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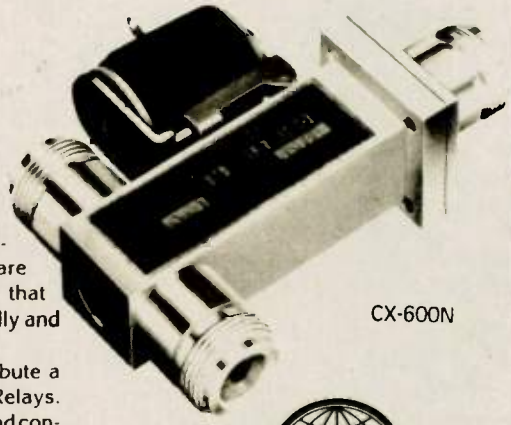

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Worldradio NEWSFRONT —

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

Radio amateurs aid in Northwest floods

Ham radio operators have responded in the wake of severe flooding that hit the Northwestern U.S. over the past weeks.

Ten inches of rain in three days was too much for parts of Western Washington to handle. In the Cascade mountains, flooding problems grew worse when warm rains melted snowpacks. More than a dozen major rivers in western Washington reached or passed flood stage. That cut off roads to at least two communities and forced evacuations.

Radio amateurs were called to provide communications support at an emergency operations center set up in the town of Carnation. In Issaquah, Amateur Radio frequencies were used to help relay dispatch requests received by 911. In Carnation, hams helped dispatch fire/rescue units using fire department radio channels. Amateurs were also called to the King county police special operation unit. Hams provided communications support to a local search and rescue group. Amateur frequencies got a workout in King county. That's where many search and rescue volunteers are licensed hams. Amateur frequencies and repeaters are often used for primary communications during search and rescue operations in King county.

Vanity calls

There is good news and bad news on the vanity call sign issue. The good news is Gordon Girton, W6NLG, of the Sunnyvale, California VEC, says that he has heard from the FCC that the long- awaited vanity call sign form 610V will be available sometime in February of 1996. Gordon says the FCC will also release the form 1070 at the same time.

The bad news? The FCC has received two more Petitions for Consideration on the provision of the Report and Order that prohibits a close family member from obtaining the call sign of a deceased family member unless they hold the same or higher class of license. Originally, the FCC did not include this provision in the Vanity Rules. They were persuaded to do so, and now this decision is being challenged.

It is possible that the FCC could dismiss the reconsideration request by saying the issue has been decided. The problem is that if they do turn them down, those posing the latest challenge would then have the option of taking a decision against them into the federal courts. And that could tie the entire vanity call sign program up in litigation, for years.

Massachusetts antenna law

Massachusetts now has a PRB-1-like law of its own. It's literally a Thanksgiving present to the hams of the state.

Phil Temples, K9HI reports that on 24 November, the governor signed into law legislature Bill H-2782 which is now Chapter 225 of the Acts of 1995. The text of the new law is simple and unambiguous. It reads in part as follows: "No zoning ordinance or by-law shall prohibit the construction or use of an antenna structure by a federally licensed amateur radio operator. Zoning ordinances and by-laws may reasonably regulate the location and height of such antenna structures for the purposes of health, safety, or aesthetics; provided, however, that such ordinances and by-laws reasonably allow for sufficient height of such antenna structures. This so as to effectively accommodate amateur radio communications by federally licensed amateur radio operators and constitute the minimum practicable regulation necessary to accomplish the legitimate purposes of the city or town enacting such ordinance or by-law."

The law goes on to say that nothing in the act shall be construed as limiting the authority of any architectural or historic district commission estab-

(more NEWSFRONT on page 7)

Scarboro Reef — to be or not to be...

The ARRL Membership Services Committee (MSC), which is a standing committee of the Board of Directors, has reviewed the documentation from the DX Advisory Committee (DXAC) and the Awards Committee regarding the addition of Scarboro Reef to the DXCC Countries list. The DXAC and Awards Committee had disagreed on its eligibility for separate DXCC country status. The Membership Services Committee voted 5 to 2 in favor of accepting Scarboro Reef.

Following procedures established last July, when there is disagreement between two groups, MSC takes the disputed matter under review and makes a recommendation to the full Board of Directors. As we go to press, that board meeting is due to be held the 19th of January, and the issue should be decided on that date.

On the cover...

