successful QRP operator who brings a wealth of DX, contesting and publishing experience to the role of editor. Former editors of *DX News Sheet* in addition to the recent editor include Martin Atherton, G3ZAY; Don Field, G3XTT, and the late Geoff Watts, the creator of this fine publication.

Norbert, H44/DJ9RB, operates from Faisi Island, near Shortland Island, (OC-162), giving IOTA chasers a chance to work a new one.

Norbert reports that the conditions had been very difficult. The corrugated roof at the dwelling where he was staying caused much QRM and QRN every time it rained. He concentrated on low band activity and gave many new DXers a new country on 80 and 160M. DL2GAC operated H44MS on SSB.

QSL Information

Oiva Simila, N3OS, is looking for a route for 5R8ZUP who he worked back on 10 Mar 1995. Anyone have an address or QSL manager for this one?

The *DX Bulletin* reports the new QSL route for Romeo Stepanenko's operations as YAØRR, 1S1RR, 1SØXV, 9DØRR, XYØRR, 3W3RR, US8R, URØRR, USØRR and EO7RR is via Vladimir Stepanenko, US1RR, P.O. Box 28, Chernigrov Postamt, 25000 UKRAINE. Perhaps you may wish to use the above address to return those P5RS7 cards to Romeo with your comments of what you thought about being hoodwinked!

4S7WP	—Shanthi Perera, P.O. Box 80. Colombo, SRI LANKA
9G1BS	—John, P.O. Box 3248, Accra, GHANA
9H5ØPIE	—AREC Club, P.O. Box 114, Valletta, MALTA
9H5ØRAF	—AREC Club, P.O. Box 114, Valletta, MALTA
9H5ØVE	—AREC Club, P.O. Box 114, Valletta, MALTA
CE7LNJ	—Manuel Francisco, Donoso Arce, Radio Club Aeronautico, Aeroporto International, Santiago, CHILE
CG7D	—VE1FO, P.O. Box 663, Halifax, NS B3J 2T3, CANADA
CG7H	—VE1FO, P.O. Box 663, Halifax, NS B3J 2T3, CANADA
CQ5B	—P.O. Box 189, Torres Vedras 2562, PORTUGAL
DX1EA	—Oilli Rissanen, P.O. Box 373, Ayala-Alabang Village, 1799 Muntinlupa MM, PHILIPPINES
SØURE	—EA4URE, P.O. Box 220, 28080 Madrid, SPAIN
S92SS	—Charles Lewis, P.O. Box 522, SÃO TOMÉ (via Portugal)
S92YL	—Lesley Lewis, P.O. Box 522, SÃO TOMÉ (via Portugal)
S92ZM	—Glenn Britt, P.O. Box 522, SÃO TOMÉ (via Portugal)
V85BG	—P.O. Box 373, MRC, BRUNEI
XV7SW	—Rolf Salme, Embassy of Sweden, P.O. Box 9,

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DX Prediction — August 1995

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	*(12)*	*15	*18	*(10)*	*15
12	*(16)*	*13	*15	*(10)*	*(14)*
14	*(20)*	*15	*13	15	20
16	*(22)*	14	*(13)*	18	24
18	23	*(11)*	*(12)*	17	26
20	22	17	*(18)*	15	28
22	19	21	25	*(13)*	27
24	*(16)*	23	28	*(10)*	*25
2	*(14)*	*24	29	*(12)*	*21
4	*14	22	28	*15	*18
6	*(16)*	*21	26	15	*15
8	*(14)*	*18	*21	12	*14

CENTRAL USA

UTC	AFRI	ASIA	OCEA	EURO	SO AM
8	15	*(11)*	*18	*(11)*	*13
10	*(18)*	10	*16	*(10)*	*15
12	23	*13	14	15	17
14	27	16	*(13)*	18	21
16	27	*(14)*	*(12)*	18	*25
18	27	*(11)*	*(12)*	17	*27
20	22	*(18)*	23	15	*28
22	19	20	27	*(12)*	*29
24	*16	19	29	*(10)*	*23
2	*14	*(17)*	28	*10	*19
4	*14	16	27	*15	*17
6	18	13	22	12	*15

EAST COAST

UTC	AFRI	ASIA	OCEA	EURO	SO AM
7	16	*(11)*	*18	10	*14
9	*(16)*	10	16	13	*15
11	22	*13	14	16	16
13	26	*(14)*	*(13)*	*18	21
15	28	*(12)*	*(12)*	*19	*24
17	27	*(10)*	*(12)*	*18	*27
19	*25	*(12)*	*(18)*	17	*28
21	20	*(16)*	25	14	*28
23	*17	*(18)*	28	12	*26
1	*15	*(17)*	28	10	*21
3	*12	16	27	*11	*18
5	17	13	22	*11	*16

Hanoi, VIETNAM

YA/UT9XL —P.O. Box 207, Pavlograd 3 23012, UKRAINE

YL7T —P.O. Box 265, Riga 50, LATVIA 1050

YL100R —P.O. Box 100, Riga, LATVIA 1007

NOTES:

1. North American contacts via K1IYD; Europe via I1HYW; Oceania via VK6LC.

2. This route applies for the operation by YT1AD only; Hranislav- Hrane Milosevic, K BR 183, Vitanovac 36206, SERBIA.

3. Please include greenstamp as cards will be mailed from Honduras.

4. U.S. stations may QSL via Stephen Hutchins, CMR 438 Box 2303, APO AE 09111. All others please QSL via DJØLC.

Many thanks to the following contributors: DJ9RB, GØTWW, WØMLY, Western Washington DX Club (WAØRJY), Western New York DX Association (KB2NMV), Northern Arizona DX Association (W7YS), Salt City DX Association (KB2G), The American Radio Relay League (K5FUV), The OPDX Bulletin (KB8NW), *Amateur Radio Action* (VK9NS), *Long Skip* (VA3JS), *The Low Band Monitor* (KØCS), *DX News Sheet* (G4BUE), *QRZ DX* (N4AA), *Inside DX* (N2AU), and The DX Bulletin (VP2ML).

Well the bands haven't changed much since the last time we complained. Don't forget the IARU HF Championships in July. The contest might just bring you some new ones. 73, de John N6JM. WR

Fleet Radio Unit Pacific operators net

Gerald R. Gavin, NU3D

A FRUPac Amateur Radio Operators net has been in operation since 1973 and now has a roster of over 975 former shipmates with over 810 having valid amateur calls.

The unclassified acronym "FRUPac" (Fleet Radio Unit Pacific) was selected as an identifiable title to commemorate the most successful WWII organization and its supporting personnel.

Members of the net are Amateur Radio operators who are former, current and retired personnel of the Naval Security Group.

The prime objective of this group is to utilize Amateur Radio to locate Regular and Reserve veterans of the U.S. Naval Cryptologic organizations and to provide them with an organized and convenient means of establishing and maintaining contact with former shipmates from the comfort of their own homes. This is done by scheduling a variety of nets that meet regularly on the amateur bands.

FRUPac is a part of and fully support by the U.S. Naval Cryptologic Veterans Association (NCVA).

For further information, telephone 1-800/USA-NCVA. From the Washington, D.C. area 301/933-7041 or contact: Ken Mann, N3GKE, Secretary, 13317 Oriental Street, Rockville, MD 20853; 301/933-3785. WR

John G. Troster, W6ISQ

WØEBG—tragedy and triumph

August marks the 50th anniversary of the end of the Big One. It is fitting therefore, that we observe this occasion by telling a story which some of you may already know a little about, but appropriately bears retelling now. This is the story of QCWA member Fred Hargesheimer,WØEBG. It was published almost 30 years ago by ***Worldradio*** publisher, Armond Noble, N6WR. Armond lost his job because he insisted on returning to New Guinea with Fred to visit the native group which rescued Fred almost 50 years ago. Here's what happened.

Fred joined the Army Air Force in July 1941, and was sent to Randolph Field, Texas for training. By August, he was assigned to a photo-recon squadron and headed to Australia, where he then ferried his P-38 to Port Moresby, New Guinea, and on up the north coast to Popendetta, near Buna Mission. Thus, he took off on his first mission with only about 10 hours air time in a P-38!

Amateur Radio served him well on his long photo-mapping missions. While flying, he communicated with his New Guinea base on CW using a bug strapped to his knee. Everyone else used a hand key, so the base operators couldn't believe they were in contact with a P-38! These missions took him to the north and east, toward Kavieng on New Ireland, and Rabaul on eastern New Britain.

In June '43, on his 48th mission, he was returning over New Britain at 31,000 feet, his assigned altitude, when he ran into a bad storm. He dropped below the storm to about 5,000 feet. At that point he observed a new jungle airstrip, later identified as Ubili, which he had not seen before, so he decided to photograph it. There was no rear view mirror in his plane, but he was suddenly aware that a plane zipped past him and his engine exploded.

He remembers that he tried to pull the handle for the canopy, but that the canopy didn't come off completely. He believed he was sucked out of the cockpit because the next thing he knew, he was floating down in his parachute. Fortunately, he drifted down through the 100 foot trees, not hanging up in the top branches as was often the fate of those who parachuted into the jungle. He was 15 miles from that Japanese airstrip when he came down and landed.

Finding himself in good condition, he set off through the jungle with a compass bearing toward the ocean. His rations ran out all too soon, but he kept going on what he could find in the jungle, albeit getting weaker all the time. After 21 days of wandering, he came to a river and met a group of natives armed with spears and paddles. Friendly? Yes, it turned out, very friendly. The leader handed him a piece of paper which was a note from an Australian coastwatcher. It said, "The bearer of this letter, Luluai Lauo, has proved his loyalty to the Allied Forces by assisting in rescue of three American airmen who were shot down by the Japanese. These natives can be trusted and anyone finding themselves in similar circumstances will receive good food and care. Signed John Stokie, AIF." These were Nakanai tribesmen.

They paddled him down river and cared for him for five months in the village of Nantambu. When Japanese patrols came by, he was hidden. Early on, he contracted malaria and became delirious. He recalls in his delirium hearing his benefactors singing Onward Christian Soldiers; he didn't understand the words, but the music was clear. He was nursed back to health by Aida Togogo, a young nursing mother who fed him with cups of her own milk. He also learned pidgin English which was, and still is, the language used in the area with foreigners. When he had recovered, his friends took him to the hide-out of the coastwatchers who radioed his presence to the US base in Port Morseby.

In this jungle outpost, ham radio again came into action. When the coastwatchers went on observation missions through the jungle, Fred went along and did what he learned in high school—operate a radio.

Fred was licensed in 1934 as W9RAU when he was in high school in Rochester, Minnesota. He gratefully acknowledges his Elmer was Jerry Stover, now W5AE, well-known author in *QST* and other publications. Jerry taught him the code and helped him construct those wonderful breadboard rigs. His first station was the popular 210 Hartley and an SW-3. He had permission to run a wire to his neighbor's garage, but his neighbor never did figure out why his porch light kept flashing on and off. And Fred didn't "enlighten" him.

At Iowa State University Fred began engineering and at the same

time, picked up a commercial license so he could work at the local broadcast AM station, WOI. He became one of the highest paid students on campus—50 cents an hour.

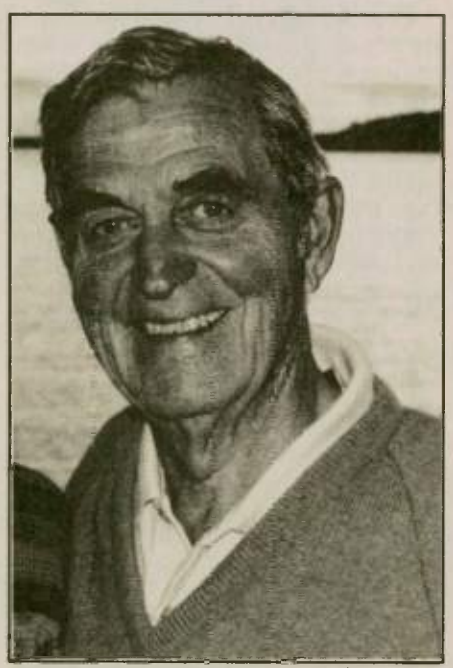
In '39 after his junior year, he went to the New York World's Fair. While visiting the Amateur Radio exhibit, by sheer chance, he met Major Armstrong who just happened to be looking for an engineer. Major Armstrong thought Fred said the station he worked for was WOR which was a big station in the New York area. He also thought Fred said he attended Ohio State which had several well-known radio professors at the time. So Fred got a summer job. Fred telephoned his engineering professor back in Iowa and asked if he could enroll a few weeks late because he was going to work for Major Armstrong. The professor said, "stay as long as you want."

After graduation, he went back to work for Major Armstrong as an engineer at Armstrong's experimental FM station site in Alpine, New Jersey, on the Palisades, overlooking the Hudson River. (This scribe used to live across the river from that tower at Alpine; it was a very impressive structure!) Fred says when he was assigned to do antenna work on top of the 400 foot tower, he would take his lunch, climb the tower and spend the day!

In mid-'41, Fred joined the Army Signal Corps and went to Fort Knox to be a radio operator. One day on Temporary Duty in Louisville, an Air Force group flew in and gave a talk. Fred thought he would rather fly to battle than walk, so he applied to be a flight cadet and was accepted. He learned later that Major Armstrong had tried to get him assigned to the Signal Corps at Fort Monmouth, but was denied by the Air Corps.

Fred had become a flier because it was better than walking. But he began to wonder about that decision as he trekked through the jungles of New Britain. Just like the Signal Corps he had left!

After eight months, in March, 1944, Fred was evacuated from New Britain on a submarine. (That was just about the time aforesaid scribe arrived on the island of Emirau a few hundred miles north). As he was departing he vowed to himself to return some day to do something for those who had saved him.



Fred Hargesheimer, WØEBG

Back home, he was assigned to the Pentagon. Later that year he met and married Miss Dorothy Sheldon who was working for Eastern Airlines at the time. Fred was discharged as a Major at war's end.

The new Major did a stint with Major Armstrong in New York, and then it was back home to Minnesota where he went to work as a sales engineer for Sperry-Univac, now called Unisys. However, while in New York, he met a young engineer named Frank Gunther, W2ALS, who was Chief Engineer of a company that made the first FM transmitter for Major Armstrong. You may know that W2ALS was one of the first QCWA members and was president of our organization in the '70s.

Back in Minnesota, Fred got the call WØEBG and began making radio friends on the far Pacific islands and the New Guinea area. By 1960, Fred had, apart from that needed to raise three kids, saved enough to return to visit his saviors in New Britain. There he was reunited with Aida Togogo who had seen him through his illness before he was rescued. Seeing her and her family and the growing population of Nantambu, he conceived the idea of building a school as his "thank you" to the village.

Back home, Fred embarked on lecturing to clubs and church groups. Gradually the money came in and 2½ years later he had the $15,000 he needed to start a school. He returned to New Britain in 1963 with plans for the school and the money to buy the materials to build it.

The school, named the Airman's Memorial School, opened in 1964 in the village of Ewasse, not far from Nan-tambu with 130 students. It was operated under the guidance of the Airmen's Memorial Foundation of Papua, New Guinea. At first the school had foreign teachers, but the goal for the school was to be wholly operated by New Guinea's own people. Fred continued to raise money to support the development of the school, and returned many times. By April '95, the Foundation's goal had been reached and the school was turned over to the New Guineans. The school now has 500 students with most going on to a new high school nearby. Due to the fine basic work of this school, some students can go on to college for advanced degrees.

In 1969, when Fred returned for the dedication of a small medical clinic, he took along a reporter who had just quit his position with Time-Life to cover this fascinating story. That reporter was, as mentioned above, Armond Noble.

Fred says the first time they met was at the San Francisco airport as Armond lurched through the gate with bags and lots of photographic equipment. Anyone who has seen Armond lately will recognize his necklace of cameras.

Fred has been back to New Britain 10 times. The area is flourishing because of a growing palm oil industry which feeds a two million dollar processing plant run jointly by a Belgian firm and the New Guinea government. Now the trip is easier for Fred because, with a growing industrial society, they could afford to build an air strip which is more convenient than arriving by boat or from the sky through the trees.

Fred retired in '77 and he and Dorothy moved to Grass Valley, California, in the Sierra Nevada mountains in 1978. Dorothy passed on in 1985, so he now lives there with his sister in a small vineyard. His children are grown: Dick, a school teacher in Lincoln, Nebraska; Eric, a computer analyst in St. Paul, Minnesota; and Carol, working in Minneapolis.

Fred is active on the amateur bands, particularly 20 Meter phone, keeping in touch with friends he has met on the radio in the Pacific. He uses a TS-440S and an SB-200 feeding a three element Yagi—WØEBG is heard well in SoPac from his mountain home vineyard in California.

It is heartening to realize that a vow taken 50 years ago has had such a rewarding conclusion. Fred's story is inspirational in the best tradition of the brotherhood of man. We are proud that Fred is One Of Us, the Elite, the Proud, the QCWA.

73 + 25, Jack, W6ISQ WR

Hamfest Sunday

Loretta Sawyer, WQ9D

It's about 4 a.m. on a Sunday morning and many are still asleep. But not if you're an Amateur Radio operator, because it is a "hamfest" Sunday. Just one of the many that take place during spring and summer months. Usually, the outside flea market area opens at 6 a.m. with the indoor festivities beginning about 8 a.m. If you plan on selling, you want to get there early to get a good spot and set out the goods. If you're looking to buy, the best selections are available in the early hours.

Everyone has their own hamfest strategy, a way of scanning the aisles for that special item at that "can't resist" price. You'll see bags of all shapes and sizes used. Some even bring wagons or shopping carts when anticipating a good day. One woman at a hamfest was carrying her child because her husband was pushing a newly purchased low band rig in the stroller. If it's a good deal, no matter what the size, a ham will get the merchandise home.

Usually by 11 a.m. the crowd starts to thin and by noon everyone is ready to go home. By Sunday afternoon, you feel like you've traveled through the international date line. You don't know whether to eat, sleep, count your profits or tinker with your new hamfest purchases. Even if you don't buy anything, it's fun to browse and meet people you talk to on the radio. WR

WE WERE SHOWING PHOTOS OF OUR GRANDKIDS WHEN SUDDENLY HE WHIPS OUT HIS "NEAT STATION APPEARANCE" PICTURES!

This morning I received a packet message from our genial North Dakota Section Manager, Bill Kurti, WCØM. Bill lives on a farm near Rocklake, North Dakota which is up by the Canadian border about 250 miles from me. Whenever he comes to Fargo, we usually have a good eyeball-to-eyeball QSO; however, the conversation usually goes from ham radio to aviation in about the first five minutes and it stays there the rest of the time.

Bill is a farmer in the process of retiring and turning his spread over to his kids. Over the years that Bill and I have communicated by packet he has invented different "sign-off lines" on his messages. For some time he would sign off with "from WCØM in the Buffalo Commons of North Dakota." With that statement, he alludes to a popular magazine article that stated because North Dakota is a state of declining population, it will soon be known as the "Buffalo Commons."

Lately Bill has signed off with, "From the Kurti Farm, where the buck never stops." I think everyone can figure out what Bill means — particularly if you are a farmer.

Bill is a giant of a man physically. Every time we get to talking flying, I wonder how he sprayed crops in a Piper Cub. I'm a reasonably big person and I fill up the pilot's seat of a Cub, but Bill is of larger frame than this old man.

The other day Bill sent me a list of North Dakota hams dating from 1914 to 1920. In those days the 1914 call signs were a number and two letters, for example: Earl Reineke, 9FS. In 1920 the calls had advanced down the alphabet to three letters after the numeral. An example of a three-letter call was Bertrum Wick, 9AEJ.

Those two calls were both friends of mine in the past. Let's start with Earl Reineke, 9FS. Earl was my boss for six years when I worked for WDAY radio and WDAY-TV during the early days of television on the prairies. Earl was a real pioneer in the days of radio. He had the first broadcast station in North Dakota in 1922. I recall watching my father, a railroad telegrapher, and Riley Petitt, a railroad telegraph equipment installer, each build a radio receiver on our kitchen table, so they could tune in the initial broadcast of WDAY.

My dad and Riley wound the coils with magnet wire around a pickle bottle of a certain size and shape. The pickle bottle stood on a shelf in our house for a number of years in case dad needed it for more coil winding. It was octagonal in shape, so when they finished winding the wire around the bottle, white surgical tape could be used to hold the coil in shape.

Our first radio was a three-tube affair, however it was upgraded to a five-tuber when loud speakers became available in the stores.

Back to Earl and his radio station. I don't know how he did it, but Earl got the Cass County Commission to let him put his transmitter up in the clock tower of the Court House. The antenna ran from there across the street to a pole in a back yard.

I was only six years of age at the time, but I recall listening to the early day broadcast on earphones. We only had one set of "cans," so only one person at a time could tune in.

Earl's little 50 watter grew quickly to a KW when radio sets became available to the masses and merchants found the new way of advertising. When I joined WDAY thirty years later, it was the leading station in the eastern part of North Dakota. We had live musicians — more than 20 — and very few phonograph records. When I came aboard on June 1, 1952, WDAY radio broadcast phonograph records on only one two-hour show on Saturday afternoon. All our local broadcasts that used music were done by human beings blowing horns and pounding drums. And the station was making money — lots of it. Earl was still the president and the boss.

Singer Peggy Lee, pianist-arranger Frank Scott from the Lawrence Welk show, and a host of other musical talent are alumni of the WDAY studio orchestra. Peggy, besides her singing chores, worked a bit in the mail room, because we drew tons of mail from the surrounding countryside.

WDAY owned two road shows that broadcast from the smaller towns around the broadcast area. One was a country western show called the "Hayloft Jamboree,",the other was "Talent Parade," an amateur talent show. The two shows were big drawing cards in the smaller towns in the area. They would fill the local town halls and fair ground grandstands whenever they appeared.

Every local show but one was produced with live music and announcers. Of course we had the NBC network to take up the largest portion of the broadcast day, but our noon hour show, "Dinner Bell Time," would play to a full-house audience each day.