This collection of QSL cards represents just a few of the hundreds of cards sent to *Worldradio* for the recent drawings in the Aerials column. Many thanks to all who participated! **WR**

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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

We recognize the latest inductees into the Hall of Fame that is the domain of the ***Worldradio*** Super-Boosters (Lifetime Subscribers):

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•Jim Johnson, KM7H, Mukilteo, WA
•Dave Schnuckel, N7PZI, Snohomish, WA
•Nathan Zane, KH6IHB, College Place, WA

•

This month, more than usual, we received many letters from subscribers telling us that they had received, in addition to their regular issue, one marked, "Sample Copy-Please Subscribe."

Yes, we know. And it is intentional. The wonderment on the part of our valued readers is our fault for not explaining this more often. In order to gain more subscribers we do send out each month "sample copies" so amateurs can see what we do and (we hope) subscribe.

We like this method better than what other magazines do, which is flood news stands with copies, half of which are unsold and then destroyed. We would rather put the magazine into the hands of an amateur. At least some good is coming out of it that way rather than a quick trip to the landfill.

Each month we select a geographical area and annually walk our way across the country.

Now, here is what subscribers are supposed to do with that extra copy that you may receive possibly once every two years. Either give it to a newly licensed amateur you may know, take it to your radio club and offer it for free, give it to a potential amateur or someone you have been after for years to become an amateur.

The very idea of giving a copy of ***Worldradio*** to a person who's not even an amateur strikes at one of the historical roots of why this magazine exists in this form.

In what now seems like the far distant past I was a newsfilm cameraman for a TV station. I had invited the reporter with whom I worked most frequently to come to our home for dinner. During the meal I was telling his girlfriend (a doctor) about Amateur Radio and all its wonderful humanitarian activities. I had mentioned the Eye Bank Net which was accomplishing great things then and many other similar endeavors in the emergency and public service areas. She seemed very interested.

Later that evening she excused herself and went to a small room in which we all keep reading material. When she returned she commented about picking up a magazine about Amateur Radio and looking through it. I can still hear her words which were, "I looked through the magazine and I didn't see anything about what you were talking about. All I saw were blueprints." She became very remote after that. I suspected she thought I had just made things up.

Yes, at that time the magazines were mainly schematics ("blueprints"). I wished then that there were items in print (people believe it more if it's in print) that you could give someone about this avocation that would be understandable to a non-electronic technically minded person.

Later, one of the magazines ran as its lead article, once again, (and at that time it seemed like again and again) the hookup up of 4, 811-As in grounded grid.

In the same issue, buried way in the back in the teeny, tiny type were a few words about the amateurs helping in the aftermath of an earthquake in Peru. I thought the reporting was backwards!

So, on the barest of shoestrings, I started a publication that would put what we did with the equipment first, as to me that was the NEWS of it all.

I wanted a magazine that would not only be interesting and informative to amateurs, but one they could give (with pride) to someone else as a true reflection of what it is we DO!

Should you ever give your regular monthly copy away to a potential or prospective amateur let me know and I'll send you another issue (free) to replace that copy for your own library of issues.

I'll close with the gentle reminder that we are always looking for articles. Don't have (as many do) the idea that "nobody will be interested in that" regarding your activity. You were, weren't you?

—Armond, N6WR

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- Automatic Tone Search (ATS)
- Digital Battery Voltage Display
- AM Aircraft Receive
- Scanning Light System (SLS)
- 120 Memory Channels (80 w/Alpha-Numeric)
- Large Backlit Keypad & Display
- Automatic Repeater Shift (ARS)
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- 3 Selectable Scan Stop Modes with Scan Skip
- User selectable lock function w/15 combinations
- Automatic Power Off (APO)
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- 5 Selectable Power Output Levels
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Amateurs celebrate 50 years on 6 Meters, the magic band

Ken Neubeck WB2AMU

An important anniversary will take place in March of 1996 as it marks fifty years that U.S. radio amateurs have been on 6 Meters. This means that other than the WARC bands of 10, 18 and 24 MHz, 6 Meters is one of the newer Amateur Radio bands. It remains as one of our most interesting ham bands and is seeing rapid growth in several areas of the world.

The 6M amateur band is without a doubt the most interesting range of Amateur Radio spectrum that hams have access to, yet for a long period of time, the spectrum of 50 to 54 MHz was the most underutilized of all of the bands. It is a band where many different forms of propagation appear, more so than any other and hence it is called the "Magic Band" by many of its users.