Earl hired me for television because of my film experience, but I also had first phone and a second telegraph radio licenses, so they put me to work as a studio engineer for the summer vacation period. I learned how to handle five microphones with singers and orchestra and make the singer/music balance so you could understand every word of a lyric.

Now when I look at the current audio magazines with complex computerized mixing panels sporting a thousand knobs, and I listen to some of the modern records and can't understand the lyrics because they are buried in blizzard of drum rim-shots, and twanging guitars, I wonder if the industry has made any progress in the 40 years since I twiddled the less-than-ten audio knob console at WDAY. When I play a record from the past: Nat King Cole, for example, I hear every syllable crystal clear and clean, and I realize they were recorded long before the computer brought automated mix-downs, etc. to the recording industry, again I wonder if the industry has made any progress at all.

The second name on Kurti's list of old hams was Bert Wick, 9AEJ. Bert

was another radio pioneer. He started a small radio station, KDLR, in the community of Devils Lake, North Dakota. He was a fixture in the business for many, years.

Bert erected his antenna for KDLR in the middle of a pot-hole slough, so he had a ground plane that wouldn't quit. I'm sure he must have thought that about it until Devils Lake had a drought and the slough dried up. Then Bert had to put in a jillion radials to get the thing going like it did when the slough had water in it.

Blind observations

I recently received a letter from Tom Carten, K1PZU, of Wilkes-Barre, Pennsylvania, commenting on my desire to retire from writing this column. "It's been great reading about some of amateur radio's history," said Tom, "from a guy who was there for some of its exciting days. Especially the Gatti-Hallicrafters Expedition, which I read about in old copies of *QST*. (I was around then, but not a ham.)"

Tom is the voice of ***Worldradio***, he's been reading the magazine on tapes for the blind since issue number one. I was not aware of this effort, and I certainly hope that my California buddy, Ray Donald, N6VQX, is getting tapes of the magazine. Ray has recently lost his sight, and I'm sure the tapes would be of interest to him.

Tom tickled me with this paragraph: "Nice to read from someone who has been in broadcasting; I was there quite a while ago, and am still there now, although my day job is in ministry (King's College). Somehow, especially among the student population, I'm seen as somewhat of a 'pioneer' (their words) among local broadcasters. I guess when you've been in the business longer than people you work with have been alive then you're a pioneer. But that brings up images of wagon trains crossing the prairie, 5/8 whips on the back of Conestoga Wagons..."

Tom was wondering about the title of this column, "The Digital Bus." Well, when I began this column it was the RTTY/AMTOR column. I used the cartoon from my QSL card as the heading. It showed me at my operating bench reading about RTTY. That idea came from the fact that I had been writing the DX column for the *RTTY Journal* for a couple years before I switched to writing for ***Worldradio***. Along the way, one of the editors of this magazine asked for a title that embraced the changes in the RTTY and computerized ham radio that were taking place in the hobby. So I came up with the "Digital BUS" as a thought, and she bought it. I was thinking in terms of electricity, not as a long unwieldy conveyance as one of the definitions on my Bookshelf CD-ROM says.

EAVESDROPPINGS

JUST SITTING HERE AT THE CONFUSER TYPING THE NEXT NEWSLETTER TO THE WORLD. . . YOUR RETURN MESSAGE CAME FAST BY THE SAME SLOW PATH ...THE PATH OF MESSAGES IS GETTING BETTER NOW, IT MUST HAVE RUTS IN IT BY NOW. . .IT SEEM WE ARE ALWAYS IN SOME KIND OF SUN SPOT CYCLE . . . BROWSING IN A CD-ROM IS A GREAT WAY TO WASTE A LOT OF TIME, BUT IT ISN'T AS BAD AS SOME OF THESE ON-LINE OUTFITS THAT HAVE EVERYTHING BUT THE KITCHEN SINK TO BROWSE IN. . .I USE A DRAWING PROGRAM IN MY COMPUTER THAT IS SO COMPLICATED THAT I CAN'T REMEMBER HOW TO USE IT BETWEEN USES. . . HAM RADIO IS SURE FUN TO TALK ABOUT ON THE AIR. . . IF O.J. WAS A POOR MAN, I WONDER HOW LONG THE TRIAL WOULD HAVE LASTED. . .GOT A NASTY BURN ON MY HAND, BUT LUCKILY IT DIDN'T DAMAGE MY THUMB AND POINTING FINGER SO I CAN STILL TYPE.

Thanks to KA1RFD, NØLEQ, and WCØM for help. Write me: 1514 South 12th Steet, Fargo, ND 58103. My packet address: WØLHS@WØLHS.# SEND.ND.USA.NOAM.73 de Bill Snyder, WØLHS DIT DIT. **WR**

Coast Guard CW RIP

The Coast Guard, after nearly a century of monitoring telegraph distress calls that included the *Titanic's* tragic 1912 collision with an iceberg has turned off its Morse code equipment forever. At 0015 UTC on 1 April, the U.S. Coast Guard station in Chesapeake, Virginia, tapped out the end of its final message and then turned the frequency over to static.

In April 1993, the Coast Guard ceased CW operations on medium wave frequencies of 400-500 kHz. That same June they graduated their last class of communications specialists trained in the use the code.

But now the Coast Guard has followed the other services in abandoning Morse Code.

The Navy long ago gave up CW in their communications in favor of voice or digital modes.

The use of CW by merchant ships has declined in recent years as it has for hams and the military. However, the managers for shore stations KFS in San Francisco and WLO in Mobile, Alabama, plan to continue offering CW service for those ships whose owners will not or cannot afford the additional expense of new computer equipment.

Computers & Basic Stuff

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Basic Antennas, Part II

In our last installment we tried to dispel the notion that low SWR guarantees good antenna performance. In one case we saw how a vertical antenna could have an SWR of 1.56:1 and be nearly 100% efficient, but by introducing ground losses to get the "perfect 1:1 match," we dropped efficiency to 64%! We also saw that trying to reduce a 3.33:1 SWR on a high-Q mobile antenna to a somewhat better 1.67:1 match actually cut what little efficiency the antenna had by half (down from 9 percent to 4.5 percent)!

Contrary to what many antenna construction articles say or imply, low SWR has very little to do with antenna performance. Performance really relies more on efficiency, gain, directivity, and propagation, as we'll see later in this series.

In our last column we talked a little about radiation resistance without really getting into much detail. Let's rectify that now.

Radiation resistance

Radiation resistance is actually a misnomer—it's not a resistance in the conventional sense. The ARRL *Antenna Book* calls it a "virtual resistance," or "equivalent resistance." Consider using this definition: "Radiation resistance is an imaginary resistance that, when inserted in series with an antenna, can be thought of as consuming the same amount of power that is actually radiated." Using this definition makes it a lot easier to work antenna radiation problems in the terms of Ohm's laws.

As such, radiation resistance has nothing to do with actual wire resistance and therefore it cannot be measured with an ohmmeter. It's value is determined by how an antenna is constructed and its proximity to other objects, including the ground. Generally speaking, the longer the radiating element, the higher the radiation resistance will be.

While there are indirect ways to measure this resistance it's usually much easier to look up values in tables or charts or to compute them mathematically. In previous columns I presented BASIC programs for computing radiation resistance values for short verticals ("Mobile Antennas," May 1991) and for dipoles ("Short Dipoles," August 1994). This month's program provides a routine for calculating the radiation resistance of various sizes and shapes of loop antennas.

Our program computes the radiation resistance of loop antennas. The calculation is based on the formula Rr=320*PI^4*(N*A/(W^2))^2, where N is the number of turns in the loop, A is the area encompassed by the loop and W is the operating wavelength.

```
 0 REM: RADIATION RESISTANCE OF LOOPS, BY KD5DL, 8/95
 10 CLS: INPUT "FREQUENCY (MHZ)";F:PI=3.1415926:W=1005/F:
B=W/PI:PRINT
 20 PRINT "A FULL-SIZE CIRCULAR LOOP HAS A";B;"-FT
DIAMETER."
 30 PRINT "A SQUARE LOOP HAS";W/4;"-FT SIDES": PRINT
 40 INPUT "CALCULATE FOR A CIRCULAR OR SQUARE LOOP
(C/S)";A$
 50 IF A$="C" OR A$="c" THEN 70
 60 INPUT "HOW LONG IS EACH SIDE (FT)";B: A=B^2: GOTO 90
 70 INPUT "WHAT WILL BE THE LOOP'S DIAMETER (FT)";D:
A=PI*(D/2)^2
 80 INPUT "HOW MANY TURNS IN THE LOOP";N:W=984/F:PRINT
 90 PRINT "RADIATION RESISTANCE=";320*PI^4*(N*A/W^2)^2;
"OHMS."
 100 PRINT "DO ANOTHER";A$: IF A$="y" OR IF A$="y" THEN 10
 110 END
```

Other resistances

Radiation resistance, as previously stated, works in series with the antenna, meaning it works in series with the other associated "real" resistances. These are conductor, dielectric loss, coil loss, and ground loss resistances. Most of the time these other resistances are low, probably on the order of several ohms or less, for long, high, well-built antenna systems. In cases where radiation resistance is high and loss resistance is low, antenna efficiency is also high, with almost all of the power delivered to an antenna being radiated.

Antenna efficiency is defined as how well an antenna radiates the power applied to it. It is the percentage of power radiated compared to total applied power. Efficiency can also be compared, mathematically, to radiation resistance divided by total system resistance.

As we now see, radiation resistance is all-important, because the amount of current (squared) flowing through it determines the amount of power actually radiated.

SWR

So why the obsession with SWR? In part, I think, it goes back to the days of CB radio, when less technically inclined hobbyists took a little misinformation and tried to make something important of it. It certainly didn't go back much earlier than that, because early Amateur Radio operators generally didn't own SWR meters and they did fine with SWRs that would be off the scale by today's standards. Unfortunately, all sorts of myths arose about SWR that we now live with and sometimes take as gospel.

Standing Wave Ratio is the ratio of the maximum value of current (or voltage), on a transmission line, to the minimum value. When a line transfers all input power to the output load, maximum current and minimum current are the same, so the SWR is 1:1. All power is transferred, and the line is said to be "flat." In a 50-ohm system a 50-ohm source most efficiently transfers power into a 50-ohm line, and the 50-ohm line most efficiently transfers the power to a 50-ohm load (antenna).

In other words, in a 1:1 system, all the power generated at the source makes it to the load.

When the source impedance doesn't match the line impedance, or the line impedance doesn't match the load impedance, only part of the power is transferred and the rest is reflected back through the line to the source. This upsets the maximum to minimum current ratio, and SWR becomes greater than 1:1.

What most people don't consider, however, is that what "bounced back" from the forward mismatch can also bounce back again from the reverse direction. Think of it as following Newton's law; that for every action there is an equal and opposite reaction. This rereflected current adds itself, in phase, to the continuing forward current to eventually be dissipated in the load's resistances.

This rereflection of power takes place at vacuum tube and FET sources and at any other impedance mismatch in the system, including the output of pi networks, the interactions in matching transformers and baluns, and in antenna tuners. Unfortunately, though, bipolar transistors do absorb the reflected power and can be damaged by it.

If there's any real reason to keep SWR low, then, it is to protect of our transistorized equipment from possible damage.

The wonderful thing about rereflection is that while it does absolutely nothing to improve SWR, is does direct the reflected power back toward the load, forcing the load to accept and dissipate the total source power. In other words, a 100-watt transmitter can deliver full power to an antenna, and the antenna, if it is 100 percent efficient, will radiate all 100 watts, no matter what value of SWR is on the line between the two or how badly mismatched the source, the line and the load are! (This assumes that the line is lossless and does not radiate power; high SWR itself will not cause a line to be lossy or cause it to radiate).

In our next column we'll discuss this more. We'll introduce "reactance" to our antennas and show how we can take advantage of its properties to protect our transistorized equipment from excessive SWR and still transfer maximum power to free space.

And, while we're on the subject of free space, did you know that it has its own characteristic impedance? Well, it does. When an electromagnetic wave travels through free space it meets a kind of resistance (impedance) which equates to about 377 ohms.

This value was determined mathematically by finding that the division of the wave's electric field (E) by its magnetic field (H) was equivalent to the square root of space's permeability divided by its permittivity (its characteristic electric charge).

Since space's permeability has been found to equal 4*PI*10E-7 Henries/meter, and since permittivity is 8.854*10E-12 Farads/meter, then the BASIC solution for this impedance is Z=SQR((4*PI*10E-7)/(8.854*10E-12)). For all intents and purposes, this is equivalent to 120*PI, or 377-ohms.

That's it for now. Until we get together again, stay radio active. WR

OSCAR Net

In the San Francisco Bay area, Project OSCAR (Orbiting Satellite Carrying Amateur Radio) is running a new net. The net has been in operation for the last few months on WA6PWW, 147.015 (+), on Wednesday evenings at 7:30 p.m.,PDT (02:30 UTC). Questions about the birds are answered, gear discussed, and ground station operation are usual topics among the participants.

FM & REPEATERS REPEATERS REPEATERS

BILL PASTERNAK, WA6ITF

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It's very strange to visit the biggest city in the country and find oneself unable to access the majority of the area's repeaters, but that is exactly what happened to this writer during a trip to New York City in late May. I had gone to the "Big Apple" on business. As usual I had toted along my trusty Radio Shack HTX-202 that I primarily use as a way of contacting old friends from the era when I was WA2HVK and lived in Bensonhurst Brooklyn.

I rarely use a 2 Meter radio in Los Angeles, and in this case the 202 was still programmed with many popular New York City and environs repeater pairs that were entered into memory almost a year ago. So it was that I expected to turn on the HT and find "chatter" everywhere. And boy was I surprised.

From my friend's apartment in Brooklyn, I could only bring up three of the ten channels in memory. Most cases a call of "WA6ITF monitoring" brought no response what-so-ever. When I finally did make a contact on the Staten Island 146.88 MHz machine, I learned what had happened in the preceding twelve months, and more important, why.

In the simplest and most direct terms I can put it, New York City is simply "privating out." Many of the formerly "open" repeaters have gone to limited CTCSS access. Some still claim to be "open" and publish their access tone.

Others simply announced that they were now closed repeaters and those who were welcome to use the machine would be contacted by the owner. That was that.

It is the reason for this change I find most interesting. In two words—cab drivers. Taxicab and other livery drivers who some years ago decided that two meter FM and the repeaters there would be an excellent way to handle their dispatching and other operational needs.

No, we are not talking about the large taxicab companies that have their own commercial two-way radio systems. Most of the problems being faced by New York City repeater owners and users seems to be from independent single owner medallion operators and from the so-called "gypsy" (non-medallion) car services that ply the streets and highways of the Big Apple. Most of them need radio but do not want to spend the thousands of dollars required for a commercial land mobile radio system. And, as explained to us, several unscrupulous retailers, eager to make a sale at anyone's expense, have for many years sold these operators ham gear with the implied suggestion that they simply use it on any channel they desired.

This was the status-quo until about three or four years ago when a few drivers took a more active interest in their radios; took the time to get licensed; and then embarked on a campaign to try to get the New York City Taxi and Limousine Commission to make the installation of two meter ham gear mandatory in every vehicle under the commissions oversight.

Needless to say, this did not sit very well with the majority of the area's hams. Especially local repeater owners who mounted a very successful campaign to kill the "ham radio in a cab" idea. In mid 1993 the Commission said "no" to the proposal, and as one ham I spoke to said: "...an uneasy state of war has existed between most New York City hams and cabbies, ever since."

A year ago April when I was there last, almost every repeater I could hear from my friend's home in Brooklyn was suffering from what sounded to me to be some very well coordinated malicious interference. No natural phenomena could have accounted for the precise timing and intimidating language.

Now, many channel pairs that used to be buzzing with activity all day and all night long are quiet except during the morning and evening rush hour drive. The repeater sits there in CTCSS or Digital CTCSS receive mode waiting for an authorized user to activate the system to make an occasional call. Then, as I heard first hand, all goes silent once again.

And as I heard in a discussion on another of the few truly open repeaters I could find in the Big Apple, the current situation is only a lull in the war between its battles.

"The taxi driver hams have not given up," says one ham. "They are simply regrouping, getting more hackies licensed and have made it clear that the entire 2 Meter band and all its repeaters will soon belong to them."

No, not all of the repeaters in New York City have gone to closed or private operation, but as problems continue, so does the trend toward this solution to a problem that no government agency seems willing to address on behalf of the city's ham radio community. To be continued....

New band—219-220 MHz

On 26 Apr 1995, amateurs gained secondary status access to 219 to 220 MHz. Amateur operation is limited to forwarding stations in point-to-point fixed digital message forwarding systems—including intercity packet backbone networks—only.

All amateur stations are required to notify ARRL (in its FCC-designated role as contact point) at least 30 days before operating in this band, and amateur stations within 80 km of an Automated Maritime Telecommunications Systems coast station must obtain written permission from the AMTS licensee before operating.

Amateur stations between 80 km and 640 km of an AMTS coast station must notify the AMTS licensee.

A Form 219A kit, available from ARRL Headquarters, includes a cover letter of explanation, a Form 219A for the required notification to ARRL (one is required for each transmitter planned), and a copy of the 219 to 220 MHz band plan.

Frequency utilization on 10 and 6 Meter FM

When I started this column, I said that it would be as much yours as mine. If you had a topic that was near and dear to your heart, that there would be room for you to express it in these pages.

In today's world of computers, BBS and the Internet, the buzz-word to describe this is "two-way interactive." In early April I received the following note at my America Online electronic mailbox. It is from Rick Miller, WO8L, of Winston-Salem North Carolina. Rick is very concerned about the under-utilization of 10 and 6 Meters in many parts of the United States and writes:

"I read your article on repeater use in the most recent (April) edition of ***Worldradio***. The topic interests me a great deal.

"Yes, there are a lot of unused repeaters during specific times of day. Perhaps I would carry your proposal

about trunking even further to involve crossing bands within the context of license privileges.

"Having recently moved to the Winston-Salem, NC, area, I have found that repeaters on the 440 band either are under used or simply are not on the air for extended periods of time. This mirrors my experience in the Milwaukee, WI, area. I have no idea why these repeaters are not busy and have no desire to get into the attendant issues. Suffice it to say that many frequencies are underutilized.

"It is my belief that someday we could be challenged to justify the use of these frequencies. Commercial, government and even non-profit entities stand ready to challenge hams for control of the assigned spectrum. Actually, as a ham for more than 20 years, I think that we have been lucky in terms of the number and rationality of challenges to our bands.

"It is my belief that the 144, 220 and 440 bands could easily be coordinated to provide better, more fully utilized coverage for hams. When one frequency is busy, signals could be bumped to another.

"Yes, I have some understanding of the complexity of this scenario, but is the cost worth the apparently inevitable loss of some bandwidth and the more efficient use of spectrum?

"I am still puzzled by assignments and usage of repeater frequencies on the 6 and 10 Meter bands. Frankly, although they are assigned and listed, most 6 and 10 Meter repeaters appear to host sporadic endeavors by their owners.

"These two repeater bands seem to represent to me the most potential for new licensees but the least consistently run operations.

"I know that I have looked many, many times over the years at the potential of buying rigs or establishing repeaters on these bands. Alas, I have never felt the investment worthwhile, but I am cognizant of these bands as sites for future experimentation and growth.

"While I'm on the topic,...I am often perplexed about the lack of growth of the 10 and 6 Meter bands in terms of FM repeater activity.

"....I am ready to take advantage of these bands, and I recognize their enormous potential. Maybe the future will lead us in positive directions..."

Rick raises some very interesting points, but the answers remain apropos to the geographic area where you are reading this. If you are in Los Angeles as I am, all you need to do is tune a radio to any 10 Meter or 6 Meter repeater pair, and within a few minutes you will hear a QSO. Then another QSO. And another. And so on.

And I am told that this is also the case in and around the metro New York area, metro Miami and to some extent near Chicago. And that's it. Go anywhere else in this great land of ours, turn on a 10 Meter or 6 Meter radio; tune it to most of the "listed" repeaters and all you hear is dead air. Try to key up and half the time the repeater does not respond even if you have included the required CTCSS tone.

Then again, in some areas, the same holds true on 2 Meters and to the same extent on 220 and 440 MHz. The heavy utilization is where the masses of people are because that's where the greatest demand is for additional repeaters.

By way of example, about a year ago I spent ten days in Rick's new hometown of Winston-Salem, NC. I was there to complete the installation of a television editing facility that I had co-designed with Larry D'Anna, WA3KOK. (The very first all digital facility in the state — which tells you a bit about what Larry and I do to earn a living.) In the time I was there I found only one 2 Meter repeater that by the standards I am accustomed to I would consider as "mildly busy." I had a number of very delightful QSOs on it, took part in the local ARES Net and even got to explain a bit about how we produce *Newsline* after it aired during the net. Coming from Los Angeles where anyone in QSO more than five minutes may be accused of being a channel hog, that type of laid back and truly open atmosphere was magnificent.

Based on my observation of the way things are on 2 Meters, I can easily understand a lack of activity on 10 Meters or 6 Meters. According to a friend who lives in the next town of High Point, the activity on 220 is just about as minuscule. 440 is starting to show activity, but it's painfully slow. To which I will add — enjoy it while you can. Our "big-city problems" will eventually become yours as well.

What about the specter of losing either or both of these bands? I seriously doubt it. Right now, nobody wants anything at all to do with 6 Meters because of the problems associated with TVI to television channel 2. Equipment manufacturers claims aside, even the cleanliest rig running only a few watts has the potential to obliterate Channel 2 — even if you are connected to cable. It is not your radio that is at fault. Rather, the problem is the lack of shielding of TV sets and the superwide bandwidth of their front-end tuners.

So what does the future hold with regard to reallocation of 10 and 6 Meters to other services? If I were Rick I would not lose much sleep over it. But I also envy him for the kind of repeater operation he can enjoy.