In addition, it is the one band where all of the different modes of transmission may be found, ranging from weak signal modes like CW or SSB to FM repeaters. Ironically, greater than 90 percent of the United States Amateur Radio population have access to this band, starting from the Technician Class license, but the total percentage using this band on a regular basis is less than five percent of the ham population. It is a great piece of real estate just waiting for hams to discover its capabilities and potential.

U.S.Amateurs were first assigned the 6 Meter band in March of 1946, when they were moved off of the 5 Meter (56 MHz) band. This reallocation took place in order to accommodate a new block of VHF TV channels by the FCC. There was little commercial gear available at that time, so many hams on 6 Meters homebrewed their own 6 Meter gear. During the 1950s and 1960s, commercial gear that could be converted for 6 Meter, AM operation was manufactured. Six Meter AM was thought of as a good local communication mode for line-of-sight work. In addition, it was used as part of the Civil Defense emergency network by hams involved in public service. Six Meters was particularly popular with the Technician Class hams and this led to the label "Technician's band."

A large number of commercially made 6 Meter rigs came out by the early 1960s, notably models made by Clegg and Gonset along with other manufactures having at least one 6 Meter model to accompany their HF series. Typically, these rigs had theAM mode and had sockets for one or two crystals, as internal VFOs were not too common during the early days. Power levels for these AM rigs were between 5 and 20 watts and they could be adapted for mobile work by use of an inverter power supply.

Verticals and halos were the antennas of choice for mobile work and it was not uncommon to see a four-and-a-half foot, quarter-wave whip mounted on car bumpers. Besides mobile communications, Six was also used during this time for the developing hobby of radio-control boats and airplanes. SSB made an entrance to the band in 1960 and caught on fast. This time period was truly the "golden age" of 6 Meters.

However, 6 Meters gained its nickname as the "TVI band" when it was discovered that it interfered with TV Channels 1 and 2. This problem would result in changes in the broadcast TV spectrum when Channel 1 in the 44- to 50-MHz range was eliminated in the early 1950s. The ARRL petitioned the FCC to eliminate Channel 2, not only because of 6 Meters, but also because of the second harmonic of 10 Meters falling in this range of 56 MHz. However, this was rejected and Channel 2 TVI became the cross that had to be borne by those who operated Six, even to this day, particularly in areas of the country where this channel is active.

The TVI problem was one of a few things that would affect the popularity of the 6 Meter band. Another thing that would affect usage on Six was the development of the 2 Meter FM band which was becoming very popular with hams for local use. There were fewer problems with TVI for 2 Meter users, a fact appreciated by hams in the crowded areas. The smaller wavelength was ideal for antenna work and along with the development of 2M repeaters, was attracting more hams to this band and would reduce usage of Six as a mobile band, a trend which continues to this day.

Interestingly enough, as 2 Meter FM became popular, the slow growth of this mode on 6 Meters actually contributed to the general mix of modes that you see on the band at the present time. It seems that there is more weak signal work done on Six in the way of CW and SSB while AM retains a strong presence on the band. This is the beauty of this band as no one mode can claim an overwhelming majority.

Fifty megahertz is sometimes called the "borderline band" as it exhibits both VHF and HF characteristics. Believe it or not, it is a good DX band throughout the eleven year solar cycle with F2 propagation being worked at the sunspot peak and sporadic-E propagation used every summer. Almost 200 hams worldwide have worked 100 countries for DXCC awards using a combination of both modes. In addition to F2 and sporadic-E, there are other propagation modes such as tropospheric skip, aurora, backscatter, and meteor showers. However, the most common propagation mode for 6 Meters is sporadic-E and it affects this band more than any other Amateur Radio band.

Sporadic-E propagation has made things very interesting during these lean years of the recent sunspot minimum. Despite the loss of F2 propagation, activity has actually increased on both sides of the Atlantic with many moderate and low-power contacts being made via sporadic-E. In the United States, many Technician Class licensees have been getting on the band recently as well as higher class licensees who have upgraded to new HF radios that have 6 Meters as an option. Over in Europe, Six Meter restrictions have been eased for several countries as TV channels are moved to higher frequencies. The band has been embraced by many operators there and is seeing terrific growth.