New cordless channels

Speaking about 6 Meters, hams on that band will soon have more adjacent spectrum neighbors as the result of the Federal Communications Commission decision to more than double the number of channels reserved for cordless telephones. This means less interference for cordless phone users from other cordless phone users, but increases the probability of signals from the adjacent six meter band — primarily high power CW and SSB operating in the low end of the band — causing interference to a greater number of cordless phone users. Cordless phones now use just 10 channels, five of which are also used by baby monitors, kids walkie-talkies and other unlicensed radio devices. That's why cordless phone owners often overhear signals from these devices.

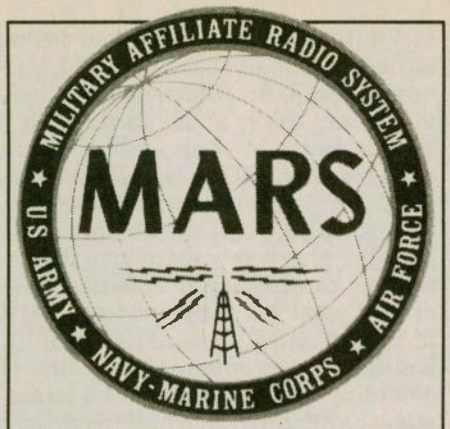
New phones will have the capacity to operate on all 25 channels being made available by the FCC. The additional channels being made available for cordless phones are also in the 46/49 MHz region. Would you believe that there are now 60 million cordless phones in the United States and that number could easily double over the next twelve months?

That's all for this month. And as Morey Povich used to say on "A Current Affair:" "...till next time America!"

de WA6ITF

(FM and Repeater column author Bill Pasternak, WA6ITF, receives his snail mail and e-mail at addresses on column head.) **WR**

Don't forget to send in your 1996 VE exam schedule!



Lorraine S. Matthew, N4ZCF
MARS call AAA9PR

Visions of things to come...That could very well have been the MARS theme at the Joint MARS meeting which was held at the Dayton Hamvention this year. A joint meeting and the joint MARS booth have long been features at Dayton, but new and stronger connotations of "joint" were presented by all the speakers at the meeting.

Army MARS was the host for the meeting this year. As such, Chief Army MARS, Robert Sutton, set the stage for the following speakers by describing "where we are in MARS and, more importantly, where we are going."

Chief Sutton described the continuous progress in updating program and procedures and in initiating efforts to attain improvements in radio and digital systems including experimentation and testing as new modes appear.

The emphasis that Army MARS has placed on emergency support has created a situation in which the customer base for Army MARS has actually increased as have its missions. Army MARS continues to grow in missions, in membership, and in technology. He stated that "The Army and the USAISC is dedicated to continue this trend."

Air Force MARS Chief, Ray Collins echoed the same thoughts as Mr. Sutton in that MARS is a very viable and needed program. There is no thought of eliminating the program. Other areas of rumor were cleared as he declared that each MARS service will maintain its own identity but that all three MARS services will work together as a three-service team. He described the joint team concepts and operational cooperation that have been developed at the Chiefs' Conference. Once the protocols for such operations have been written and signed off by the Chiefs, they need to be approved by each sponsoring service and by the Department of Defense. The theme of "joint" and "interoperational" were strongly indicated in his remarks.

NavyMarineCorps MARS Chief, David Vittum, gave what he described as the "State of the Union of Navy MARS." In his presentation, Mr. Vittum declared that the MARS services should have been interoperative all along while at the same time maintaining the unique nature, the loyalty, and the traditions of each of the services. Interoperability, interfacing, and joint operations make sense. Those practices do not mean the loss of MARS service individuality. He concluded by declaring that Navy MARS will be increasing its Public Relations efforts and will encourage more visibility.

The keynote speaker at this year's joint meeting was Colonel Arthur G. Maxwell, Jr., the Deputy Chief of Staff for Operations with the United States Army Information Systems Command (USAISC) at Fort Huachuca, Arizona, USAISC is the direct Army executive agent for Army MARS.

The real challenge, he said...is to think beyond the inevitable and the likely, "to take hold of our own destiny."

Colonel Maxwell commended all MARS members for all the fine work and service that they so freely give. He further cited the three Chiefs of the three MARS organizations as being most dedicated and openly loyal to their people and to the programs they represent. Concurrent with this loyalty, however, was the recognition that all three MARS services must work more closely together while maintaining the unique features required by the missions of the service each represents.

In his slide presentation, Col. Maxwell stressed the need for interoperability among the three military services. More and more operations will be joint in nature. He cited the need for such operations in the communications protocols in the military, the USAISC, and in MARS. Col. Maxwell described graphically the essential nature of this concept...a seamless global communications capability using multimodal techniques at all levels.

Army MARS has been examining, developing, and testing many new modes of operation. Air Force MARS and Navy MARS have been doing the same. With the possibilities offered by interoperability, Army MARS looks forward to working with AFMARS and Navy MARS in this type of development. Each service recognizes that to work individually and alone on research and development projects is to reinvent each step forward three times. With technology moving forward so rapidly, interservice cooperation is essential to keeping pace with this forward motion. The savings in resources used is also significant. Doing more with less is a most important outcome.

Colonel Maxwell continued his description of the USAISC and the Army's role in providing constantly improved communications. The real challenge, he said, and what Army leaders are charged to do, is to think beyond the inevitable and the likely, "to take hold of our own destiny." Today we are all at the threshold of a new age...an age in which information and communication will flow literally from the highest echelons directly to the battlefield. Digitization of communications on the battlefield can allow the field commanders to know where every soldier and every vehicle are located at any given time. The enhanced safety factor for our troops using this technology is incalculable.

Using information technology makes the Army capable of decisive victories in a short time. All the world watched the "smart bombs" and their accuracy and capabilities during Desert Storm. Progress in development of this technology did not cease four years ago.

Colonel Maxwell stated categorically that MARS is part of all this planning and concept development. MARS is a significant part of the communications picture. He cited many of the Army operations in which Army MARS has played a role. Since many of the operations are becoming more joint than individual service, he restressed the importance of joint capabilities among the three MARS services.

Addressing the challenges facing the MARS programs at this time, Chief Sutton closed his remarks with these words, "We feel very confident that with the existing 10,000 plus members in the three MARS programs...and the expertise and talents of future members...the ensuing structure that we will build together will be strong enough to endure the many challenges of years to come.

"For our (Army MARS) members, it takes a team effort to be a winning team, and together, we have kept this the longest running winning team in history. My sincere thanks and gratitude in helping to keep Army MARS "proud, professional, and ready." WR

Visit Your Local RADIO CLUB

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.

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.

Central Arizona DX Assoc., (CADXA). Meets 1st Thurs./monthly, 7 p.m., Salt River Project Pera Club, 1/2 mi. West of 68th & Continental Dr., Scottsdale, AZ. Rptr. K5VT 147.32(+). Packet Cluster nodes (S): 145.09, 144.93, 145.03. Info: (800) 283-4319 or (602) 876-2718.

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.

Tucson Repeater Assoc., P.O. Box 40371, Tucson, AZ 85717-0371. Meets 2nd Sat./monthly, 7:15 p.m., Pima Co. Sheriff Bldg., 1750 E. Benson Hwy. Net Thurs. 7:30 p.m. 146.82(-), 146.88(-), 147.08(+), 448.550(-) & 145.15 Packet.

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(-).

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.

Amateur Radio Club of El Cajon, WA6BGS. P.O. Box 50, El Cajon, CA 92022. Meets 2nd Thurs./monthly, 7 p.m., La Mesa Church of Christ, 5150 Jackson Dr., La Mesa, CA. 224.08(-). PL 107.2. Nets 147.570 Wed./Sat., 7 p.m. Info: (619) 697-2700.

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.

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.

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.

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

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.

Gabilan Amateur Radio Club, (GARC). P.O. Box 2178, Gilroy, CA 95021-2178. Meets odd months, 2nd Thurs., 7:30 p.m., Wheeler Manor Hosp. Rec. Rm., corner of Sixth & Carmel St., Gilroy and even months for brkfst., 3rd Sat., 8:30 a.m. (408) 623-2462.

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. 110B, Chico.

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

Lake County Amateur Radio Society, (LCARS). Meets last Thurs./monthly at either Red Cross HQ, Clearlake, or the Nice Community Clubhouse, Nice, CA, 7 p.m. Net Mon., 7 p.m. 146.775(-) for info.

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) 447-3815.

Manteca Amateur Radio Club (MARC). P.O. Box 545, Manteca, CA 95336. Meets 1st Thurs./monthly, #1 Firehouse, 7 p.m. Talk-in on club rptr. 146.985(-) PL 100Hz. Info: (209) 823-3611.

Marin Amateur Radio Club (MARC). W6SG. Box 151231, San Rafael, CA 94915-1231. Meets 1st Fri./8 p.m.; MARC Clubhouse Bldg. 549, HAFB, Novato, CA. (415) 883-9789 (Summer exceptions; contact Pete N6IYU, 924-1578). Sun. AM Club at Red Cross, San Rafael.

Motorcycling Amateur Radio Club. Meets 2nd Sat./monthly, 8 a.m., Denny's Restaurant, 22611 Oakcrest Cr., Yorba Linda, CA at Weir Canyon, off the 91 Fwy. Info: Ray Davis, KD6FHN, (714) 551-2010 or (714) 551-1036.

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.

North Shores ARC. Meets 1st Tues./monthly, 7:30 p.m., So. Clairemont Rec. Cntr., 3605 Clairemont Dr., San Diego, CA. Info: (619) 224-1294.

Palos Verdes ARC. Meets 3rd Wed./monthly, 7:30 p.m., Community Rm., "Shops at Palos Verdes," 550 Deep Valley Dr., Rolling Hills Estates, CA. Info. Ms. Marti Brutcher, N6XDS, (310) 376-1861 or (310) 377-6342. Rptr. 145.38(-) PL 100.

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.

Sacramento Amateur Radio Club. Meets 2nd Wed./monthly, 7 p.m. Sac. Blood Ctr., 32nd St. & Stockton Blvd., Sacramento, CA. Info net at noon on rptr. W6AK/R 146.91(-). Steve Cates, KC6TEV, (916) 391-7341 or Gary E. Bryant KB6KZZ, (916) 646-1171.

Sacramento "Old Timers" Amateur Radio Society and Sacramento Valley Chapter #169 QCWA (Quarter Century Wireless Assn.). Meets 2nd Wed./monthly, 8 a.m., Lyon's Restaurant, 1000 Howe Ave. For info contact Paul Wolf, W6RLP (916) 331-1830.

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.

Santa Clara Valley Rptr. Society, (SCVRS). P.O. Box 2085, Sunnyvale, CA 94087. (408) 247-2877. 146.76(-), 224.26(-), 444.60(+). 2 meter/220 net Mon. 9 p.m. Mtgs./3rd Fri.

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.

Sierra Foothills ARC. P.O. 3262, Auburn, CA 95604. Meets 2nd Fri./monthly, 7:30 p.m., Firehouse, 226 Sacramento St. Auburn. 10m, Wed. 7:30 p.m., 28.415, 2/220m, Thurs. 7:30 p.m., 145.430(-) (PL 94.8) & 223.86(-).

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

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.

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.

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).

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

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.

Vaca Valley Radio Club. Meets 2nd Wed./monthly, 7 p.m., Vaca Fire Dist. Stn., Vine St. in Vacaville, CA. Rptr. WD6BUS 145.47(-) PL 127.3. Dan Bissell (707) 446-7411.

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. 145.440(-) PL 136.5. For info: Joe, KA6LPZ, (714) 963-4426.

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.

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.

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.

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.

CONNECTICUT

Tri-City Amateur Radio Club. P.O. Box 686, Groton, CT 06340-0686. Meets 2nd Tue./monthly, 7 p.m., St. Lukes Lutheran Church of Gales Ferry on Rt. 12. Info: Bob, KA1BB, (203) 739-8016.

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.

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.

Port St. Lucie ARA. Meets 1st Fri./monthly, 7:30 p.m., St. Andrews Church, Prima Vista Blvd., Port St. Lucie, FL. Contact: Wes Sammis, W2YRW, (407) 878-4739. Call in 146.955(-).

Saint Petersburg Amateur Radio Club. Meets 1st Fri./monthly, 7:30 p.m., Red Cross Bldg., 818 Fourth St. North, St. Petersburg, FL. Nightly nets 6:30 p.m., 147.06(+), 224.66(-). Rptrs. 147.06(+), 224.66(-), 444.475(+). Info: R. Russell, N4ZMQ, (813) 896-2518.

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.

Suncoast Amateur Radio Club. P.O. Box 1992, New Port Richey, FL 34656-1992. Meets 2nd Mon./monthly, 7:30 p.m., First Lutheran Church, corner of Polk & Delaware, New Port Richey, FL. Sponsor of WC2G/rptr. on 145.35(-), serving west Pasco County.

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.

GEORGIA

Dalton Amateur Radio Club, Inc., (DARC). 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.

HAWAII

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

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) 595-6245.

IDAHO

Idaho Society Radio Amateurs. Boise Chapter 146.94. Meets 3rd Tues./monthly, Borah H.S., 7 p.m. Rptr. at 8000'. Membership welcome. 146.94(-).

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.

Dupage Amateur Radio Club. (DARC). P.O. Box 71, Clarendon Hills, IL 60514. Meets 4th Mon./monthly, 7:30 p.m., Holy Trinity Church, SE corner of Cass & Richmond, Westmont, IL. Net Sun., 9 p.m. on 145.25. W9DUP repeaters 145.25(-) (107.2PL), 442.55(+) (114.8PL), 224.68(-).

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.

Hamfesters Radio Club, W9AA. P.O. Box 42792, Chicago, 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 145.07. Info: (312) 974-3291.

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(+).

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(+).

Wheaton Community Radio Amateurs, (WCRA). P.O. Box QSL, Wheaton, IL 60189. Meets 7:30 p.m., 1st Fri./monthly, College of DuPage, Glen Ellyn, IL. Nets Sun. & Tue. 8 p.m., 145.39(+) MHz. 440 MHz net on Tues., 8:30 p.m. on 444.475(+) MHz. RTTY Net Sun. 9:30 p.m. 145.31(-).

York Radio Club. Meets 3rd Fri./monthly, 8 p.m., Elmhurst College (Science Bldg.) Elmhurst, IL. Net Mon., 8 p.m. W9PCS/147.42 simplex. Rptr. 442.875(+).

IOWA

Sooland Amateur Radio Assoc., (SARA). Meets 3rd Tues./monthly, 7:30 p.m., American Red Cross Bldg., 1512 Pierce St., Sioux City, IA. Contact: Glenn Holder, KØTFT. (712) 239-1749. Call-in 146.97(-)

MAINE

Androscoggin Amateur Radio Club. Meets 1st Wed./monthly, 7:00 p.m., Auburn Police Station, 1 Minot Ave., Auburn, ME.

MASSACHUSETTS

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

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

MICHIGAN

Adrian Amateur Radio Club, W8TQE. Box 26, Adrian, MI 49221. Meets 1st Fri./monthly, 8 p.m., Blue Flame Rm., Citizens Gas., N. Winter St. ARES net Sun., 9 p.m. 145.37(-). Info: Tom Parsons, N8QEW, (517) 263-5568.

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

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.

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

Hazel Park Amateur Radio Club. Hoover Elementary School-Hazel Park, P.O. Box 368, Hazel Park, MI 48030. Meets 2nd Wed./monthly, 7:30 p.m. Sept. thru May. 146.64(-) Call-in. W8JXU Club Call. Net Sun., 9 p.m., 146.64(-).

Hiawatha Amateur Radio Club (HARA) Meets 1st Thurs./monthly, 7:30 p.m., at Trinity Lutheran Church in Ishpeming, MI (even no. mos.) and at Jacobetti Veterans Facility in Marquette, MI (odd no. mos.). Sun. net 7:30 p.m. on 146.76. Info: Richard, N8GBA, (906) 249-3837.

MISSISSIPPI

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

MISSOURI

Central Missouri Radio Assoc. P.O. Box 28954, Kansas City, MO 65202. Meets 2nd Tues./monthly, 7 p.m., Boone Electric Coop, 1413 Rangeline Rd., Columbia, MO. Talk-in 146.76(-).

Lebanon Amateur Radio Klub, Inc. P.O. Box 2034, Lebanon, MO 65536-2034. Meets 1st Mon./monthy, 7 p.m., Bell Restaurant, City Rt. 66 East Lebanon. Call in 146.700(-).

PHD Amateur Radio Assn., Inc. P.O. Box 28954, Kansas City, MO 64188. Meets last Tue./monthly, 7 p.m., Gladstone Comm. Bldg. (816) 781-7313, Volunteer Examiner Coordinator.

NEVADA

Frontier Amateur Radio Society, (FARS). Meets: 3rd Mon./monthly, 7 p.m., Cioppino's Restaurant (between Vegas Valley Dr. & Desert Inn), 3125 S. Nellis Blvd., Las Vegas, NV. Net Mon. 7:30 p.m., 145.39(-) Rptr. on Black Mountain. Club info: Jim Frye, NW70, (702) 456-5396.

Wide Area Data Group, Inc. P.O. Box 3132, Sparks, NV 89432. Meets 1st Sat./monthly, 9 a.m., Penny's Kountry Kitchen, 337 E. Plumb Ln., Reno. Info: (702) 356-8200. Call in on 147.30(+) MHz.

Sierra Intermountain Emergency Radio Assoc., (SIERA). Meets 2nd Tues./monthly, 7:30 p.m., Douglas County Lib., Minden. Contact: George Uebele, WW7E, (702) 265-4278, 147.330.

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.

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(+).

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.

Cape May County Amateur Radio Club. Meets 3rd Thurs./monthly, 7:30 p.m., Human Resource Bldg., Rts. #9 & #47 in Rio Grande, NJ. Talk-in on 146.61(-). Weekly net, 8 p.m. every Thurs. except 3rd.

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.

NEW MEXICO

Albuquerque Amateur Radio Club. P.O. Box 11853, Albuquerque, NM 87192. Meets 1st Sat./monthly, 7:30 a.m., Golden Corral Restaurant, 8505 Montgomery NE.

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.

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.

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: Charlie, WA2JUJ, (516) 420-0046.

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.

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.

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!

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.

Westchester Amateur Radio Assoc., (WARA). Meets 1st Thurs./monthly, 7:30 p.m., Scarsdale Town Hall, Scarsdale, NY 10583. All invited. Info: Dan Grabel, N2FLR, Pres. (914) 723-8625.

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) 962-9666 for details. Talk-in WB2ZII/R 147.06(+) PL 114.8/2A.

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) 963-8995. 146.865(-), 440.15(+).

NORTH CAROLINA

Cabarrus Amateur Radio Society, (CARS). Meets 3rd Mon./monthly, 7 p.m., Forest Hills United Methodist Church in Concord, NC. Net on Mon., 9 p.m., 146.65(-).

Stanly County Amateur Radio Club. P.O. Box 188, Stanfield, N.C. 28163. Meets 4th Thurs./monthly, 7 p.m. at Stanly Community College, Albemarle, NC.

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(-).

Clyde Amateur Radio Society (CARS). Meets 2nd Tue./monthly, 7.30 p.m., Municipal Bldg., Clyde, OH 43410. NF8E rptr. 146.85(-) and 442.625(+) MHz. Net Sun. 9 p.m. Info: E. Remaley, KA8CAS.

Firelands Area Rptr. Assn., (FARA). Meets 4th Tue./monthly, 7 p.m., Ohio Veterans Home, Sandusky, OH. WB8LLY rptr. 146.805(-). Net Sundays, 8 p.m. Info: FARA, P.O. Box 442, Huron, OH 44839.

Greater Cincinnati Amateur Radio Assn., (GCARA). Meets 4th Wed./monthly, 7:45 p.m., Cincinnati Museum of Nat. History, 1720 Gilbert Ave. Amateur Radio Station W8DZ. Info: WA8STX or (513) 563-7373.

Lancaster & Fairfield County ARC. Meets 1st Thurs./monthly, 7:30 p.m., American Red Cross, 121 W. Mulberry St., Lancaster, OH 43130. Info net Mondays, 8 p.m., K8QIK/R 147.63(-) rptr.

Toledo Mobile Radio Association. P.O. Box 273, Toledo, OH 43697. Meets 2nd Wed./monthly, 7:30 p.m., Luke's Barn, Lucas County Rec. Ctr., 2901 Key St., Maumee, OH. Contact: Brian, WD8MXR, 385-5624.

Triple States Radio Amateur Club. Meets Wed./weekly on 28.48 at 8:30 p.m., 7260 at 9 p.m. and Sun. 4 p.m. on 7240. Rptrs. 146.91(-), 146.715(-). P.O. Box 2 40, Rd. #1, Adena, OH 43901. (614) 546-3930.

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

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. Net Sun. 7:30 p.m. 147.06(+) MHz. Info: (503) 385-1156.

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.

Oregon Coast Emergency Rptr., Inc. 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 997-3081.

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.

PENNSYLVANIA

Butler County Amateur Radio Assn. P.O. Box 1787, Butler, PA 16001-1787. 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.

Fort Venango Mike & Key Club. Meets 2nd Tues./monthly, 7:30 p.m., Vo-Tech, Oil City, PA. 145.230, 145.190, 147.120, 444.125.

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.

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 pt.bbs.

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

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: Dean, N1SXL, (401) 539-0775.

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.

VIRGINIA

Southern Peninsula Amateur Radio Klub, (SPARK). Meets 1st & 3rd Tue., Salvation Army Community Bldg., Hampton, VA. Repeaters 146.73(-), 449.55(-). VE Exam Info: (804) 898-8031, W4RTZ.

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.

WASHINGTON

The Inland Northwest Hamfest Assoc. (Club). Meets 2nd Tues./monthly, 7 p.m., St. Ann Parish Hall, E. 2120 First Ave., Spokane, WA. Info: KJ7BB, (509) 534-8443.

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.

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 317, Cottageville, WV 25239.

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

WYOMING

Sheridan Radio Amateur League, 146.82. P.O. Box 7042, Sheridan, WY 82801. Meets 4th Thurs./monthly, 7 p.m., location varies; Saturdays, 8 a.m. at J.B.'s. Info: (307) 674-6666, WA7B.

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

10-10 INTERNATIONAL News

Chuck Imsande, W6YLJ
10-10 19636

10-10 Convention

The 1995 10-10 Convention held at the Capstone Sheraton Inn, Tuscaloosa, Alabama, on 17-18 June, was considered a big success. The over 125 in attendance spent the weekend talking 10-10 and ham radio. The Chapter tables in the assembly area were busy with members meeting members and talking 10-10.

Some of the YLs enjoyed a shopping tour and lunch while the balance of the group enjoyed talking radio and looking at the various mobile installations in the parking lot.

The Friday night net had well over 100 check-ins. Saturday was devoted to a full schedule of forums lasting from early morning to late afternoon with the last being a 10-10 forum with the Officers and Board of Directors discussing the results of the Friday Board of Directors meeting and answering questions from the floor.

The Saturday evening banquet was followed by entertainment and a special appearance by the famous auctioneer "Colonel Ed," K5ERJ, who not only entertained all but auctioned off some very nice prizes.

All in all, a great time was had by everyone. The next 10-10 convention is scheduled to be held in 1997. Date and place will be announced later, but why not plan to attend and meet some of the 10-10 members who you talk to on 10 Meters?

Are you on line?

Last issue we requested that any 10-10 member who is "on-line" with e-mail capability to let Ed Redwine, K5ERJ, know. Ed is preparing a list of all 10-10 members with e-mail capability so that important news about 10-10 may be sent on a timely manner to e-mail members.

If you have America-on-Line, Prodigy or access to the Internet, send your address to: Ed Redwine, K5ERJ #11843 at: k5erj@aol.com. The list will be available soon from Ed for an SASE. Watch for details in a forthcoming column.

10-10 SSB Contest

The next 10-10 contest will be held on the weekend of 15-16 July 1995. The contest begins at 0000Z on 15 July and runs until 2400Z on 16 July. Here is a chance for you to pick up new 10-10 numbers or if you are looking for your first 10 contacts in order to join 10-10, this is the time to make those contacts. Please remember that 10-10 supports a "quiet zone" (no 10-10 contest activity) between the frequencies 28.490 and 28.510 MHz. 10-10 recommends this "quiet zone" for those amateurs who are not interested in the 10-10 contest and requests that all 10-10 members support this policy. See you on the contest, the good Lord willing and propagation in our favor!

W6OI on the air

There are no special event stations scheduled to operate W6OI #109, for the next month or so. The 10-10 Club Station call sign, W6OI, #109, is available for any paid-up member to use as a special event station. For detail information, contact the Club Station Trustee, Morrie Goldman, W6EHM #4189, at 21518 Marjorie Avenue, Torrance, CA 90503-6418. Send a photo copy of your license with your request.

10-10 Daily nets

Even during this time of low propagation, there are 10M openings on a frequent basis. The problem is no one can predict just when these openings will occur. Check one of the 10-10 daily (except Sunday) net frequencies of 28.380 or 28.800 MHz at 1800Z. You may be surprised at what you may hear! Also while working around the shack or on the computer, it is recommended that you leave the radio set at 28.345 MHz. This is the frequency that most of the 10-10 paperchasers use and if there is an opening, you will definitely hear activity on this frequency.

IOTA Expedition

The OH-KY-IN Amateur Radio Club Station, K8SCH/4, 10-10 #46888, will be active from IOTA NA58 from 21 through 24 September 1995. NA58 is Tybee Island, GA (Chatham County) and K8SCH will be working stations on 10 Meters on CW on 28.040 and SSB on 28.460 and 28.560 MHz. Here is a good chance for you to begin your collection of 10-10 IOTA contacts. It is rumored that 10-10 will have a new IOTA Award soon, so here is one island as a starter. By the way IOTA stands for Islands On The Air. If you are lucky enough to work K8SCH/4 while they are on Tybee Island, QSL to either K8SCH or N8FU to *Callbook*™ address. QSLs from DX via the bureau are okay.

10-10 Special Event station

WB1ENL, #52404, will operate from August to December 1995, to commemorate the 25th anniversary of the 90th Attack Squadron know as the "**PAIR-O-DICE**." This is the anniversary of leaving Bien Hoa AFB, South Vietnam during October 1970. Look for WB1ENL #52404, on 28.470 MHz at any time the band is open to One Land. For Certificate send QSL card and #10 (or larger) SASE to: Bob Tiroletto, 35 Sentinel Hill Road, North Haven, CT 06473-1526.

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, 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 10-10 Information Manual which contains everything you want to know about the 10-10 organization and a copy of the latest issue of the *10-10 International News*, the 32 page 10-10 quarterly magazine.

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

Patrick Tice, WAØTDA

Morse 2000: The Old Standby Moves into the 21st Century

Could it be the passing of an era? Morse code, recently abandoned by the U.S. Coast Guard and the Navy, now seems destined to become the center of a lively debate at the next International Telecommunication Union World Radiocommunication Conference, to be held in Geneva this fall. Amateur operators will face the question of whether or not the code should remain a licensing requirement for stations operating on the HF bands.

Regardless of the outcome of ITU discussions and rulemaking, the code will remain a viable communications option, though perhaps not a licensing requirement. Why this is so has a lot to do with the simplicity of the technology required by the Morse code: a switch turning an RF carrier on and off!

It is this simplicity that also makes code a viable medium for some persons who have severe physical disabilities or sensory impairments... long-time operators like Gayle Sabonaitis, WA1OPN, who is both deaf and blind, and who feels the vibrations of the code by placing her fingers on a tactile pad. While tactile pads have been around a long time, there is renewed interest in the code for another reason: it can be used as an input medium to tell a computer what to do!

Enter Dr. Thomas and Debra King, WF9I and N9GLG, whose work in augmentative/alternative communication (AAC) and assistive technology (AT) at the University of Wisconsin Eau Claire, place them in a unique position to meet people who might benefit by learning Morse code. The idea is to introduce Morse code input to control computers and other devices as another communication tool that people with severe disabilities might use to expand their horizons.

A person who can move no more than a single finger can break a light beam or work a microswitch.

But what advantage does Morse code have over other modes of communication? Dr. King believes that his patients can benefit from the code because it is both fast and easy to learn. How, for example, is a person with extremely limited mobility or is non-verbal as the result of cerebral palsy supposed to access a computer? There are a variety of ingenious solutions, but the code is unique among them because of its simplicity: All that needs to be manipulated are one or two switches, establishing a series of on/off states in the proper order. A person who can move no more than a single finger can break a light beam or work a microswitch. An eye blink switch or a puff and sip keyer, operated by the movement of air through a mouth straw, could become access devices, allowing a person with nearly complete paralysis to communicate by radio or computer...or to tell the computer to control various devices, including the radio!

Debra King, N9GLG, Tom King, WF9I, and Darci Lynds use Morse input to control a computer. *—photo by WF9I*

The Kings want to expand Morse literacy and awareness on a global scale, and have proposed an international effort to promote the code as an access device and communications medium for people with disabilities. Their outreach, called "Morse 2000," is an effort to reach professionals and amateurs alike who might have an interest in adaptive technology...a friendly sort of technology which assists people who cannot access computers, radios, or machinery in the ways that most people can.

You need not be actively working in adaptive technology or with people who have disabilities to help in this effort! In fact, you may have some ideas about switches or other input devices as a result of the work in your field. There are several ways for you to find out more about what is going on in this field to participate in the discussion. The easiest way to keep updated is to subscribe to the Morse 2000 List Server, an automated e-mail system brought on line via the Trace Research and Development Center at the University of Wisconsin-Madison. You have to have an Internet address, and you may subscribe to the Morse 2000 List Server at no charge. Just follow these instructions:

a. Send your e-mail request to listproc@trace23.waisman.wisc.edu

b. Leave your subject field blank.

c. In the body of your e-mail message include the following: subscribe morse2000 First Name Last Name

d. Be sure to turn off the "signature" field in your e-mail program if it supports that option.

A paper option is *MORSE*LES, the new newsletter of the Morse 2000 outreach. For information, contact the editor, Dr. Thomas King, SLP, Dept. of Communications Disorders, UWEC, Eau Claire, WI, USA 54702-4004. To contact Dr. King by phone, call 715/836-3980 (voice) or 715/386-4846 (FAX).

By Internet: kingtw@uwec.edu

The Morse 2000 World Conference is being planned for Spring of 1997. For further details, or to offer ideas, contact the conference coordinator, Debra R. King, M. Ed., Arts and Sciences Outreach Office, UWEC, Eau Claire, WI, USA 54702-4004. By phone: 715/836-5400 (voice) or 715/836-2380 (FAX).

By Internet: kingdr@uwec.edu

The Kings are active in the Courage HANDI-HAM System, helping persons with physical disabilities to discover the world via Amateur Radio. You and your radio club can be radioACTIVE too! for more information, contact:

Courage HANDI-HAM System
3915 Golden Valley Road
Golden Valley, MN 55422
612/520-0515 (voice);
612/520-0577
(FAX); 612/520-0245 (TTY)
Internet: handihams@aol.com WR

YLs on the Air

Kay Eyman, WAØWOF
Route 2, Box 366
Garnett, KS 66032

Oklahoma City

There were many YLs among the 300-plus amateurs who provided around-the-clock support for the search and rescue operation in Oklahoma City after the explosion at the Murrah Federal Building on 19 April. They served in every capacity, from the front lines where Carole Ayers, KB5EXR, from Edmond, Oklahoma, an R.N. who reported on the scene very early. Her unenviable task was securing identification tags to the bodies of the first fatalities. Behind the scenes Sr. Virginia Breene, KC5HSU, was stationed at the first Christian Church. Families waited there to learn about their missing family members, and Sr. Virginia, from Tulsa, remained in Oklahoma City to comfort and counsel the grieving families for three days, returning two other times to help and to attend the memorial service held a week later. Carole worked four days in Oklahoma City.

The Salvation Army had previously established an 80 Meter net covering the eastern Oklahoma/western Arkansas area, which met every second Saturday of the month on 3.900 MHz, to prepare for possible disasters. This net interfaced with another HF net in Georgia and North Carolina and a local two meter net, which met at the same time. In addition, Oklahoma City hospitals held disaster drills each month and fully understood the value of Amateur Radio support. This preparedness helps explain the numerous comments made during the networks' coverage of the disaster about the tremendous outpouring of public support and the speed and efficiency of the rescue workers.

Judy Macdonald, KA5BJS, and Dee Guyer, KF5OZ, were among those who served at the Commander's Office at

Dee Guyer, KF5OZ (left) and Judy Macdonald, KA5BJS.

the Salvation Army's area division headquarters in Oklahoma City. A completely equipped radio room was already in place, and Amateur Radio operators were on the air within five minutes of the blast.

In addition to this station, there were canteens dispatched to five locations

Sr. Virginia Breene, KC5HSU.

around the disaster site. Each of the five canteens had at least two amateurs on duty to relay the urgent requests for supplies, while many other amateurs served as runners or transporters to locate and then deliver the items to the scene as quickly as possible. They also coordinated the delivery of food, dry clothing, and other necessary supplies to the rescue workers. Working through the Salvation Army's supply system and using a lot of ham ingenuity, they managed to get whatever was needed to where it was needed without delay.

One of the first requests was for small flashlights and batteries for the rescue workers to attach to their helmets. One of the amateurs took $60.00 and headed for Wal-Mart and other local suppliers. Buying (and negotiating for discounts, as available), he soon had everyone equipped. When a request came out for some rappelling equipment, a Bolivian ham living in Oklahoma City provided it. The most emotional request relayed was for six American flags to cover the bodies of the six Marines

brought out of the building.

The Salvation Army had a supply system and some 5-ton trucks for delivery, but they lacked communications and drivers with a knowledge of the city streets. D.C. "Mac" Macdonald, K2GKK/5, soon had amateurs, up to five at a time, delivering the goods much faster in their cars and vans, which worked extremely well.

In addition to the command station, the five canteen stations, and the station at the church, Amateur Radio stations were also in place at the medical tent set up for emergency triage and at three Red Cross sites. Again, YLs were among the many amateurs from Tulsa, Pryor, and other areas of Oklahoma and across the country who came to offer their services. The Salvation Army documented over 7,000 man-hours, with shifts lasting from 6 to 20½ hours. Some of the local YLs came in for the night shifts when their husbands could be with the children.

This disaster was unique, not only in size and graphic horror, but because it was also a federal crime scene. This severely complicated the duties of the amateurs because access was soon restricted at the site and the requirements for access badges were constantly changing, making it difficult for the volunteers to get where they were needed.

The first public debriefing of the Amateur Radio support was held at the Green Country Hamfest in Tulsa, on 27 May. It was very moving to hear some of the hams reporting on what it was like to be on the scene. Everyone was very proud, and rightfully so, of the incredible discipline and ability to stay with the job until it was done that had been displayed. The rescue workers were extremely grateful and lavish in their respect and praise of the hams.

The entire operation was very intense and there were many frustrations. There were the natural situations occurring when take-charge people sometimes had conflicting ideas about the best course of action, but the mission always came first. Although physical strength sometimes failed, moral and spiritual strength prevailed.

The amateurs found that on the first day they were providing most of the communications for the health workers—the doctors, nurses, and hospitals— as they were getting people out of the building and assisting at the triage centers. They also had to establish logistical communications because this was a federal crime scene and it was necessary to get amateurs on site. There were communications to be relayed between the command station and the other stations so needed items could be located and then transported to where they were needed as food, rain gear, and dry clothing had to be taken to rescue workers who were unable to leave their posts.

The amateurs also had very high praise for all the support they received. ARRL Section Managers in several states called to see if they could help, and a net control in Alaska called to make sure their previously-scheduled net would not interefere in any way. Local employers almost universally gave the amateurs administrative leave or comp time, and Oklahoma Comm Center as well as manufacturers donated equipment and supported the effort.

There's really an important lesson here for amateurs everywhere. No one knows where the next natural or man-made disaster will occur, and it is vital that amateurs be prepared to serve. One point emphasized at the debriefing is that training and preparedness are essential. Knowing how to operate in an established net is helpful, but just having a net is not enough. Supporting local public events, such as parades, races, or charity walks, gives experience in passing traffic and is vital. And there should be a disaster preparedness plan in place so that people know who should be where.

These Oklahoma hams were ready when they were needed. Are you?

Girls Scouts and ham radio

Arline Berry, N1OMA, has just received the new "Girl Scouts and Ham Radio" patches. The first Girl Scout to earn the patch is Amanda "Mandy" Lacouture, KB1BHW, of Franklin, Massachusetts. Mandy holds a Tech+ license and helped to design the patch. Any Girl Scout who has passed her license exam may wear the patch on her badge sash. The patches, which cost $1.00 each, and further information on the patch program are available from Arline Berry, N1OMA, Hobby Hill, 6 Causeway Lane, Medfield, MA 02052.

Arline just passed her Advanced exam and has been helping with radio support at several special events this spring, including the Boston Marathon; Walk With a Friend (a 3-mile walk for the Handicap Workshop in Needham); Walk for Hunger; Charles River Run, and the Antique Car Races, in Mt. Equinox, Vermont. WR

What's next?

A ¼" square silicon computer chip has the capacity of the original ENIAC computer, which took up an entire city block. *—The Spark Gap*

Search And Rescue Communications

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

As I write this month's column, the sky is dark, rain is falling and lightning is flashing. I've disconnected all the outside antennas and powered down the packet bulletin board. If it were not for a deadline, I would not be in front of a computer typing.

Lightning scares me! Lightning scares me when I consider that my densely populated tower is one of the highest objects around. I've seen what happens to electronic gear following a direct strike. I have been spellbound wondering how a lightning strike could remove a significant section of power line and vaporize protective circuitry.

I am not an expert on lightning protection. My approach is to read every article that crosses my path and follow various authors' advice. In another 20 or so years I'll tell you if it all works, for my only measurement of lightning avoidance is that of not being struck! If my shack gets zapped, I'll either figure something didn't work as predicted, or that nothing could have been done to prevent or minimize the damage.

Lots of information

Mobile Radio Technology, 9-1-1 Magazine and a plethora of Amateur Radio publications have featured articles recently on lightning protection. The *9-1-1* article was particularly sobering as told from the "strikee's" point of view. I cannot envision the fright at having a ball of fire shoot through a dispatch and phone console.

With as much literature available to you concerning lightning protection, I won't try to repeat it or give you a condensed version. I would urge you individually and in your organizations to become literate concerning the dangers of, and the recommended preventive measures for, lightning strikes.

About the time I moved into our current house, the company I work for was remodeling their computer room. I was the fortunate recipient of a giant grounding strap. This item stretched completely around my house and took several of us to unroll it. I attached a number of ground rods to the strap (now buried encircling the house) and then bonded the strap with huge gauge wire to my tower, to my copper pipes, to my fence and just about anything metal (including the aluminum siding on the house).

My efforts followed recommendations in one article I'd read concerning having a common ground point and having a good ground field. Besides feeling a little safer with regard to lightning, I noticed that the HF background noise plunged significantly! Our television picture was sharper and some annoying hum left our phone line.

When I described what I'd done to an electrical engineer following an Amateur Radio meeting, he told me I was simply following "good engineering practice." His comments are pretty crucial as we undertake providing communication service to others during less-than-favorable conditions. My goal was simply to deter a lightning strike, but one outcome was improved communications quality through lower noise levels and reduced "hum."

I recall setting up a field station during a Civil Air Patrol exercise and noticing a dramatic improvement in signal reception quality when we connected a ground rod to the station. The ground began as a safety issue on an inspection sheet but became an element of effective communications. Our attempt to avoid an inspection criticism was actually "good engineering practice."

Whether it is lightning protection, user safety or improving signal quality, I encourage you to evaluate your communications sites with an eye toward using good engineering practices. You don't have to be an engineer or have an engineer inspect each site. You can learn through observation and through reading. We have such an array of research tools and so much information available there is little excuse for not taking the opportunity to learn.

As you develop engineering expertise, use this knowledge by sharing it during your team meetings and as you set up field stations. We learn best by sharing what we know and seeing theory put into practice. With the summer lightning season upon us, it is an ideal time to learn what good practices might decrease our chance of being zapped!

Operator morons

I call them morons. Others use much stronger language. I refer to those individuals who feel the need to interfere with others by keying radios, making anonymous comments, transmitting noises and even using control codes to turn off repeaters. These are not radio operators, they are criminals.

I've never quite understood the need for attention so intense it would

cause someone to sit for long periods of time, even over days, and create interference. During a CAP search some years ago an individual repeatedly jammed aircraft transmissions to the point we had to use aviation frequencies and a relay plane simply to communicate.

We could never pin down the culprit but following an in-person visit to a highly likely suspect by some pretty upset pilots, the "noise" went away.

In recent weeks a criminal has been tormenting local users of several repeaters by sending control codes that turn on and off links, making 9-1-1 calls and hanging up and turning off repeater functions. It has been very annoying and disruptive to area nets including one ARES training net that originated from the state's comprehensive emergency management folk.

Tracking teams

What do you do? In the past the common remedy was to simply ignore the criminal until he or she got bored and moved on to other evil activities. This is still good advice, but what about the criminal that just won't go away? And what do you do if the interference happens during a rescue effort?

I don't know who suggested it but one good idea is a group of experienced "bunny hunters." These are Amateur Radio folk who enjoy the challenge of transmitter hunting and through practice have developed significant skill at locating signal sources. The suggestion was to develop a resource of "hunters" that could be called on short notice to assist locating interference sources.

This tracking team would be a published resource with a stated purpose and mission. In my view, this specialty team would be a dozen or so highly trusted operators with grab-and-go kits that contain their tracking gear. They would be available to respond immediately and be the kind of folk who just quietly go about their work without much discussion and fanfare. They would use, perhaps, an uncommon frequency to coordinate activities and persistently track interference.

Besides technical skill they would be expert at picking up clues from background noise or power supply hum. They would list possible areas of origination and have a database of operators known to live in the area. They would notice hours of operation and when interference was happening. These specialists would be an elite group dedicated to discouragement of airwave crime. Most airwave criminals make mistakes and eventually they'll do something that will allow you to identify them. Remember that it does take skill and patience to locate these morons.

This reminds me of the guy who kept keying up during an Amateur Radio net. The signal had a unique (and loud) power supply hum and relay click. After he checked into the net as if nothing were amiss, a phone call pointing out the identifying "hum" and "click" put an end to the crime spree.

California efforts

Lou Dartanner, N6ZKJ, sent me information on what is happening in California concerning intentional interference. She detailed efforts by the Santa Barbara club that resulted in an amendment to legislation making interference a violation of state law. The law now states that it is a public offense to interfere with Amateur Radio emergency communication efforts. The punishment is a fine or jail sentence. Should the interference cause bodily injury or significant property loss, the offense becomes a felony. This amended law went into effect 1 Jan 1995, and you can find it in Section 653t of the California Penal Code.

Sadly it will probably take a loss of life or property destruction and a resulting prison sentence to impact airwave crime, but this is an excellent step toward recognizing the seriousness of intentional interference.

Lou also enclosed an article written by Bill Talanian, W1UUQ, concerning malicious interference. Bill details efforts by their "Project Pathfinder" team and the efforts to identify and collect evidence to assist conviction of offenders. He writes: "If you know someone who is causing such interference, do everything in your power to stop this behavior. An offense could suddenly become a felony and you could find yourself an accessory to it."

Bill and Lou, I salute your efforts in Santa Barbara County! If readers would like information concerning these efforts, contact Lou at 5546 Cathedral Oaks Rd., Santa Barbara CA, 93111.

Until next month, keep safe, operate smart and keep ready! Best wishes from Salt Lake City. WR

The shortest distance between two points is usually closed for construction. —*The LARK LED*

Richard Fisher, KI6SN

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A chip off the QRP block

The 8044ABM Curtis keyer chip has a menu of scrumptious options that reads like something from a five-star restaurant.

Classically sculpted CW, weighting control, positive and negative keying outputs, A or B iambic options, a 200 milliwatt audio amplifier for sidetone, manual keying function, a speedometer—all specialties of the house.

Unfortunately, when most designers come to the Curtis table, they leave their appetites behind.