Both the summer of 1994 and 1995 saw a terrific amount of transatlantic QSOs on 6 Meters. There was a terrific opening that occurred between Florida and other eastern states with much of western Europe during Field Day in June of 1994. The summertime DX trend continued in June and July of 1995 with several days of openings between Europe and eastern U.S. The latter is discussed by W3EP, Emil Pocock, in his article, "Spectacular 1995 Transatlantic sporadic-E Season"

in October, 1995 *QST*. The excellent DX conditions have been aided by both the increased number of stations on 6 Meters on both sides of the Atlantic as well as a somewhat unusual amount of sustained multi-hop sporadic-E openings between Europe and North America. It appears that 6 Meters is making a comeback in a big way.

FM repeater activity on Six has slowly been increasing, particularly in areas where the 2 Meter repeater spectrum is completely saturated. Southern California is a good example of this and there are over fifty 6 Meter repeaters in the FM portion of the band, beginning at 51 MHz. There has been an increase in the manufacture of Six Meter FM gear in recent years and this has sparked moderate growth. By the way, 6 Meters has excellent groundwave conditions and it is not unusual to work several miles away using ten watts of output power. There are a number of local nets on this band, scattered throughout different areas of the country.

The 6 Meter band will prove to be a very important band in the future. One area where hams will be able to help science, is in the area of propagation research as 6 Meters is one of the best canvases for the sporadic-E, aurora and meteor scatter phenomena. Observations made by hams on 6 Meters as well as on 10M have clearly demonstrated the two-season phenomenon of sporadic-E — a major peak during the summer season (May through August for the northern hemisphere) and a lesser peak during the early winter months (November through January). The observations made by hams have helped scientists determine the form and structure of the sporadic-E phenomenon. Hams interested in this area should keep notes of their observations in their logbook.

It is unfortunate that there is no contest marking our 50th anniversary on 6M. Even though March is generally a poor time for skip conditions on 6 Meters, at least groundwave contacts are possible and a QSO party would have been conceivable. The radio organizations in the U.S. should realize what the Europeans already know — that 6 Meters is truly a "fun" band!

It will be most interesting to see the amount of activity that occurs on the Magic Band when the next sunspot peak arrives by the end of the century. Besides NorthAmerica, there are many stations in Europe and in Asia that frequent the Magic Band on a regular basis, and there should be a boom of activity during the next peak. A lot of 6M operators are anxiously waiting for this. Why not join the fun? WR

NEWSFRONT
(continued from p. 3)

lished pursuant to any general or specific law.

Temples says that he has praise for the efforts of State Government Liaison, Shawn O'Donnell, K3HI, as well as the work by Western Massachusetts Section Manager Dan Senie, N1JEB, who spearheaded the new law. Also included in this are the countless amateurs in the Commonwealth of Massachusetts who wrote letters and made phone calls to their congressmen and women, and to the Governor's office in support of the bill.

CC&Rs cannot ban small antennas

California governor Pete Wilson has signed Assembly Bill 104 into law that voids and makes unenforceable land use Conditions Covenants and Restrictions, that prohibit the installation or use of video or television antennas. This includes satellite dishes measuring up to thirty-six inches in diameter.

AB 104 does give associations the right to reasonably restrict or regulate such installations, but directs that any application for an installation must not be willfully delayed. The new law even allows the award of attorney's fees for the prevailing party in an action to enforce compliance with the bill.

AB 104 was written by Assemblyman Dan Hauser and had heavy backing from Pacific Telesis.

California hams should not expect to see an announcement of AB 104 in their homeowners association newsletters. Most homeowner associations probably hope that hams never hear about the new measure. As stated earlier, AB 104 covers only small antennas designed for receiving television signals and satellite TV. While you might get away with a 2 Meter beam, a tri-band array will definitely be subject to challenge.

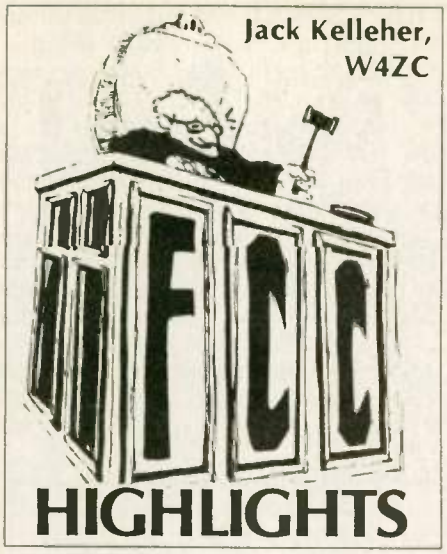
RF report released

The FCC is attempting to quell the debate over whether or not radio frequency transmissions cause injury to people exposed to them. The latest issue of *TV Broadcast News* magazine says that the commission has released a report that deals with the possible harmful affects of close-up or extended exposure.