Dennis Blanchard, K1YPP, co-owner of the New Hampshire-based Jade Products, Inc., has changed that, however, by laying out a smorgasbord with the company's Curtis Keyer Kit. His design, Blanchard believes, calls on every known function of the versatile 8044ABM.

For its size, power requirement and versatility, the kit is a perfect entree for the QRPer— at home or in the field.

The basic Jade unit, which includes the sidetone audio amplifier, iambic keying options and adjustable speed and volume controls, is priced $39.95—all on a plated-through, double-sided, silk screened printed circuit board just 3.5" wide, and 2" deep.

For an additional $14.95, you'll get components to add to the board for the speed meter, sporting a specially-labeled, 50 microampere meter.

And if you anticipate needing the chip's positive/negative keying—provided with older tube-transmitter requirements in mind—and weighting functions, $10 extra will bring the necessary parts.

The kit is also available without the Curtis chip for $29. If you're interested in the PC board only, it's $14.95.

The Jade keyer project was developed in great part with the QRPer in mind, Blanchard said.

The kit bears all the earmarks of other Jade FUN-KITS: extremely thorough 50-plus page construction manual, top quality parts parceled in baggies that coincide with the step-by-step instructions, and a nicely laid out and silk-screened PC board showing the location of each part by number and outline.

Here at KI6SN, it took only a few hours at the bench to get the Jade kit built and running. A squeeze of a Bencher paddle produced sweet-sounding CW the first time power was applied to the circuit.

Some of the PC board traces are rather close to one another, so special care is needed in soldering some components. And the substitution of a transistor in the circuit— as the result of an engineering change order—required a bit of component modification. But I wouldn't hesitate to recommend the Jade keyer kit to the first-time builder.

A BS170 MOSFET replaces an MPF102 JFET transistor originally designed in the turn-on transient delay circuit, crafted to prevent the keyer from producing code until the circuit has been fully powered up. The BS170 has been deemed a better choice for power-up sequencing. The pin-out of the two transistors is different, though, so the builder needs to cross two of the BS170's "legs" and insulate them before installation. It's fully explained in an instruction sheet provided with the kit, and is a fun exercise in itself.

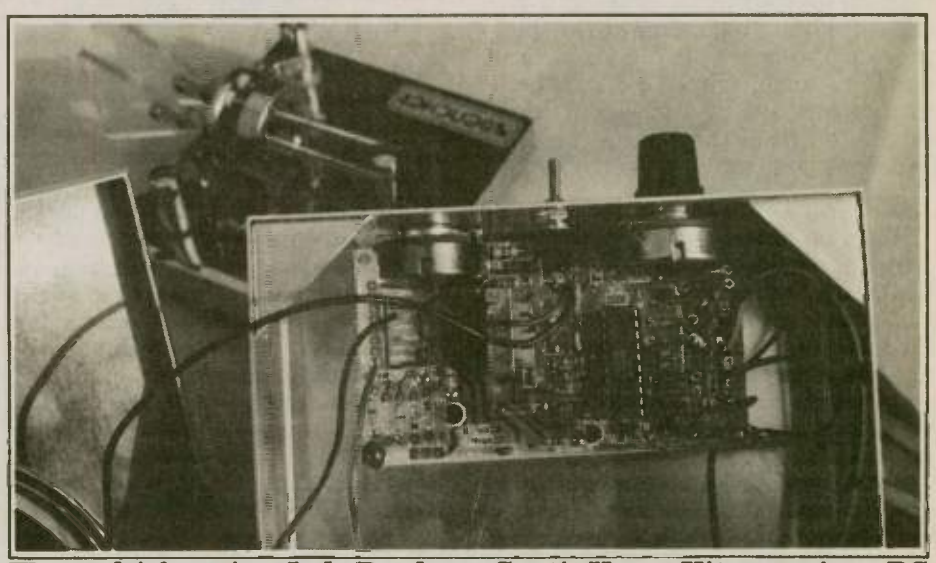
Before choosing a permanent home for the keyer, I opted to use it lying haywired on the operating table for a while. On-air reports have been excellent, with one operator convinced a keyboard was producing the CW.

After only a few QSOs it was clear that building the Jade kit into an existing transceiver would be unnecessarily confining a very, very good keyer. This gem needed to be in a box of its own, ready to patch into any rig in the house.

So, a nice aluminum chassis was purchased, with plenty of room for a 3.5" speaker from Radio Shack— allowing the chip's sidetone monitoring function to solo beautifully, and loud.

Two full-sized, board-mounted potentiometers—one for speed control; the other for adjusting the volume of the monitor—provide enough rigidity to mount the kit. There are holes on the corners of the board, however, to add spacers and bolts for even more support. The shafts of the pots protrude through the chassis front panel.

The builder has the option of choosing either iambic A or B functions during construction. In the A configuration, the keyer completes the element you're sending, and then stops. In the B configuration, the keyer finishes the element you're sending, and then adds one more—so, if you're sending a dash, it will complete the dash and then add a dot.



The multi-function Jade Products Curtis Keyer Kit occupies a PC board 3.5 inches wide and 2 inches deep.

The keyer's speed ranges from 5 to 50 wpm, with the panel-mounted control pacing the circuit smoothly from QRS to QRQ. The audio amplifier sidetone monitoring function provides plenty of volume—also front-panel adjustable—for your listening and sending pleasure. A single-pole, single-throw toggle switch was added to the speaker line in the KI6SN version, so the sidetone can be silenced without having to turn the volume control.

The Jade keyer requires between 4 and 18 volts DC.

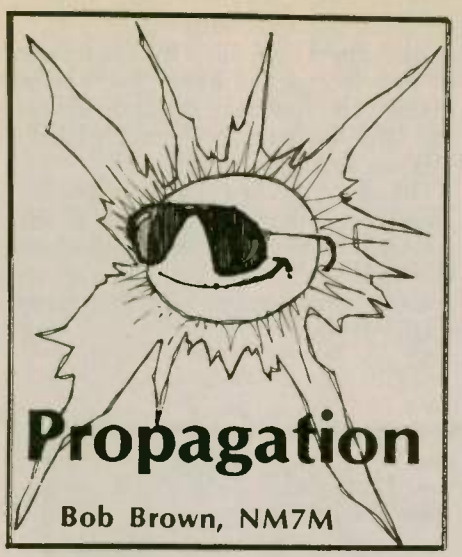
Full schematics and pictorials come with the keyer kit, showing the chip used both in a basic "fewer-frills" configuration, and as a full-blown, maximum-function keyer.

Everything about this kit is top flight.

For more information, or to order, contact Jade Products, Inc., P.O. Box 368, East Hampstead, NH 03826-0368. Or call (800) 523-3776.

Blanchard said one of his main goals in developing the keyer kit was to make it small enough to fit into almost any QRP transceiver— from the Heath HW-series to Ten-Tecs.

Given the goodies he's packed onto a small board and his deft use of the 8044ABM's myriad functions, the Jade Curtis Keyer Kit is going to be an attractive smorgasbord added to many a QRP layout. **WR**



Propagation

Bob Brown, NM7M

In my days teaching physics at the Big U in California, I've seen the full range of student's facial expressions, from utter amazement to sheer boredom and a few others that depended on the subject at hand.

For example, students who'd spent their early years puttering with old jalopies smiled and enjoyed the practical sides of mechanics and heat. And those with a background in amateur astronomy couldn't get enough optics to satisfy their curiosity. But those into electronics or radio could go from a smile of understanding to a look of bewilderment within the discussion of a single topic. For example, things were "all smiles" when it came to discussions of voltages or charges in capacitor combinations or voltage and current division in resistor networks. However, any digression on my part to the energy or power supplied by a battery in those situations served to straighten out those smiles and bring up some quizzical expressions.

But the most predictable change in facial expression came in connection with the discussion of the generation of electromotive forces (EMFs), say with the rotation of a loop of wire in a magnetic field. That's a simplified version of the common AC generator, with a sine-wave current, or a DC generator, with a pulsating, half-wave current if the slip rings are replaced by a commutator. In short, it's "no big deal," a straight-forward application of Faraday's Law as the magnetic flux through the wire loop changes when it rotates. The very same result can be obtained by another approach, just by considering the magnetic force on electrons as they're carried along by the loop's rotation. The magnetic force is equivalent to the force of an electric field in the wire and that can be used to calculate how the EMF in the circuit varies as the loop rotates. When I'd go through that, I'd get looks like "Whoa, run that by me again!" so I'd do a simpler example with three sides of the wire loop fixed in a hairpin shape and the fourth side that slides along, cutting across lines of force of the magnetic field, as in Figure 1. At this point, your reaction might be "Why are you telling me all this?" Well, believe it or not, these ideas bear on the shape of the geomagnetic field and how it controls our precious ionospheric electrons. Reason enough? I should think so!

Back to the hairpin. If the magnetic field B is out of the plane of the page and the fourth side of length L moves to the left at a speed v, then the force on each conduction electron in it is evB,

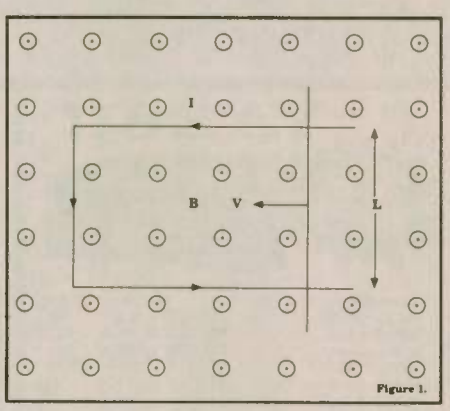


Figure 1.

where e is the electron's charge. That force is equivalent to an electric field vB and will drive an electron current in a clockwise direction around the circuit just as though an EMF of vBL were present. (And if you use Faraday's Law of Induction, you will get the same result.)

Now to the geomagnetic field. The earth sits out there in the solar system and is surrounded by its magnetic field. And, in case you haven't heard about it, the sun spews out ionized material that's called "plasma," steadily and in puffs and blasts from time to time. That's the "solar wind" and consists of electrons and protons,

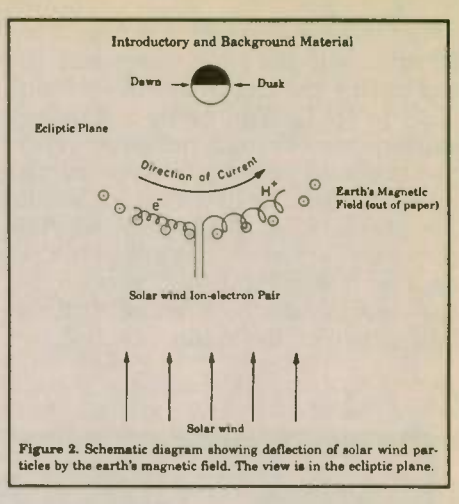


Figure 2. Schematic diagram showing deflection of solar wind particles by the earth's magnetic field. The view is in the ecliptic plane.

moving along at an average speed of about 400 km/sec.

Now the solar plasma is not exactly like a "solar wire" as all the protons are free to move, in contrast to those positive copper ions bound to a crystal lattice in the wire. But the same ideas apply, only now the electrons and protons are free to gyrate around the field lines while moving along toward the earth, all because of the magnetic force. In that regard, the earth's magnetic field goes from south to north so if we go to Figure 2, where the field is out of the page again, we see that the magnetic force on electrons in the solar wind will drive them to the left, toward dawn, and protons to the right, toward dusk. That sort of circumstance gives rise to a positive current flow near the earth, going from dawn to dusk.

Now the earth and its magnetic field sit out there in the solar wind, sort of an obstacle to its flow. It shouldn't surprise you that aeronautical types have toyed with this problem, even talking about the possibility of a shock wave developing in front of the earth as the solar wind roars by. Actually, that is the case but let's not get ahead of ourselves and take things one step at a time, the easy way.

The solar wind, of course, carries energy and momentum in the motion of its particles and when it encounters the geomagnetic field, there's something of a "pushing and shoving match" that takes place that limits how close the solar wind can come to the earth. In close to the earth, the energy density of the magnetic field is quite large and in the interplanetary space, the same is true of the solar wind.

But the geomagnetic field weakens with distance from the earth so there's a "standoff distance" where the magnetic energy density of the field is about the same as that in the solar wind. That's the dividing line, where the dawn-to-dusk currents come the clos-

est to the earth. Sound reasonable? Sure!

At this point, you're probably getting fidgety, wondering what I'm up to and if I'm trying to make you into a "Rocket Scientist." Fear not; all this talk really is related to Amateur Radio and the hobby we enjoy. It's just that these ideas, new as they are, bear on some of the mysterious troubles from our past. So stick with me as it gets better from here on.

Having said that, let me go on by saying the upshot of all this is currents from solar wind particles flow around the "obstacle" that the geo-

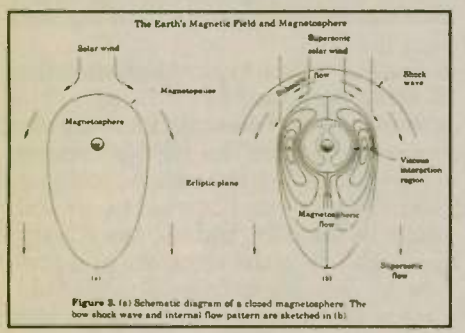


Figure 3. (a) Schematic diagram of a closed magnetosphere. The bow shock wave and internal flow pattern are sketched in (b).

magnetic field presents, forming a layer called the magnetopause. Inside that layer is the magnetosphere where the geomagnetic field dominates and on the outside, what magnetic field there is has its origin on the sun.

In close to the earth, those solar wind currents don't have much effect and the electrons in our ionosphere move around just as though the field was that of a classical dipole, sort of a bar magnet stuffed deep in the earth. That situation of well-ordered field lines prevails out to 6-8 earth radii, at least under normal solar wind condi-tions.The magnetopause is out there at 10-12 earth radii and between those two ranges is where the magnetic situation may vary or fluctuate from time to time, depending on what the solar wind is doing.

That inner limit within which order prevails is interesting in two respects. If you work it out using the dipole model of the earth's field, magnetic lines of force which cross the geomagnetic equator at a distance of 6 earth-radii actually pass through the earth's surface at 66 degrees magnetic latitude. That's around the auroral zones and thereby hangs a tale about propagation disturbances. We'll get into that another time.

For the moment, however, the fact that lines of magnetic force above 66 degrees geomagnetic latitude cross the equator out in the region where magnetic conditions may vary means that HF propagation which relies on electrons held by those field lines may be variable, even uncertain, too. Of course, that would not be the case if the solar wind were steady and normal but that's not always the truth, especially during magnetic storms, so you can begin to see how HF propagation is affected by gusts and blasts of the solar wind.

In extreme cases, the magnetopause can be pushed inward, much closer to the earth. One way of knowing when that happens is to put instruments, electron counters or magnetometers, on those geostationary communications satellites we depend on nowadays.

Their location is chosen so the period of their orbital motion is 24 hours, placing them overhead at all times. If you work it out, a synchronous orbit is out at 6.6 earth-radii. See what I mean?

The magnetopause doesn't have to come in that far for propagation to be affected adversely. During huge magnetic storms it can but you won't know if it did unless you call the NOAA/SESC BBS.Under those conditions, NOAA/SESC speaks of "magnetopause crossings" at the GOES satellite. If you hear that, you know how bad it became in taking the bands to the sad state you're listening to.

So much for the front of the magnetosphere. Now you've seen and heard enough about airflow around aircraft surfaces, say wings, to know that there is both streamline and turbulent flow in the air as it flows past an obstacle. Now it wouldn't require any great stretch of one's imagination to think the same thing is true behind the earth. The only unusual thing about the solar/terrestrial situation is that the outer reaches of the geomagnetic field make up the obstacle.

So one can expect that the solar wind flow far behind the earth will finally return to something like streamline flow. But between the magnetopause and that point, the situation is sort of complicated, the geomagnetic field squeezed into something of a tear-drop shape, as shown to the left in Figure 3. The right-hand side represents the situation for supersonic flow past the earth and includes the formation of eddies from the turbulent flow of solar plasma at the magnetopause.

What I've told you is a simplified version of what now applies. In essence, it represents the state of knowledge back in 1961 but has been verified, at least in broad outlines, by satellite investigations. For us, depending as we do on ionospheric electrons for HF propagation, we can see that RF paths on the sunlit side of the earth now differ from those on the dark side by more than just by the amount of solar illumination. On the darkside, the earth's magnetic field is drawn or dragged out by the solar wind into a "magnetotail," especially the field lines that go through sites at high magnetic latitudes.A rough idea of the shape of the field can be obtained by stretching out field lines on the dark side of the earth by a factor of 2. Okay?

So trans-polar paths are in more peril than the simple dipole field model would suggest. As a practical matter, you already knew that; right? Of course, but now you understand something of why that's the case. Of course, there's more to the story but that will have to wait for another day. Right now, the thought I want to leave with you is that our radio hobby is under more of a solar influence than just from sunlight, even in quiet solar conditions. In a few words, for something like 50 years, we were in a "Photo-Chemical Era" when it came to understanding. That is behind us now and we're well into the new "Plasma and Fields Era." Tell that to a friend. WR

CONSTRUCTION

Two-thirds 'Bobtail' (½-square) antenna

John Sehring, WB2WQG

While doing some computer modeling of 1-wavelength long, straight, end-fed antennas, I noticed the 'traveling wave' effect. This is a progressive phase shift of antenna current as it moves along the wire of non-center-fed antennas. It is due mostly to the radiation of RF energy from the antenna.

Its effect is to skew the radiation pattern of an antenna in a direction along its wire axis, away from the feed point. The antenna's radiation pattern is then no longer the same in its two endfire directions.[1,2,3] I found that this effect also occurs in non-center-fed *bent* (such as end-fed, inverted-delta

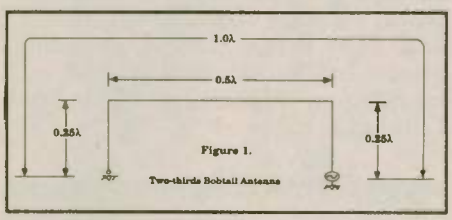


Figure 1.
Two-thirds Bobtail Antenna

shaped) antennas.[4]

So I decided to look at the two-thirds Bobtail antenna too.[5] This antenna looks like two quarter-wavelength-long vertical wires with their bottom ends just above ground, positioned half-wavelength apart. The vertical wires are connected to each other on top by a half-wavelength-long horizontal wire. See Fig. 1.

The antenna acts similarly to (but not exactly like) two ground mounted, one quarter-wavelength long vertical radiators, spaced half-wavelength apart and fed in phase.

The two-thirds Bobtail is usually fed at the bottom of one of its vertical legs against ground; this is a high impedance (high voltage/low current) feedpoint. So it can be thought of as just a 1-wavelength long, end-fed antenna in the shape of a rectangle. Therefore, traveling waves and their effects on pattern skewing should show up in it.

Such endfire pattern skew has not, to my knowledge, been reported. This isn't surprising, as rapid switching of feed ends of this antenna is difficult. This is because of the wide physical spacing of the feed points, one-half wavelength. For example, on 40M, it would be 66 feet. Also, it's the broadside gain of this antenna which is paid most attention.

I modeled and analyzed the two-thirds Bobtail antenna over a variety of grounds, from poor to good in RF quality[6], using the MININEC antenna modeling program.[7] As the antenna's horizontal wire is more than 0.2 wavelengths above ground, MININEC should give reasonably accurate predictions; vertical wires close to the ground are correctly modeled by MININEC. The criteria for indicating resonance was that the direction of current flow reversed in exactly the center of the horizontal wire.

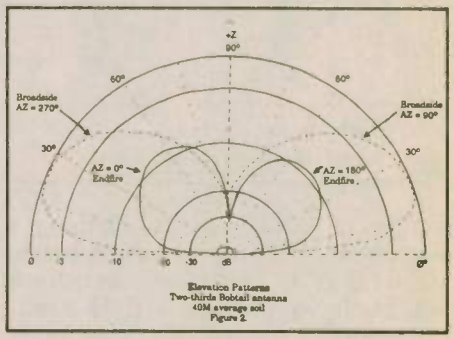
The Bobtail and its variants are generally limited to use on 7 MHz and higher frequencies due to physical size but could be used at 4 MHz, so I modeled antennas designed for 80, 40, and 20M.

Results

My analysis did show a traveling wave effect in the phase of the current of the two-thirds Bobtail. Not surprisingly, when I plotted the two endfire elevation radiation patterns, they were not the same.

With a full Bobtail, the null is aimed straight up. When using a two-thirds Bobtail, the null is tilted down to around 85° elevation in the endfire azimuth direction opposite from the wire that is fed.

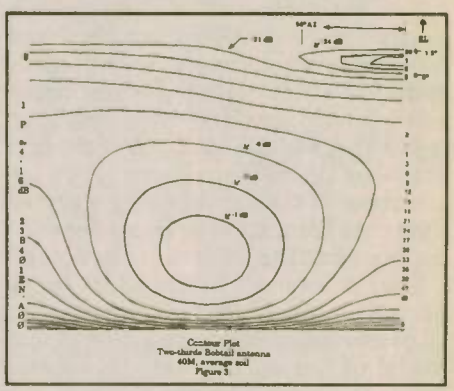
See Fig. 2 for a typical elevation plot of the two-thirds Bobtail. The antenna's broadside gain lobes are also



Elevation Patterns
Two-thirds Bobtail antenna
40M average soil
Figure 2

shown for reference. Zero dB on the plot is referenced to the antenna's maximum broadside gain. The feedpoint is located at 0° azimuth, on the left of the plot; 180° azimuth is on the right.

Fig. 3 shows the same pattern in a



Contour Plot
Two-thirds Bobtail antenna
40M, average soil
Figure 3

different way. The pattern strength is constant along each line on the plot which is called a 'contour.' There is a 3 dB difference between adjacent contours except for the those of two the highest values, which represent -3 and -1 dB levels.*

All levels on this plot are once again referenced to 0°dB which is the antenna's maximum broadside gain. As before, azimuth runs from 0° on the left (where the feedpoint is) to 180 ° on

the right. Elevation runs from 0° on the bottom to 90° on top.

**The scale on the lower right side of the plot gives the value of each contour in dB down from the 0 dB reference.*

The smallest circle on the plot (the -1 dB contour) shows the shape of the maximum broadside lobe of the antenna. The depth and shape of the null in the upper right corner (toward 180° azimuth and at high elevation) of the plot is clear. The general non-symmetry of the pattern due to the traveling wave effect is obvious: it's tilted downward toward the right.

TABLE 1
Two-thirds Bobtail Antenna
Size of High Elevation Angle
Null -24 dB Contours*

Band	Soil Conditions		
	Dry	Average	Very Moist
80M Azimuth	72°	112°	124°
Elevation	3°	7°	8°
Gain [dBi]	2.5	4.6	5.6
40M Azimuth	72°	100°	118°
Elevation	4.5°	7.5°	11°
Gain [dBi]	2.6	4.2	5.2
20M Azimuth	**	70°	84°
Elevation	**	5°	8°
Gain [dBi]	2.6	4.2	5.1

**Contour levels are referenced to 0 dB which is the maximum gain of the antenna shown in each case.

**The high elevation angle null depth only went down to -21 dB in these cases.

The null's angular size depends on the kind of soil under the antenna and the band it's used on. For example, on 40M, over dry soil, the -24 dB null contour (this is about 4 S-units of rejection!) is about 72° at its widest in the azimuth direction and 4.5° at its its tallest in the elevation direction. Over average soil, it grows to 100° in width and 7.5° in height; over very moist soil, the null becomes 118° wide and is 11° high. The area inside the -24 dB contour is 24 or more dB down.

The still quite useful -21 db (3.5 S-units of rejection) null contour is much larger over all soils, on all the bands. It covers a wide range, about 180° in azimuth and from 90° in elevation (straight up) down to about 80°.

The tendency is that the size of a given null contour becomes larger:

1) Over better soil.

2) At lower frequencies.

See Table 1 for a summary of this.

Putting the null to work

The orientation of the null can be useful. For example, lets install a two-thirds Bobtail antenna in the northeastern part of the United States. We'll position it with the plane of the antenna running northeast to southwest. This would give maximum gain at right angles to it, in the northwest and southeast directions.

If you fed the northeast end's wire the antenna would suppress signals and static of domestic origin. This is because they arrive at high elevation angles, from a broad arc of azimuth centered on the southwestern direction right where the null is.

As a result, domestic QRM and QRN would decrease significantly.

Other feeds

The antenna can also be fed at the junction of the horizontal wire and one of the vertical legs. It is then sometimes called a 'half-square' antenna. Since this is a low impedance (low voltage/high current) point, coaxial cable feed can be used.

A balun (voltage- or current-type) should then be used to preserve current balance at the feedpoint. The balun will also prevent the outside of the coax feed from radiating which could distort the antenna's pattern.

The antenna's current distribution when using balanced feed at this feedpoint will be the same as when using bottom feed. The antenna will therefore show traveling wave effects because it is still an off-center-fed antenna. Feed dress important though: Reference 8 suggests running the coaxial feedline at 45° downward toward the center and in the plane of the antenna to minimize undesirable coupling effects between antenna and feedline when it's fed this way. Any such coupling (or feedline radiation) could alter the antenna's radiation pattern in an unpredictable way.

Full Bobtail

Due to its symmetric center feed[8], the full-size Bobtail will have the effects of the phase shifts and pattern skewing exactly opposite in both halves of the antenna. Therefore the effects cancel, and so its elevation pattern is identical in both endfire directions. Modeling this antenna confirmed that.

References:

1. Rautio, J. C., *The Effect of Real Ground on Antennas-Part 5*, *QST*, Nov. 1984, Figs. 4H - 4L and 5.

2. The *ARRL Antenna Book*, American Radio Relay League, 1974, p. 58, Fig. 2-70

3. Balanis, C. A., *Antenna Theory*, Harper-Row, New York, 1982, pp. 372-374.

4. Sehring, John (WB2EQG), *Just Another Loop Antenna—Or Is It?*, 73, September 1995.

5. a) The two-thirds Bobtail antenna is sometimes called a 'half-square.'

b) The full-size Bobtail antenna has three vertical wires positioned in a row and two horizontal wires for connecting them on top. It uses the same individual wire lengths and spacing. It is usually fed at the bottom of the center vertical wire against ground. See also Reference 8.

6. Soil parameters used for the analysis:

Type	*Dry*	*Avg.*	*Very Moist*
Dielectric Constant	3	15	30
Conductivity (Siemens)	.000	.005	.01

7. Lewallen, Roy (W7EL), *MININEC: The Other Edge of The Sword QST*, February 1991, pp. 18-22.

This article gives an excellent overview of the capabilities and limitations of the program.

8. Smith, Woodrow (W6BCX), *The Bobtail Curtain and Inverted Ground Plane*, Ham Radio, Part 1, Feb. 1983 and Part 2, Mar. 1983, p. 83.

This is a good summary of Bobtail operation and performance by the author of the first-ever Bobtail article (*CQ*, April 1948).

See also: Vester, Ben (K3BC), "The Half-Square Antenna," *QST*, March 1974. WR

OLD-TIME RADIO

A Radio Man

Subscriber Vincent Salerno, Jr., N1RAN, saw our notice inviting readers to send in pictures and stories about the outstanding hams they know. He sent us the following article based on one he originally wrote for The Key, *the Contoocook Valley (NH) Radio Club newsletter.*

Vincent Salerno, Jr., N1RAN

The Contoocook Valley Radio Club holds its meetings once a month, a tradition that has continued since April 5, 1959. It is there that hams, Amateur Radio people, can get together and enjoy the camaraderie of the hobby.

Hams come in many shapes and sizes, and the hobby is enjoyed by young and old. My own introduction came about two years ago via John Moore, N1FOJ. I attended a radio class taught by Larry Beavers, W1GTA, who is a broadcast engineer and a great teacher.

Amateur Radio is like having the world in your home. I've talked to people in places I never knew existed, like Keith Berke in the Seychelles, or Bill Faulkerson in Pago Pago, American Samoa.

After you become an Amateur Radio operator, you find yourself looking up a lot—seeing what types of antennas are out there, and seeing where fellow amateurs live.

It was on one such occasion that I noticed a bunch of towers and all kinds of antennas right down the road from me. I decided to pull in and introduce myself, and am I glad I did. It was there that I met a new friend, a living amateur legend, Carl Evans, W1BFT.

Evans has been a "radio man" since 1925 when, at age 15, he got his first Amateur Radio license. A man named Sam Powers got him started. Powers told Carl and his friend Gil that the first one of them to pass the test could have his radio. Carl passed first.

A year later, Carl was listening to his radio and was able to make contact with the polar expedition led by the famous American explorer, D.B. Mac Millan! They asked Carl to relay some information to their suppliers, and of course, he did so gladly. His kindness was rewarded by a gift of a box of spices which he gave to his mother.

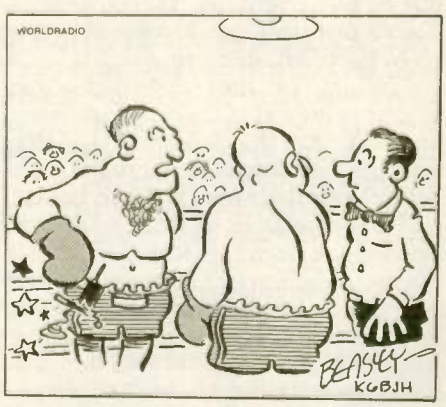
At age sixteen Carl Evans joined the Navy as, of course, a radio man. Some 18 years later on June 6, 1944, D-Day, Carl Evans stood on the deck of the *USS Texas* with the rank of Lieutenant Commander. "It was rough on those boys in Normandy, and if I close my eyes I can see it as if was yesterday."

After the war and retirement from the Navy, Carl Evans returned to his Bow, New Hampshire hometown. He founded Evans Radio which served the community for many years. Evan's wife Dot was an Amateur Radio operator as well. Darned good at it, too, Carl relates. He showed me some pretty impressive trophies she had won.

Carl Evans, W1BFT, is 85 years old now. He is a CW-only operator.

Now, I thought my code was pretty good after recently earning my Extra class license; but when I sat with Carl during an international CW contest not long ago, he leaned forward and listened to a buzz go by, and relayed the QSO to me. It was a blur to me, but a conversation to him. Now that is a real "radio man." WR

W1BFT in the shack. Awards on the wall attest to his skills.



HE HIT ME ON MY HANDHELD RADIO -- THAT'S BELOW THE BELT, AIN'T IT?

AERIALS

Kurt N. Sterba

In the Northeast corner of these United States is what must be certainly an absolutely brilliant antenna company.

Let us closely examine one of their products. It is a three-element, multiband (20-15-10) trapped Yagi.

Claimed gain over a dipole is eight dBd. (For the moment let us put aside that practically nobody believes that a trapped tri-bander will have eight dBd.)

The same company also manufactures a monobander (20M) Yagi and claims that it also has eight dB gain over a dipole.

WOWOW! Just think about it! What an engineering breakthrough!

Their **trapped** Yagi has elements about 23% shorter (27.75 ft. vs 35.95 ft.) than the trapless monobander. Their **trapped** Yagi has a boom 30% shorter (14 ft. vs. 20 ft.) than the trapless monobander.

But yet, the **trapped** Yagi has exactly the same gain as the pristine monobander. Say, that is an accomplishment isn't it? Spectacular to be sure. Not even a mere (undetectable) one (1) dB down or even a .1 (1/10) dB down. But, right on the old button. You've certainly got to take your hat off to that feat, don't you?

(Hmmm, Lil read the page above after it came out of the old Underwood and said, "Are they telling us that they can't get their monobander to work any better than their own trapped beam?)

New subject: In response to some previous columns in which I pointed out some excessive claims on the part of manufacturers a couple of letter writers called such topics boring. Alright. If you feel that the fact that there are manufacturers that hold you in utter contempt is "boring," so be it. It's kind of like what Nikita Khrushev once said about Americans, "You spit in their face and they call it dew."

Then we turn to the *Newington News*. Within the product review of a Yagi, in a recent issue was this: "As the C-3 manual states, 'If the VSWR is measured directly at the feed point, the 2:1 points on 15 and 10 meters will not span the entire band: however, making use of a particular phenomenon with coax cable, the VSWR response is flattened out and the C-3 covers all the bands with 2:1 or less across the entire band.' "

HO! I'll bet quite a few old timers got a real hoot out of that one. For newcomers, I'll explain. That "particular phenomenon with coax cable" (this is almost too funny for words) is, where I work, called LOSS!

What has happened is that the reflected power that you expected to read on your meter does not appear because of the inherent LOSS of the cable. The same SWR at the antenna's feedpoint still exists. It has not changed one iota.

NO! NO! Contrary to the article saying, "and the C-3 covers all bands with 2:1 or less across the entire band," nothing at all has changed up at the antenna. Run 500 feet of coax and you'll be 1:1 across the band. Run 1,000 feet and you'll be 1:1 across all the bands.

The members of the 10-10 International are pretty lucky. The ham who writes their antenna column, L. B. Cebik, W4RNL, is pretty sharp! And, Dale Hunt, WB6BYU, in Yamhill, OR, is a real crackerjack.

In perusing yet another issue of *23 Skidoo* I saw a product writeup for an antenna from England. It is for all HF bands from 14 MHz and up.They take half-wave dipoles, fold them into a square and interlace them. It is horizontal, parallel to the ground and looking like one element of Cubical Quad, only half the size.The price is over $300. For the same amount of money you could buy a regular Cubical Quad with two elements. You could make four of the advertised antennas.

Then I read this letter addressed to Uncle Wayne, "My main desire is for a *good* mobile antenna that is short enough to go into a parking garage and still produce a walloping signal."

See, you don't have to watch TV to find funny stuff.

Word is whizzing around about an antenna manufacturer who is all atwitter because his antenna didn't do well at one of those HF Mobile Shootouts on 75M. Let's take a look at this.

In the data sheets, (NOT the advertisements) is this statement about his antenna: "will typically yield 20 dB of gain over a conventional 1.8 [illegible] mobile installation."

Then there are six paragraphs [illegible]ing out the engineering differences [illegible] his antenna. At the end of each paragraph we find the following

(1.) "XXX gains 3 to 6 dB."

(2.) "XXX gains another 3 to 6 dB."

(3.) "With XXX, you'll pick up 3-6 dB."

(4.) "The XXX with the XXXXXX antenna scores another 3-6 dB advantage."

(5.) "Chalk up another 3 to 6 dB for XXX."

(6.) "That's at least 3 to 6 dB more for XXX!"

Adding up the 6dB mentions, we see a grand total of 36 dB. Being ultra-conservative and only adding up the 3dB mentions we get 18dB. But since one mention said "at least," we'll go up to 20. Does that make the high-side count 40dB?

Here's a statement from the product literature: "you can get more than 20 dB of gain by simply using an XXX compared with any other 1.8 to 30 MHz system." WOW! Over ANY other ????

OK, if said manufacturer shows up at a HF Mobile Shootout (put on by a competent amateur group) and his antennna places not 40, not 36, not even "more than 20" not even 20, (to

ce guy I am, we'll take .707 x 20) but only 14 would be the otherwise ıa (75M, 50W input, nd level distance) I will he charity of his choice. r claim was "over any other."

I was looking through licensing manuals written by an amateur I'll call "Gene Wilder." In the book the spacing between the elements of a two-element Cubical Quad is given as one-quarter (1/4) wavelength. Many believe it to be actually one-eighth (1/8) instead.

We're told that with an SWR of 4:1 "you won't get many contacts."

The author tells us this: "All stations on all frequencies emit ground waves that hug the earth. They travel out from your transmitter antenna up to approximately 100 miles." That was in a book for potential Novice and Technician licensees. Who needs Woody Allen and Mel Brooks movies when we have license manuals?

I've got lots of pages dog-eared (which Lil hates) but since I do not want a new life's career pointing out mistakes in that series of license manuals I will move on.

For some lucky reader of this column these brand new, fresh from the factory items: MFJ HF/VHF SWR Analyzer with RF Resistance Meter (1.8 to 170 MHz), Carrying Pouch, and Dip Meter Adapter. Retail value is $259.85 and ***Worldradio*** will pay the shipping.

Absolutely no purchase necessary. All you have to do is put your name, call and address on the back of a postcard, address the front to MFJ SWR Analyzer, ***Worldradio***, 2120 28th St. Sacramento, CA 95818. All the entries will be placed in a box. Sixty days after receiving the first entry, one card will be pulled out as the winner. Only one entry from each ham please. (Entries will be cross checked.)

This is not being announced anywhere else in this magazine — just for Kurt's pals.

*(**Worldradio's** mystery man "Kurt N. Sterba" writes articles, the likes of which would appear in other ham magazines, if they had a sense of responsibility toward their readers.)* **WR**

CONTESTS

New Jersey QSO Party

The Englewood Amateur Radio Association, Inc. invites all amateurs the world over to take part in the 36th Annual New Jersey QSO Party.

Rules

1. The time of the contest is from Saturday, 19 August, 2000 UTC to 20 August, 0700 UTC and again on 20 August from 1300 UTC to Monday, 21 August 0200 UTC.

2. Phone and CW are considered the same contest. A station may be contacted once on each band — phone and CW are considered separate bands. CW contacts may not be made in phone band segments. New Jersey stations may work other New Jersey stations.

3. General call is "CQ New Jersey" or "CQ NJ." New Jersey stations are requested to identify themselves by signing "DE NJ" on CW and "New Jersey calling" on phone. Frequencies are 1.810, 3.535, 3.950, 7.035, 7.135, 7.235, 14.035, 14.285, 21.100, 21.355, 28.100, 28.400, 50-50.5, and 144-146. Suggest phone activity on the even hours; 15 and 10 Meters on the odd hours 1500 to 2100 UTC; 160M at 0500 UTC.

4. **Exchange:** Consists of QSO Number, RST, and QTH (State/province or country). New Jersey stations will send county for their QTH.

5. **Scoring:** Out-of-state stations multiply number of complete contacts with New Jersey stations times 3 points per QSO times the number of New Jersey counties worked (maximum of 21). New Jersey stations multiply number of complete contacts times 3 points per QSO times the multiplier. The multiplier is the sum of the number of states (other than NJ), provinces, and NJ counties worked —maximum is 49 + 12 + 21 = 82.

6. Certificates will be awarded to the first place station in each New Jersey county, ARRL section, and country. In addition, a second place certificate will be awarded when four or more logs are received. Novice, Technician, and mobile operator certificates will also be given. A total of four plaques have been donated by the ARRL Section Managers for NNJ and SNJ to the highest scoring single operator station residing in each of their sections (separate for Novice/Technician and all other classes).

7. **Logs:** Must also show the UTC date and time, band, and emission, and be received no later than 16 September 1995. The first contact for each claimed multiplier must be indicated and numbered and a checklist of contacts and multipliers should be included. Multi-operator stations should be noted and calls of participating operators listed. Logs and comments should be sent to: Englewood Amateur Radio Association, Inc., Post Office Box 528, Englewood, New Jersey 07631-0528. A #10 size SASE should be included for results.

8. Stations planning active participation in New Jersey are requested to advise EARA by 1 August so plans may be made for full coverage from all counties. Portable and mobile operation is encouraged.

Clubs: Please pass this notice around to your club members. Club competition would be appreciated.

Nets: Please announce the QSO party on your net often.

Maryland-DC QSO Party

The Antietam Radio Association presents the 1995 edition of the Maryland-DC QSO Party 12 August 1600-0400Z and 13 August 1600Z-2359Z. Phone & CW: CW QSOS in the CW bands only. Stations may be worked once per band using each mode.

Rules

1. Non-MDC Stations must work only M-DC stations. M-DC stations may work anyone.

2. Portables and mobiles that change counties during the test count as a separate station in each new county of operation. Sorry, no packet or repeater QSOs allowed. QSOs part of a regularly scheduled net are not allowed.

3. **Exchange:** QTH and major category of entry. QTH is county for Maryland stations, U.S. state, Canadian province or country as appropriate for Non-M-DC stations. Major categories are club, QRP, mobile, Novice/Tech, and standard. Stations should send the major category

that reflects their highest point value.

4. **Suggested frequencies:** SSB 3.92, 7.23, 14.26, 21.37, 28.38, 50.15, 146.55 MHz.

CW 3.643, 3.701, 7.035, 7.126, 14.04, 21.115, 28.04, 28.115 MHz CW is suggested on the odd half hours. Examples 17:30, 19:30, 21:30, 23:30, 00:30, 03:30.

5. **Scoring:** For non-M-DC stations — each MD county + Baltimore City M-DC are multipliers (25 possible).

For M-DC stations - The basic 25 as above + each of the other 49 states + Canadian Provinces + 1 for other DX. Multipliers may be claimed once only, they do not repeat on the other bands.

6. **QSO points:**

Ten (10) points for club station QSOs (Clubs anywhere for M-DC stations).

Five (5) points for Mobile QSOs (Mobiles anywhere for M-DC stations).

Four (4) points for QRP or Novice/Tech QSOs regardless of mode.

Three (3) points for CW or RTTY QSOs with Standard stations (RTTY & CW count as same mode for scoring purposes).

One (1) point for any other valid contact (Standard SSB and FM).

Highest single point value applies. Example: Contact with a mobile club station is a 10 point QSO.

7. **Final score:** Add up the QSO points and multiply by the sum of the multipliers.

8. **Logs:** Send logs with SASE by 10 September to the ANTIETAM RADIO ASSOCIATION, P.O. Box 52, Hagerstalm, MD 21741-0052.

9. **Awards:** Plaque to the high scoring M-DC Station, the top non M-DC station, and to the Maryland-DC Club with the high scoring entry. Certificates awarded for all other categories including 10 best M-DC logs. Best each U.S. state, Canadian province, DX country, M-DC mobile, best YL entry, high QRP entry from each state. Also to best Novice/Tech entry/state. WR

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Random access humor

But officer, the stop sign was green when I went through it.

Dachshund kennel ad: Get a long little doggie.

The trouble with troubleshooting is that trouble shoots back.

Having failed to conquer myself, I hope for an alliance.

I made it foolproof, but they're making better fools.

Dijon vu: the feeling you've tasted that mustard before.

Atheism? I don't believe in it.

We're sorry, reality is not in service at this time.

Dr. Livingston I. Presume (Dr. Presume's full name).

—*Squelch Tale,* Chicago FM Club

California

The LIVERMORE ARK is sponsoring an Amateur Radio/Electronic/Computer Swap Meet on 6 August, 7 a.m. to 12 noon at Las Positas College. Features include refreshments, free parking and covered spaces in the event of rain. Admission is free. Sellers pay $10 space fee. No setup until 7 a.m. Contact Noel Anklam, KC6QAK, at 510/448-3857 eves. or leave message days at 510/783-2803. Talk-in on 147.045(+) (PL 94.8) from the west and 145.35 (-) (PL 100Hz to receive and send) from the east.

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The ARRL SOUTHWESTERN DIVISION Convention 'HAMCON 95' will be held 1-3 September on the Queen Mary in Long Beach, CA. Features include speakers, hospitality suites, DXCC checking, auction, ladies program, tech programs, etc. Pre-registration required by 20 August. Admission is $12 in advance; $15 at the door. For more information, contact Chairman Nate Brightman, K6OSC, 310/427-5123. For room reservations call 800/437-2934. Checks payable to: HAMCON Inc., P.O. Box 2111, Winnetka, CA 91396.

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The SANTA BARBARA ARC will hold a hamfest on 13 August from 8 a.m. at Santa Barbara Elk's Lodge #613, 150 Kellogg Ave., in Goleta. Features include VE session for all grades at 8:30 a.m. (call Darryl, KF6DI, 805/969-2326 for reservations); barbeque; 2 Meter find the T-Hunt; best QSL card contest; transformer toss. For information, plese write SBARC, P.O. Box 3232, Santa Barbara, CA 93130; 805/569-5700. Talk-in on 146.79(-), PL 131.8.