The study also discounts the effectiveness of personal RF monitoring devices. It says that such detectors are often deficient. It also questions the accuracy of induced current RF monitoring instruments under real world conditions.

The report, prepared by the FCC's Office of Engineering and Technology, is expected to serve as the basis for any commission action to revise its guidelines concerning the amount of human exposure permissible to RF fields. Copies can be purchased for a nominal fee from the National Technical Information Service of the Department of Commerce.

Their phone number is 800/553-6847. Specify report number PB95-253829. WR



Vanity call sign system delay?

The FCC has received two petitions for reconsideration of the proposed provision that prohibits a close family member from obtaining the call sign of a deceased amateur unless the applicant has at least the same class license.

This provision was not included in the first version of the proposed Rules governing the Vanity Call Sign System, but was added at the behest of David B. Popkin, W2CC, who wanted the rule revised to prohibit an applicant from obtaining a call sign for a higher operator class simply because the call sign was once held by a relative now deceased. Popkin wanted to be able to determine the license class held by the station's licensee from the call sign alone.

The FCC decided that allowing an amateur with a lower class of license to obtain the higher class call sign could result in unfair assignments, and so the requirement for equivalent class was included in the recent Memorandum Opinion and Order (M.O.O.).

The M.O.O. was published in the Federal Register, but the proposed rules do not become effective until 30 days after publication, during which period petitions can be filed for further reconsideration of the proposed Rules.

Code speed requirements (again)

Three Technician Class amateurs have written to the FCC seeking changes in the General Class telegraphy requirements. Alan N. Selin, WA1AGK, Naples, FL; Christopher S. Salinas, NØTTW Brainerd, MN; and Clifford R. Todd, KB5YSW, Carthage, TX, wrote separate letters to the FCC which the Commission treated as Petitions for Rulemaking.

These individuals wanted to substitute 5 wpm for the 13 wpm telegraphy requirement necessary to qualify for a General Class operator license. Mr. Todd's letter was signed by seven other amateur service licensees. Todd and Selin also requested that holders of the Technician-Plus Class operator licenses be granted General Class operator privileges.

The FCC ruled that "The current amateur service license structure and examination requirements were developed in accordance with the expressed desires of the amateur service community through numerous rulemaking proceedings that generated thousands of comments. The amateur service indicated on each occasion that it strongly desires to preserve communications by telegraphy. After considering the views expressed in these proceedings, the Commission adopted the rules that are codified in Part 97.527. The requestors have not presented sufficient evidence to justify revisiting these matters at this time."

RF light bulbs get FCC approval

According to the *ARRL Letter* for 9 November, the FCC has waived its rules to permit the General Electric Company to begin marketing an RF lightbulb. The Commission waived, at GE's request, FCC Rules Part 18 limits on the amount of RF energy that may be conducted into the electric power lines by RF lighting devices in the band 2.2 to 2.8 MHz.

The FCC said that there has been "no record of significant interference problems from the use of these devices in commercial environments," and also said that radio operations in the 2.2 to 2.8 MHz range "are not normally employed or intended for reception in residential environments."

The ARRL will obtain samples of the GE bulbs for testing as soon as they are available. ARRL Laboratory Supervisor Ed Hare, KA1CV, said that the new bulbs should not, if properly designed, create any more interference to Amateur Radio operations than fluorescent bulbs, dimmer switches or other similar devices found in the home.

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 December 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	ABØAB	KIØAB		KBØUPM
1	AA1PA	KE1DS	N1WFU	KB1BVI
2	AA2ZP	KG2FD		KB2WLW
3	AA3MY	KE3VK	N3WMG	KB3BLV
4	AE4OG	KT4HD		KF4FDI
5	AC5FU	KK5VJ		KC5RXY
6	AC6RB	KQ6CH		KE6ZYR
7	AB7NQ	KJ7SU		KC7OCD
8	AA8VD	KG8UK		KC8BRH
9	AA9QS	KG9EW		KB9MCX
N. Mariana Is.	KHØU	AHØAW	KHØEN	WHØABD
Guam	WH2Q	AH2DA	KH2OX	WH2ANO
Hawaii		AH6OI		WH6CYX
Amer. Samoa	AH8O	AH8AH	KH8CK	WH8ABE
Alaska		AL7QG		WL7CQE
Virgin Is.	WP2U	KP2CI	NP2IS	WP2AIA
Puerto Rico				WP4NGP

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

The FRS proposal

The proposed Family Radio Service (FRS) is not related to the Amateur Radio Service per se, but we have covered it previously and will continue to cover it in view of the implications of non-licensed operation; and in view of previous happenings in the Citizens Band Radio Service. (The CB service went from licensed to unlicensed operation and, of more concern, operated outside of its channel assignments).

On 20 July 1994, the Tandy Corporation filed a petition for Rule Making to use channels in the UHF spectrum for a new Family Radio Service (FRS) "without the burdensome licensing and technical requirements of existing radio services." The FRS, as proposed, would use 500 mW transceivers on 16 channels in the General Mobile Radio Service (GMRS), a licensed personal radio service for individual use. (These frequencies are in the 460 MHz region of the spectrum).

The FCC accepted the Tandy proposal on 26 July 1994, assigned it the file number RM-8499 and put the item out for a 30-day comment period. After studying the submitted comments, the FCC issued a Notice of Proposed Rulemaking (WT Docket No. 95-102) with a deadline of 2 October for Comments, and 16 October for Reply Comments.

This proposed service is referred to in some quarters as a new category of Citizens Band Radio, and "FM CB." However, the GMRS, often mistakenly called "The old Class A CB," has little historical connection to Citizens Band radio and predates it by many years.

GMRS is one of the fastest-growing land mobile radio services, and sophisticated radios for the service are available in the $150 price range. There are over 35,000 GMRS stations, mostly used for private and family communications and for volunteer public service groups. As might be expected, these users are against the proposed service because they foresee major interference problems. The FCC's comments, in the NPRM, indicate that the Commission intends to establish the Service essentially as proposed.

Other proposals

Another petition, filed by Flash Comm Inc., a joint venture of the Harris Corporation and Lexmark, proposes a "Messaging and Location Tracking Service (MLTS)" using 10-watt unlicensed mobile transmitters operating at HF (3-30 MHz). These radios could choose ANY (emphasis added) channel in the entire 3-30 MHz range. (Harris Corp. is the well-known manufacturer of electronics, broadcast and printing equipment; Lexmark was formerly the IBM typewriter and printer division!).

Long-haul truckers and other transportation users are key markets for MLTS. The vehicle radios would receive messages from non-HF stations. They would use the HF bands on a secondary non-interference basis to communicate with regional base stations, from which messages would be relayed to customers.

The petitioners claim that there will be no interference to primary licensed HF radio users from the system's operation in the 3-30 MHz band. Flash Comm said that unlicensed units will include these safeguards:

- "Examination of potential transmit frequencies in use by others before transmission. The device may transmit on any one of 9000 channels in the 3-30 MHz band that it finds to be clear.
- "Transmission time of five seconds maximum, two seconds average, with noise-like emission. The worst case interference is perceived to a voice user as a short burst of low level noise, much like a common channel "fade." Interference to data users would also be minimal, as existing data systems must also contain an effective means of dealing with channel fades.
- "Long and random time intervals between consecutive transmissions on the same frequency.
- "A very low transmit power (10 W out of the final amplifier into a 50 ohm load, using a maximum 3 kHz wide signal.

"The effective radiated power out of the MLTS user device antenna is typically less than 10 watts — more on the order of 2 watts at the peak of the antenna pattern, due to the use of manageable lengths on mobile platforms.

"Accordingly, in the unlikely event that an MLTS transmission occurs in an interference mode and arrives at an unintended receive station above the noise floor at that station, it will often be sufficiently below the intended signal level so as to be imperceptible.

"Since the MLTS system will be required to choose clear frequencies on a near real time basis, the likelihood of hitting a co-channel primary user multiple times in a short period is highly unlikely. First, the next time a frequency is being selected, the system will most likely determine correctly that the frequency is used and not choose that particular frequency again. Also, since the initial frequency choice was made, another frequency may be predicted to have a better propagation effectiveness. Therefore, the system would not choose the same frequency again, thus further minimizing the probability of revisiting occupied frequencies."