Colorado

The MOUNTAIN ARC will hold a swapfest on 26-27 August at Quaker Ridge Camp located 6.5 miles north of Woodland Park City center on Highway 67 north (M.P. 82.5). Gates will open after 2 p.m. Friday, 25 August, to setup for camping and swapfest. $10 per space to camp and/or sell daily; no double charges. Advance registration to camp essential; write MARC at P.O. Box 1012, Woodland Park, CO 80866-1012 promptly, or call Don Chamberlain, AAØNW, at 719/687-3692, or Fred, NØPKA, or Patty, NØPSD, at 719/687-9727. Send an SASE for event information sheet. Talk-in on 146.82(-).

Delaware

The Sussex ARA will hold a hamfest on 20 August, 8 a.m. to 2 p.m. at the Delaware Technical and Community College on Route 18 in Georgetown. Admission is $4; XYL and children free. Tailgating $5 per space; $8 for inside tables, limited electric power available. Food available. VE test registration begins at 8 a.m. For information, contact Delmarva Hamfest, Route 2, Box 244G, Georgetown, DE 19947. Talk-in on 147.075(+) or 224.84(-).

Florida

The GREATER JACKSONVILLE AMATEUR RADIO and computer show/ARRL Southeastern Division Convention will be held 5 August (9 a.m. to 5 p.m.) and 6 August (9 a.m. to 2 p.m.). Setup for vendors is 2-6 p.m. on the 4th and 7-9 a.m. on the 5th. Among forums scheduled are presentations on emergency communications, ARRL, antennas, digital modes, and YL activities. Admission is $8; swap tables are $20 for the weekend. Table holders must purchase an admission ticket. FCC exams for all grades of Amateur Radio and commercial exams will be administered on the 6th at 9 a.m. Walk-ins are welcome. To reserve tables, contact Karl Hassler, N4DHG, at 2767 Scott Circle, Jacksonville, FL 32223. For general information, contact Greater Jacksonville Hamfest Assn., P.O. Box 27033; Jacksonville, FL 32205 or call 904/350-9193.

Illinois

The HAMFESTERS RADIO CLUB, INC., will hold a hamfest on 6 August, from 8 a.m. (setup 3-11 p.m. on the 5th) at the Will County Fairgrounds in Peotone. Features include exhibitors and convenient unloading and overnight parking. Admission is $4 in advance or $5 at the gate. Send reservations to John Fleming, N9NDH, 13800 Division St., Lot 215, Blue Island, IL 60406.

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The CHICAGO ARC will hold a hamfest on 27 August, 8 a.m. to 3 p.m. in Oak Brook Terrace. Entrance at Park View Dr., north of Cermack Rd (22nd St.), one block west of Route 83. Tickets $4 in advance, $5 at the door. Rain or shine, enclosed parking lot open on one side, clearance 6' 8". Tailgate sales space based on two outlined spaces per ticket. Setup 6 a.m. 8' tables $12. For information and reservations, call 312/545-4740, 312/545-3622 or leave message on 312/666/1606. You may

write CARC, 5631 W. Irving Park Rd., Chicago, IL 60634. Talk-in on 147.25(+) and 444.825(+).

Indiana

The PORTER COUNTY ARC will hold a hamfest on 5 August from 8 a.m. (vendor setup 6 a.m.) at the Porter County Expo Center. Parking lots open at midnight and parking is free. VE testing from 9 a.m. to noon. Admission is $4 in advance, $5 at the door. Indoor tables $8 (with electricity $13). Outdoor space available, food and drinks available. For tickets, reservations or information, contact Rich, N9QLQ, PCARC HamFest, P.O. Box 1782, Valparaiso, IN 46384; 219/762-8701. Talk-in on 146.775(-) or 146.52(S).

Kansas

The CHANUTE AREA ARC will hold a hamfest on 12 August, 8 a.m. to 2 p.m. at the Chanute National Guard Armory, 3051 S. Santa Fe, Chanute. Admission is $5, children under 12 are free. For information, call Jerry Young, 316/431-3268; Charlie Ward, 316/431-6402; or Ted Nantz, 316/537-6001 evenings. You may also send SASE to Jerry Young, KGØEM, 1333 W. Sycamore, Chanute, KS 66720 for tickets. Talk-in on 146.75(-).

Kentucky

The BLUEGRASS ARS, INC., will hold a hamfest 13 August. Features include sales exhibits, guest speakers, technical, Novice and ARRL forums and FCC license exams, all in air-conditioned facility. Space is provided for an outdoor flea market at no charge except price of admission. Admission is $5 in advance or $6 at the door. Table reservations are $25 for inside vendor area in advance or $35 at the door (if received after 1 August). For information, contact Bill De Vore, N4DIT, 112 Brigadoon Pkwy, Lexington, KY 40517; 606/257-3343 days; 606/273-8345 evenings.

Massachusetts

The WELLESLEY ARS and BABSON WIRELESS CLUB will hold a hamfest on 6 August, 9 a.m. to 2 p.m., at the PepsiCo Pavilion, Babson College, in Wellesley. VE exams 11:30 (register by 11:00). Admission is $2, tailgate area-free; vendors indoor table $10 in advance, $14 at the door. Tailgate space $7 in advance, $10 at the door. Contacts are Barbara Holdridge, N1ICQ, or Gerry Driscoll, NV1T, at 107 Church St., Westwood, MA 02090, 617/329-2628.

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The MOHAWK ARC will hold a hamfest on 26 August, from 8 a.m. (setup 6 a.m.), rain or shine at the Mohawk Drive In Theater in Gardner. Admission is $2 at the gate and spaces are $5. Register in advance for reserved spaces. For advanced registration send your name, address and phone number to MARC, P.O. Box 532, Athold, MA 01331. For more information, contact John, WF1L, 508/249-5905 from 4 p.m. to 9 p.m.; Paul, N1IPG, 508/632-9432 from 6 p.m. to 10 p.m.; or Tom, N1KKY, 508/249-4521 from 5 p.m. to 9 p.m. Talk-in on Templeton repeater 145.37(-).

Michigan

The BAY AREA ARC, GENESEE COUNTY RC, LAPEER ARA, MID-MICHIGAN WIRELESS ASSOCIATION, and SHIAWASSEE ARA will hold a five county Amateur Radio & computer swap-n-shop on 27 August, from 8 a.m. (setup 6 a.m.) at the Shiawassee County Fairgrounds, 2900 E. Hibbard Rd., Corunna. Plenty of parking, single level layout, trunk sales area, easy access from freeways, food and drink on site. Admission is $4; 8' tables $10 in advance (sales end 12 Aug.) $15 at the door; trunk sales $7, $15 at the door. For information call Jan at 517/893-3475. Advanced table registration, trunk sales and ticket form along with SASE to: Five County Swap-n-shop, 1214 McKinley Ave., Bay City, MI 48708. Talk-in on 147.02(+) or 146.52(S).

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The LIVINGSTON AR KLUB will hold a hamfest on 27 August, 8 a.m. (vendors setup 6 a.m.) to 3 p.m. at the Fowlerville Fairgrounds in Fowlerville. Features include Amateur Radio gear and computers. VE exams start at 9 a.m. Admission is $4. Table reservations are $8 per 8'. Covered trunk sales are $5 per space. Table rental is not considered admission. Send SASE to: LARK, P.O. Box 283, Howell, MI 48843; or call John at 517/548-1412. Talk-in on 146.68(-).

Minnesota

The ST. CLOUD ARC will hold a hamfest on 13 August, 8 a.m to 2 p.m. at Whitney Senior Center in St. Cloud. For tickets and information contact WØSV, P.O. Box 141, St. Cloud, MN 56302 or WØSV@NFØH.#CMN.MN.USA.NOAM. Talk-in on 146.94(-) or 147.015(+).

Nevada

The SIERRA NEVADA ARS will hold a hamfest on 12 August at Stead facility located 10 miles North of Reno on Highway 395N. From I-80 proceed north on 395 10 miles. Take the STEAD exit. Bear right onto Stead Blvd. At the fork go to the left on Mt. Babbock and then left on to Mt. Anderson, Stay on Mt. Anderson to the hamfest. VE exams will be given at Noon, preregistration suggested. Admission is $3, food and drink available on site. Swap spaces are $10. Send all fees, requests, etc., for swap spaces to Robert Davis, KG7IY, 3775 Sleepy Hollow Dr., Reno, NV 89502; 702/856-2826. Send fee of $5.90 for VEs to Jessie Bond, N7BIP, 2860 Santa Ana Dr., Reno, NV 89502; 702/826-0329. Talk-in on 146.61(-), PL 123.

New Jersey

The SPLIT ROCK/WEST MORRIS RADIO CLUBS will hold a hamfest 5 August at the NJ National Guard Armory on Route 23 in Riverdale. For information or reservations call Bernie, WB2YOK, Fax/voice 201/584-5388 (24 hours) or Steve, KF2TI, KF2TI@aol.com Talk-in on 146.985(-) or 223.860(-), PL 136.5.

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The SOMERSET COUNTY ARS, INC., will hold a hamfest on 26 August from 8 a.m. to 1 p.m. at the Somerset County 4H Center. Admission is $4 (XYL and children under 12 are free). Indoor tables are $20 with power (reservations required), $15 without power. Outdoor tailgating is $10 per tailgate space. Contact SCARS, P.O. Box 742, Manville, NY 08835 or Eric, NW2P at 908/753-8290. Talk-in on 146.52(S) or 448.175(-).

New Mexico

The DUKE CITY hamfest will be held on 26 August from 7 a.m. (setup after 6 p.m. on the 25th) at the New Mexico Army National Guard Armory in Albuquerque. Admission is free. Tables $10 before 21 Aug. Limited power available so call ahead to: 505/821-2771 or 147.15 MHz repeater. No one admitted under 16 without parent or guardian. VE exams will be given. Talk-in on 147.15(+). For Internet queries: WA5WHN@rt66.com

New York

The THOMPKINS COUNTY ARC will hold a hamfest 12 August at the Dryden High School in Dryden, located near the intersection of Rtes. 13 and 38. Features include classes and demos, breakfast and lunch, VE testing, flea market and large indoor area. Admission is $4 in advance; $5 at the door, under 18 free. For information, call Richard Spingarn, AA2UP, at 607/387-5251 until 10 p.m. Talk-in on 146.97(-).

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The PIONEER RADIO OPERATORS SOCIETY will hold a hamfest on 26 August, 7 a.m. to 3 p.m. in Manion Park, just off Route 16. Features include exhibitors, food and awards. Map and tickets $3 in advance, $4 at the gate. Please send SASE to Mike Wrona, 139 Greenmeadow Drive, West Seneca, NY 14224.

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The RADIO AMATEURS OF GREATER SYRACUSE (RAGS) will hold a hamfest on 26 August from 8 a.m. (flea market setup 7 a.m.; 8 a.m. for indoor commercial vendors) at Academy Green American Legion, one block west of Route 173 and South Salina Street intersection.

Features include breakfast, lunch, prizes, ARRL, tech-talks, computers, VE exams, and is wheelchair accessible. Admission is $5, (16 and under free). Flea market $3 per 10' space. Calls to 315/469-0590 will be returned or write to RAGS, P.O. Box 88, Liverpool, NY 13088.

Ohio

The WARREN ARA will hold a hamfest on 20 August, 6 a.m. to 3 p.m. at the Trumbull Branch Campus of Kent State University in Warren. Features include air-conditioned indoor area; 5-acre flea market on campus; walk-in VE exams (10 a.m.); meeting rooms; forums; food and refreshments and free parking. Admission is $4 (under 12 free); exhibitors $8 per 8' table; flea market $3 per 10' space. For information, contact Al VanSlyke, N8IKK, WARA Hamfest, P.O. Box 809, Warren OH 44482; 216/889-3378.

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The UNION COUNTY ARC will hold a hamfest on 20 August, 8 a.m. to 2 p.m. at the Broadway Ohio Community & Civic Complex, 1 mile west of intersection State Routes 31 and 347, on 347. Features include hamfest post office with pictorial cancellation, commemorating the hamfest. U.S. post office at hamfest. Bring your QSL cards for cancellation and mailing. ARRL booth; computer dealers; flea market; VE exams (no p/r required, registration 9 a.m.). Admission $4 in advance, $5 after 11 August. Vendor table $15; flea market 10' space $5. Vendor setup 19 Aug, noon to 9 p.m. and 20 Aug 6 a.m. to 8 a.m. For information, contact Gene Moore, N8YRF, 24461 Claibourne Rd., Marysville, OH 43040; 513/246/5943. Talk-in on 147.39(+) or backup repeater KE8DQ 145.35(-) PL127.3.

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The PAULDING COUNTY ARG, INC., will hold a hamfest on 12 and 13 August, from 8 a.m. (setup after 9 p.m. on Sat and 6 a.m. on Sun.) at the Paulding County Fairgrounds. Features include free overnight camping, door prizes, and food service. Admission is $3 (under 12 free). Flea market spaces/tables $2; inside tables (8') $10. For information, contact Jerry Rhodes, 10392 SR 500, Paulding, OH 45879; 419/399-4507. Talk-in on 147.28(+) or 444.225(+).

Pennsylvania

The MIDATLANTIC ARC will hold a hamfest on 6 August at the Bucks County Drive-In, located in Warrington on Route 611, 5 miles north of PA turnpike. Admission is $5 per person and $5 per tailgate space. For further information, contact MARC, P.O. Box 352, Villanova, PA 19085 or call Bob, WA3PZO, evenings at 215/624-4034, packet@WB3JOE.PA or Bjousuweit @aol.com

South Dakota

The HURON ARC will hold an electronics swapfest on 12 August, 8 a.m. to 3 p.m. at the National Guard Armory, SD State Fairgrounds, in Huron. Features include VE testing (9 a.m.); flea market (setup 7 a.m.); eyeball QSOs; lunch available. Admission $3; tables $5. Contact Lloyd Timperley, WBØULX, P.O. Box 205, Huron SD 57350; 605/352-7896 evenings. Talk-in on 146.82(-).

Tennessee

The SHORT MOUNTAIN REPEATER CLUB will hold a hamfest on 27 August, 7 a.m. to 3 p.m. at the Cedars of Lebanon State Park, U.S. Highway 231, 7 miles South of I-140. Features include outdoor facilities only, exhibitors bring your own tables—space available on a first come basis. Food and drinks available. Admission is free. Contact Thomas Page, AD4AI, P.O. Box 2741, Lebanon, TN 37088; 615/449-5610. Talk-in on 146.91(-).

Washington

The LOWER COLUMBIA ARA of Longview will hold a hamfest on 19 August, 9 a.m. to 3 p.m. at the Cowlitz County Fairgrounds in Longview. Swap and commercial tables inside main building with tailgate sales outside. RVs may park overnight Friday for $10, electrical hookups available. Admission is $3. Swap tables are $12 before 5 August, $15 after. Commercial tables $15 and tailgate space is $5. Parking is free and food will be available. No VE session. Contact Bob Morehouse, KB7ADO, 360/425-6076 evenings, or write LCARA Swap Meet, P.O. Box 906, Longview, WA 98632. Talk in on 147.26(+) PL 114.8.

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The EASTERN WASHINGTON ARRL Spokane hamfest will be held on 5 August (9 a.m to 5 p.m.) and 6 August (8 a.m. to noon) at University High School, 10212 E. 9th Avenue, in Spokane. Features include dealers, seminars, demos, VE testing, prizes, bazaar, steak feed. Admission is $4 before 20 July or $5 at the door. Steak feed $5 per person. Vendor setup 6 p.m. to 9 p.m. 4 August and 8 a.m. to 9 a.m. 5 August. Tables $5 each. Contact JoAnn Gemmrig, KA7SUZ, 6812 E. Third, Spokane, WA 99212; or call 509/928-1808 or fax 509/921-6912. Talk-in on 146. 52(S), 147.38(+) or 223.90(-).

Wisconsin

The RHINELANDER REPEATER ASSOC., and NORTHWOODSARES will hold a hamfest on 12 August, 8 a.m. to 2 p.m. at Sugar Camp Town Hall, 13 miles North of Rhinelander on Highway 17 to Camp Four Road in Sugar Camp. Setup 11 Aug 6 p.m. to 10 p.m. and 12 August 6 a.m. Features include food and beverages, VE testing at 11 a.m. Admission is $2. Contact Mary Berger, NS9Q, 367 Lois Street, Rhinelander, WI 54501; 715/362-9296. Talk-in on 146.94(-).

West Virginia

The TRI-STATE ARA will hold a hamfest on 12 August, 9 a.m. to 2 p.m. at the Cabell-Midland High School, U.S. Route 60 at Ona. Features include Amateur Radio gear, computers, antennas and other related equipment. There will be VE testing, forums on amateur TV packet; flea market will be in air-conditioned gymnasium. Free parking; food and refreshments available. Setup time 7 a.m. Admission is $5 at the door (children under 6 free). For information on tables and electric power for dealers and flea market spaces, contact Mr. Mike Taylor, KB8GCA at 304/429-1667 or write to TARA, P.O. Box 4120, Huntington, WV 25729. Talk-in on 146.76(-), 146.64(-), 146.52(S) or 444.85(+).

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The MID-OHIO ARC will hold a hamfest on 5 August at the Wood County 4-H Grounds in Mineralwells, WV (near Parkersburg, I-77, Exit 70). Features include crafts for family, demonstrations, refreshments and free parking. Admission is $4; outside tables $4 (under canopy); inside tables $5; free tailgating. For information, call 304/485-777 or write: Bill McClure, c/o MOVARC, P.O. Box 791, Parkersburg, WV 26102. Talk-in on 146.74(-).

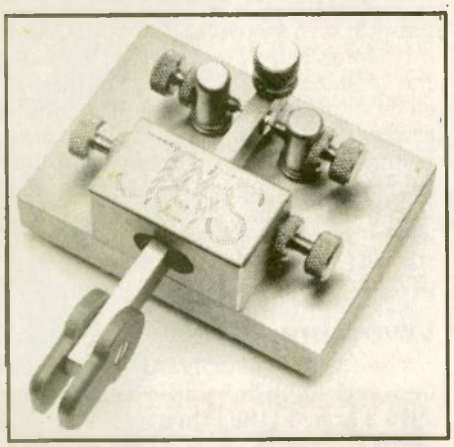
Wyoming

The ROCKY MOUNTAIN DIVISION Convention will be held 4-6 August, doors open 8 a.m. on the 5th, at the Virginian Hotel in Jackson Hole. Make your reservations early; a block of rooms will be held until 1 July. Reservations can be made at 800/262-4999 (RVs as well). Tell them you are with WIMU for special rate. Features include packet, advanced and beginning antennas; SAR; VE testing (w/i welcome); DXpeditions and DX; featured speakers. Registration is $10 in advance or $13 at the door; swap tables $5 each; brunch/WIMU meeting $8.50 each. Send to: Warren Morton, 1341 Trojan Dr., Casper, WY 82609; 307/235-2799. **WR**

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

PK-203 Jones Key

Palomar Engineers announces a new addition to their line of Jones keys, Model PK-203, a single lever key. The lever features dual rotary ball-race bearings, individual spacing and spring tension for dot and dash contacts, adjustable center-



ing force, and individually adjustable paddle heights. The key and its base are made entirely of brushed finish brass. The serial number is engraved on each key. Adjustments are made by fine pitch screw threads with instrument knurled thumbscrews. No tools are required. The key weighs 3-3/4 pounds and is priced at $195 plus $6 S&H.

For further information contact Palomar Engineers, P.O. Box 462222, Escondido, CA 92029. Phone 619/747-3343. Fax 619/747-3346.

Allbander Doublet

S&S CABLE COMPANY is proud to introduce the Allbander Doublet, a unique wire antenna having natural resonance on all even harmonics of 160 Meters and providing an excellent match to 50 ohm coaxial feedlines on all 9 amateur HF bands without the use of traps or tuning components which might dissipate power or fail.

The Allbander doublet is 170 feet long (3/8 wavelengths at 1.8 MHz) and tuned by a precision length of 450 ohm ladder line to create a conjugate match point at 1.8, 3.6, 7.2, 10.8, 14.4, 18.0, 21.6, 25.2 and 28.8 MHz. Its 2:1 VSWR bandwidth when installed 50 feet above normally conducting ground is 75 kHz on 160M, 150 kHz on 80M, 1.5 MHz on 10M, and "whole band" on 40, 30, 20, 17, 15, 12M. This is the only wire antenna we've ever seen that provides a sufficient match to 50 ohm coaxial transmission lines on all 9 HF bands without the need for field adjustment or any type of "transmatch," and uses no bulky, lossy traps or similar resonating devices.

The doublet itself requires horizontal space of 180' if installed as a dipole, or 90' as an inverted vee, and offers optimum performance at an installation height of 50'. It is factory preassembled and requires only support points and a 50 ohm coaxial feedline for installation. Made of the highest quality American-made materials, the Allbander Doublet uses prestretched #12 gauge pure copper, 413-strand "wire rope" radiating elements which are very flexible and completly "kinkproof." It is fed with 80' of 450 ohm ladder line, also supplied, supported by a WA1FFL "Ladder Loc" center insulator to prevent damage to the ladder line conductors at the feedpoint. Each end of the doublet is insulated by a high-quality UV resistant but lightweight insulating block preassembled to 50 feet of 3/16" double-braided Dacron UV proof rope. At the feedline connection point is a preassembled one-quarter wave coaxial RF-choke balun to minimize coaxial feedline radiation. The coaxial feedpoint connection is UHF female. All connections are weatherproofed at the factory, to make a "no maintenance required" antenna intended to provide ten years service in harsh environments.

The Allbander Doublet provides gain over a half-wave dipole on all frequencies above 3.5 MHz. It offers a broadside radiation pattern on 160-80M, and becomes somewhat directional off the element ends at higher frequencies; however, due to the many lobes the antenna presents at 15, 12, 10M, it is nearly omnidirectional above 21 MHz. For lowest radiation angle, the antenna should be mounted as high as possible above ground and all field testing has been performed at a height of 50.' At lower heights, bandwidth is improved but radiation angle is increased and the Allbander becomes a competitive Sweepstakes or Field Day antenna that might replace a number of individual dipoles, inverted vees or loops.

The antenna, which is rated 1500 W PEP or CW and uses no dissipative materials other than copper wire, ladder line and coaxial cable in its construction, was designed using "PC Wires," a unique emulation program, and was fine-tuned empirically in the field over 24 months of testing at sites having different ground conductivities.

For more information, or to order an Allbander Doublet, contact S&S CABLE COMPANY, 9010 Forbes Ave., Northridge, CA 91343. Telephone 818/895-0803. Fax 818/349-8264.

PropMan™ version 3.1

Rockwell has announced that version 3.1 of the PropMan™ high frequency PROPagation resource MANager software is now being offered to the general public at $49.95. Originally developed by the Collins Avionics & Communications Division (CACD) of Rockwell for use by U.S. and foreign governments, the software is expected to be of special interest to Amateur Radio operators around the world.

The PropMan software was designed by CACD, a successor of the former Collins Radio Company in Cedar Rapids, Iowa, which led establishment of the Amateur Radio market in the U.S. by manufacturing high quality equipment for 40 years. Many original Collins Amateur Radio products are still in service today.

With a desktop or laptop computer, PropMan software version 3.1 permits the user to determine the best frequencies on which to communicate between two selected locations anywhere in the world. The software takes into account various parameters pertaining to the day of year, time of day, station equipment, and ionospheric and solar information. Essentially, PropMan makes high frequency (HF) easier to use, and provides outputs in

graph and table formats with multiple user-selectable screens.

This software product provides a quick and comprehensive HF analysis capability for frequency management, allocation and usage. It enhances the radio frequency (RF) spectrum user's ability to easily and accurately use complex skywave propagation models through use of the integrated inputs from the Ionospheric Communications Analysis & Prediction (IONCAP) Program to improve prediction accuracy. With a telephone line connection, the software also can translate and plot real-time satellite data generated by the Space Environmental Services Center (SESC), and use these inputs to improve prediction accuracy.

Users of the PropMan software typically can calculate immediate propagation details and frequency allocations in less than 30 seconds, thereby saving valuable time. Propagation accuracy is enhanced through the use of real-time solar activity inputs to the prediction calculations, if available.

The PropMan product consists of two 3.5-inch computer diskettes, a quick start guide and an online operator's manual. Two 5.25-inch program diskettes are available on request.

Computer requirements include a 286 or higher processor (math coprocessor is highly recommended), a color VGA screen and two megabytes of conventional memory.

Price for the PropMan software is $49.95, plus tax, shipping and handling. Credit card orders can be placed by calling 800/321-2223 or 319/395-5100. Visa, MasterCard and American Express cards are accepted. Address your inquiries to Collins Avionics & Communications Division, Rockwell International Corporation, 350 Collins Road NE, Cedar Rapids, IA 52498. All software orders are shipped within 48 hours of receipt. Overnight express shipment is available in the U.S. for an additional $7.00.

KPC-3—GPS Compatible

Kantronics' KPC-3 now offers the most powerful GPS capabilities available in a TNC. To receive and retransmit GPS (global positioning system) data, the KPC-3 connects to GPS receivers with NMEA-0183 interfaces. And like the KPC-3 itself, our GPS capabilities are highly advanced for maximum performance and flexibility, yet they are very easy to use. Check out these outstanding GPS capabilities:

•**Multiple string parsing.** Users select as many as four of the GPS unit's NMEA data strings.

•**Storage of outgoing data in tracking buffers.** GPS data can be stored for later retrieval and is accessible via the KPC-3's mailbox.

•**Time-slotted location broadcasting based on the GPS clock.** Users specify beacon start time and amount of time between beacons, so multiple stations report without collision.

•**Remote access.** System operator can reconfigure the GPS unit from a remote location.

•**APRS compatible.** All these features are now standard in the KPC-3 version 6.0. For versions prior to 6.0, Kantronics offers a very low cost EPROM upgrade. Contact your authorized Kantronics dealer or Kantronics at 1202 E. 23rd St., Lawrence, KS 66046; 913/842-7745, Fax 913/842-2021, BBS 913/842-4678 for more information.

LMR-400, Ladder Line, RG8/U Flexfoam

CABLE X-PERTS, INC. has added the following new items to their product line:

LMR-400-UltraFlex. This cable is ideal for applications requiring low loss, double shielding, repeated bending, and installations in extremely tight spaces. This cable has a stranded bare copper center and a closed-cell foam polyethylene dielectric. This cable maintains excellent flexibility in any temperature environment. In addition, it has a very tight bend radius of 1 inch. The shielding is a 100% aluminum bonded foil plus a tinned copper braid, thus providing an RF shielding better than 90dB. Nominal attenuation 3.1 dB @ 450 MHz; price $.76/ft (100 ft. and up). For more details, see advertisement on page 55.

450 Ohm stranded Ladder Line. This highly flexible Ladder Line is the perfect alternative to the original version. With 16 GA 26 strands of 30 GA compressed "COPPERWELD" conductors, this Ladder Line will naturally withstand the high winds nationwide, thus greatly helping eliminate the stress-point breakage, common the original version. Price $.18/ft (100ft and up).

RG8/U "FLEXFOAM". This cable has a foam polyethylene dielectric which is rated at 78% velocity of propagation. A 10 GA solid bare copper center conductor and tow shields, made of 100% aluminum bonded foil plus 95% tinned copper braid and a black ultra-violet resistant PVC jacket. This cable is a good choice for stationary antenna systems operating in the HF and 2 Meter frequencies. Nominal attenuation of 1.6 dB @ 100 MHz. Price $.40/ft (100/ft and up).

MFJ-66 Dip Meter Adapter

The MFJ-66, Dip Meter Adapter is a sensitive and very accurate bandswitched dip meter for only $19.95.

Now, with the purchase of the MFJ-66, Dip Meter Adapter, you can turn your MFJ SWR Analyzer into a sensitive and accurate bandswitch dip meter, just by plugging in a dip meter coupling coil.

With the MFJ-66, you can save time and eliminate the guesswork of winding coils, measuring capacitance, measuring velocity factor and electrical lengths of coaxials and be able to determine resonant frequencies of tuned circuits and measure the Q of coils.

Two coils will cover 1.8-170 MHz, depending on your MFJ SWR analyzer.

For more information or to order, contact any MFJ dealer or MFJ Enterprises, Inc., P.O. Box 494, Mississippi State, MS 39762; 800/647-1800. **WR**

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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 September, please have the information to us by mid June.

p/r = pre-register

Worldradio, 2120 28th St., Sacramento, CA 95818. Please mark the envelope "VE Exams."

List the location, any information examinees should have (advance registration, etc.) and the name and telephone number (include area code) of a person to contact for further information.

w/i = walk-in

Date	City	Contact	Notes
Arizona			
9/9/95	Tucson	Joe, K7OPX 602/886-7217	w/i only
9/16/95	Tucson	Micki, AA7RR 602/883-8305	p/r req
Arkansas			
9/16/95	Mtn. Home	Gerald, WM5W 501/430-5123	p/r req
California			
9/17/95	Berkeley	Gary, N6YBD 408/255-9000	w/i only
9/9/95	Carlsbad	Rusty, AA6OM 619/747-5872	w/i pref
9/23/95	Chula Vista	Jim, KK6KZ 619/428-8418	w/i pref
9/30/95	Culver City	Scott, K6PYP 310/459-0337 or Dave, N3BKV 818/559-2572	w/i
9/2/95	Cupertino	AE6Z, 408/243-8349	w/i OK
9/30/95	Escondido	Harry, WA6YOO 619/743-4212	p/r only
9/30/95	Fairfield	Dick, AB6EY 916/791-0268	w/i pref
9/9/95	Fontana	Ken, KE6GRY 909/685-7694	
9/21/95	Ftn. Valley	Cam, KI6WK 714/846-6984	
9/5/95	Fremont	Greg, KJ6EP 510/791-6818	w/i only
9/2/95	Hesperia	619/244-1396	w/i OK
9/30/95	Klamath Falls	KG7OK, 503/883-1737	w/i OK
9/15/95	Lafayette	James, WB6LQG 503/427-4002	p/r pref w/i OK
9/6/95	Lake Isabella	Tom, KN6TS 619/379-2947	
9/9/95	Modesto	Chet, W6XK 209/883-2968	w/i OK
9/2/95	Novato	Recording 415/883-9789	p/r
9/16/95	Oakhurst	Ken, K6LFR 209/683-8245	w/i
9/17/95	Oakland	Allen, AA6UX 415/752-8783	w/i OK
9/9/95	Orange	Rick, AA6NA 310/598-0086	p/r pref
9/30/95	Pomona	Don, WA6HNC 909/949-0059	p/r pref
9/16/95	Redwood City	Joe KB6OWG 145.23(-) PL=100Hz	w/i only
9/6/95	Sacramento	Jim, AB6OP 916/393-8839	p/r pref;
		Earl, AB6CN 916/331-1115	w/i OK
9/16/95	Sacramento	Lyle, AA6DJ 916/483-3293	
		Phil, N6ZVA 916/338-3223	w/i OK
9/16/95	San Diego	Jeff, AB6NE 619/295-5852	w/i pref
9/9/95	San Pedro	N6DYZ, 310/325-2965	p/r
9/2//95	Santee	Knick, K6SK 619/466-8219	w/i pref
9/16/95	Sebastopol	Claude, 707/527-8593	w/i OK
9/16/95	Stockton	Mark, W6DKI 209/465-7496	w/i
9/9/95	Sunnyvale	408/255-9000 24-hr.	w/i only
9/9/95	Torrance	Joe, WB6MYD 310/328-0817	
9/9/95	Willits	Don, WA6ACX 707/459-3980	w/i only
Colorado			
All Colorado exams, 24-hr recording 303/360-7293			
9/9/95	Denver	Glenn Schultz, WØIJR 303/366-9689	w/i OK
9/9/95	Ft. Collins	Trent, 303/484-8315	w/i OK
9/2/95	Littleton	David Avery, 303/795-5718	w/i OK
9/23/95	Longmont	Randy Abbott 303/651-1075	w/i OK
Connecticut			
9/27/95	Shelton	Lee, WA1TSW 203/735-9476	w/i OK
Florida			
9/16/95	Melbourne	WB9IVR, 407/724-6183	w/i OK
9/21/95	Vero Beach	Roger, KC4NHB 407/567-3979	w/i OK
Georgia			
9/9/95	Augusta	Ed, KM4QQ 706/798-1918	w/i OK
Idaho			
9/9/95	Boise	Lem, W7JMH 208/343-9153	w/i OK
9/27/95	Grangeville	Steve, KD7EV 208/628-3452	w/i OK
Illinois			
9/16/95	Bolingbrook	Bob, WR9M 708/739-6015	w/i OK
9/9/95	Oak Forest	David, NF9N 708/448-0580	w/i OK
9/16/95	Loves Park	Dennis, W9SS 815/877-6768	p/r; w/i
Indiana			
9/20/95	Indianapolis	Pete Zinkan, 317/259-7610	p/r only
Kansas			
9/7/95	Newton	KAØRCK, 316/283-6042	p/r pref; w/i OK
Maryland			
9/26/95	Glen Burnie	Jerry, NU3D 410/761-1423	p/r pref; w/i OK
Massachusetts			
9/16/95	Melrose	Scott, WB1F 617/665-7654	w/i OK
Michigan			
9/16/95	Dearborn	313/676-6248	p/r pref; w/i OK
9/9/95	Marquette	Rick, N8GBA 906/249-3837	
Missouri			
9/2/95	Kimberling City	NQØG, 417/739-2888	w/i OK
Montana			
9/5/95	Great Falls	George, AA7GS 406/453-2360	w/i OK
Nevada			
9/16/95	Minden	George, WW7E 702/265-4278	w/i
9/9/95	Reno	Don, WS2Z 702/851-1176	w/i OK
New Jersey			
9/9/95	Cranford	24-hr hotline 201/377-4790	w/i OK
9/13/95	Ft. Monmouth	Gerry, WB2GYS 908/532-5354	w/i OK
9/16/95	Pennington	Don, AA2F 609/737-1723	p/r pref; w/i OK
9/4/95	Sayreville	Larry, N2ELW 908/754-5800 day; 613-8967 nite	w/i OK
New York			
9/12/95	Hicksville	Bob, W2ILP 516/499-2214	w/i
9/16/95	Long Island	Les, AA2FJ 516/364-0030	
9/1695	Yonkers	Emily, AC2V 914/237-5589	w/i OK
North Carolina			
9/10/95	Hendersonville	W2YTO, 704/891-4359	p/r pref; w/i OK
Ohio			
9/7/95	Cincinnati	Herb, WA8PBW 513/891-7556	w/i OK
9/9/95	Van Wert	Robert, KA8IAF 419/795-5763	p/r
9/21/95	Youngstown	James, N8IRL 216/534-1394	p/r only
Oklahoma			
9/16/95	Tulsa	Wayne, AB5PQ 918/743-2517	w/i OK
Oregon			
9/20/95	Florence	Hal, N7NNA 503/997-2323 or Bob, KG7VA 503/997-1222	p/r pref.
9/30/95	Klamath Falls	Brad, KE7OK 503/883-1737	w/i OK
9/13/95	Roseburg	Dick, AA7GC 503/672-7564	w/i OK
Pennsylvania			
9/2/95	Erie	Norma, W3CG 814/665-9124	w/i OK
9/8/95	Nazareth	Robin, WA3T 610/820-9110	w/i
9/20/95	Pittsburgh	Mac, KC3RJ 412/279-8756	p/r only
9/16/95	Stockdale	Lou, KA3FLU 412/938-8125	p/r only
Rhode Island			
9/14/95	Providence	Judy, KC1RI 401/231-9156 or Al, NN1W 401/454-6848	w/i
9/18/95	E. Providence	Bob, AA1CT 401/438-0935	w/i OK
9/30/95	Slatersville	Bob, W7YRC 401/333-2129	w/i OK
South Carolina			
9/16/95	Anderson	Steve, N4SZ 803/226-2198	w/i OK
South Dakota			
9/9/95	Rapid City	Frank, NUØF 605/348-6564	w/i OK
Texas			
9/30/95	Brownsville	Bob, N5VCG 210/546-4779	
9/9/95	Dallas	Larry, WR3J 214/350-5803	w/i OK
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(continued on page 65)

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FISTS polls members regarding ARS

Nancy Kott, WZ8C

The North American contingent of FISTS, the International Morse Preservation Society, in formal balloting of its membership to address the continued status, integrity, and general well-being of the Amateur Radio Service, recently approved the following Declaration of Purpose and Policy by a margin of 95 to 5 percent.

WHEREAS, FISTS, the International Morse Preservation Society, noting with concern the general trend to ease Morse Code and theory exam requirements for Amateur Radio licensing during the past two decades;

And WHEREAS, noting that easing of requirements indicates abandonment of the traditional mission of amateur radio as a technical hobby pursuant to the spirit and guidelines originally set forth in Part 97.1 of the Communications Act of 1934;

And WHEREAS, noting that an apparent correlation exists between said easing of requirements, and loss of frequency allocation amounting to more than 100 MHz (see Amateur Radio Spectrum Protection Act),

And WHEREAS, FISTS, the International Morse Preservation Society, with a U.S. membership of 850 (and an international membership of 1600):

- Finds the present multiple-choice option for demonstrating Morse Code proficiency to be at direct odds with preserving the Morse Code requirement for the Amateur Radio Service,
- Considers the multiple-choice option inconsistent with the American Radio Relay League's unconditional support of the International Morse Code, as stated in minute 41 of the Board of Directors Meeting of January 1993 (*QST*, March 1993, p. 78),
- Opposes continued easing of Morse Code requirements for the reasons that such easing of requirements is at direct odds with the unique nature, purpose, and scope of the Amateur Radio Service, and directly affects retention of frequency spectrum allocated to the Amateur Radio Service as summarized in petitions RM-8259 and RM-8260 previously filed before the Federal Communications Commission.

THEREFORE, FISTS, the International Morse Preservation Society:

- Encourages its membership who now serve as volunteer examiners to conduct, whenever possible, traditional Morse Code examinations in which one minute solid copy of plain-text is required for demonstrating Morse Code proficiency at a given speed,
- Encourages all who are or might be in a position to affect the issue, now or in the future, to maintain Morse Code proficiency as an international standard for licensing in the Amateur Radio Service,
- Urges the American Radio Relay League to support and pursue the restoring of the traditional one-minute solid copy standard as the fundamental standard for Morse Code testing for all classes of license in which there is a Morse Code requirement,
- Requests the FCC to eliminate the multiple-choice option and to restore the traditional one-minute solid copy standard as the fundamental standard for Morse Code testing.

Further information on this Declaration may be obtained from Vincent Biancomano, WB3EZG, P.O. Box 12, Schooley's Mountain, NJ 07870. WR

FAIRS wins grant

A proposal, written by David Larsen, KK4WW, and Victor Goncharsky, US5WE, has been approved for a grant of $24,873 by the United States Agency for International Development through the Eurasia Foundation. The installation of the "Ukrainian Digital Radio Network" by FAIRS Ukraine and USA will increase the communications capability internally and internationally for thousands of Ukrainian ham radio operators.

The equipment needed for such a network is almost impossible to build at home and Ukrainian hams are mainly using ancient tube type equipment.

This communications capability will benefit not only the hams but the citizens of the Ukraine by allowing rapid response to emergencies/ disasters for individuals, groups—both official and unofficial, and government emergency teams. The goal of this project is to set up a nationwide network of digital mailbox Amateur Radio stations operated by volunteer hams.

Specifically, the funds will allow extending the present Packet Amateur Radio Network in the western Ukraine to Kiev with connections to Polish, Hungarian and Czech networks allowing international links on packet radio. An interconnection gateway from the Amateur Packet Network into the information super highway, Internet, will be installed. A two meter repeater is included to facilitate wide area VHF FM communications for the first time in the Lvov area. An APLINK gateway is also included.

Ukrainian FAIRS members will be contributing thousands of hours to have this network fully operational in nine months.

FAIRS USA will provide the administrative support, purchasing, shipping and some technical assistance for the project. Most of the equipment will be purchased in the USA and shipped to Ukraine. WR

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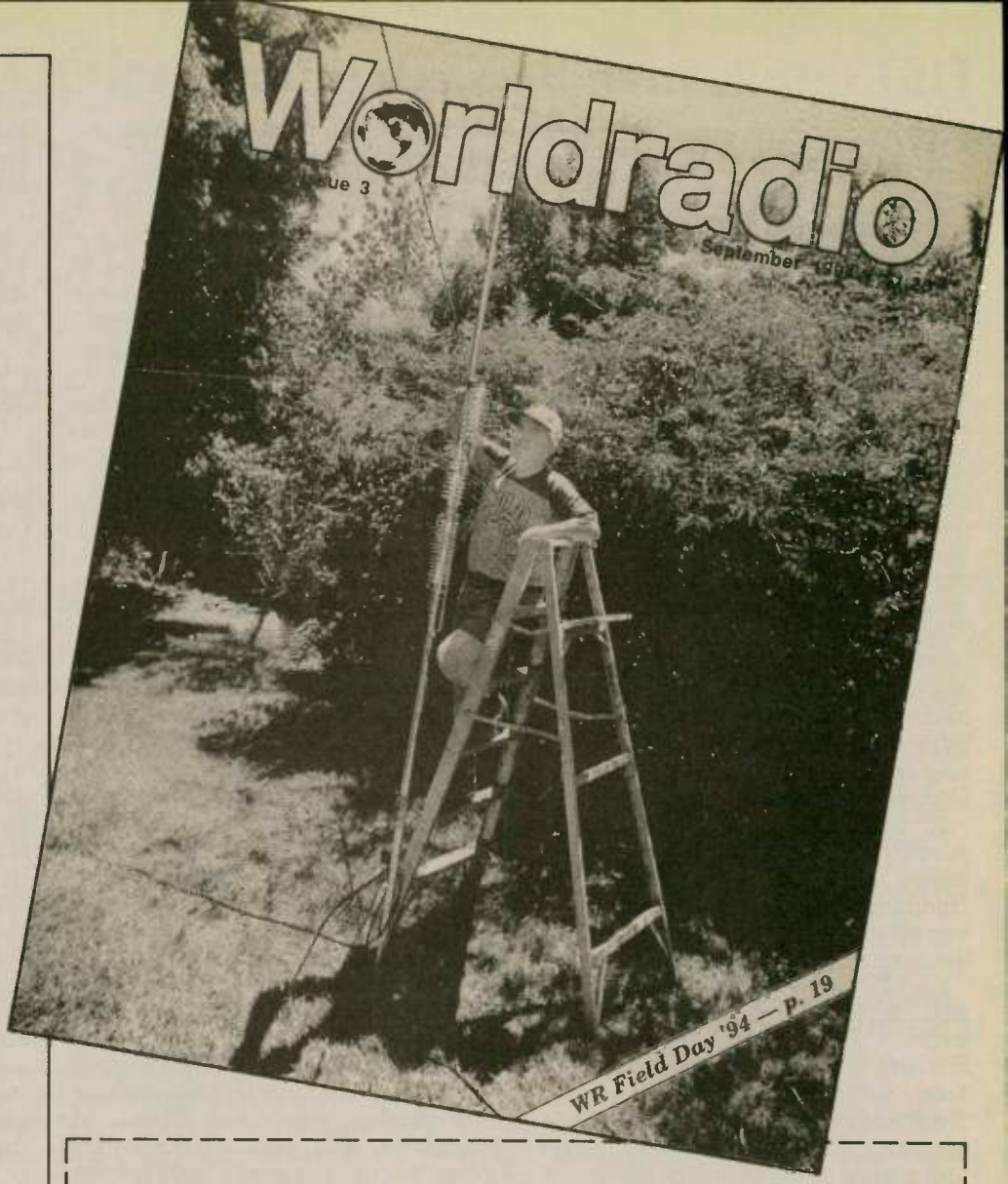

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