Unlicensed operation is desired. The proposal goes on to say: "Mature MLTS systems may result in hundreds of thousands of remote user devices implemented across the United States. The requirement to license such a large universe of user devices would severely tax the Commission's resources while adding substantial delay in the implementation of any MLTS service for no real benefit. Therefore, Flash Comm believes that MLTS should be authorized on an unlicensed basis.

"Because of the extremely large number of MLTS units envisioned for field operation, effective regulation by policing individual users would be administratively impossible. Compliance may be assured by treating persons violating the MLTS rules by using modified or non type accepted equipment as operating without proper authorization in violation of Sections 301 and 302 of the Communications Act. Enforcement under Section 401 of the Act would provide civil and criminal penalties."

W4ZC — This proposal reads as if the problems, if any, are minimal. I for one don't think that they are; and the problems foreseen are not only technical, but regulatory. I'm concerned about the intent to use any frequency in the HF band, albeit allocated / assigned to amateur, maritime or aeronautical mobile, or other authorized services. "What if" these signals cross international borders and interfere with services in Canada, Mexico or other countries in the North American region?

All's well that ends well

The decision of WC-95 (the World Radio Conference of the International Telecommunication Union) concerning Morse code was "RR-2735 NOC" (NOC means "no change"). Thus, RR-2735 continues to read: "Any person seeking a license to operate the apparatus of an amateur station shall prove that he is able to send correctly by hand and receive correctly by ear texts in Morse code signals. The administrations concerned may, however, waive this requirement in the case of stations making use exclusively of frequencies above 30 MHz." WR

SLD ALL: Ten tips for successful CW contacts

Rob Henderson, KB7PWJ

"SRI OM NO CPI BT TNX ES 73"

Geez, I hate hearing that. I hate sending it even more. But what can a brasspounder do, besides erecting a huge tower or QROing until your neighbors copy you on their hair dryers?

Well, if you can't upgrade the station, upgrade the op. It's cheap, and works with any rig. I operate LPCA (Low Power, Crummy Antenna) exclusively, and can vouch for the effectiveness of these pointers:

1. Hang in there! Blessed are the OMs who sweat with me for twenty minutes just to swap calls. On the other hand some CQers send my call back perfectly and then say "SRI NO CPI." Come again? Good CW QSOs take perseverance . . . .

2. First-exchange protocol is holy writ. Send his RST, then your QTH and name, in that order. Be sure to use those terms, too. "RST 329 BT QTH OLYMPIA WA BT NAME ROB" works; "OP ROB UR 329 IN OLYMPIA" will let you down. Send nothing else until he has copied this information.

3. Analyze your RST. If the first two digits add up to 10 or less, send all information twice, but only twice, unless asked to repeat. Keep it short thereafter if either station is weak; someone may QSB into oblivion. Ask for a new report before you sign over.

4. Good ops love bad bands. You *can* work 'em if you can't hear em . . . almost. First, slow down. Fast CW sounds like one long, feeble tone at S2. Observe protocol; sign over like this: W7QRP DE KB7PWJ K. Avoid BK or just DE KB7PWJ K. He might not catch it. He'll pick out his own call, though, if he can copy anything. Above all, honor Commandment 1. (See above).

5. I Spy. Visualize the other op. Look for clues to help you select a technique for him. With practice, you can detect the wobbly touch and/or classic bug of the true Hero of Amateur Radio. Go easy until you've determined that his hand can write as fast as you can send. (It's worth it. Spark-gapers are among my favorite QSOs). A hesitation after your sign-over may indicate a new or infirm fist. Bad spelling? Maybe you've got a young fish on. Ease off on the CW jargon and the two-dollar words. Most important of all: never send faster than your contact, even if he is sending 5 WPM. Especially if he is sending 5 wpm.

6. Forge a fine fist. Take pains to send clearly. The silences are as crucial as the tones. Be certain to insert a clear pause between each letter. The Novice sending a crisply-spaced 5 wpm gets better results than the Extra machine-gunning an unbroken string of dits and dahs. I take my fingers off the paddles after each letter during some QSOs, to train myself to *send* pauses.

Some effective Q signals and pro-signs for CW

QRL?	Is this frequency occupied?
QRM	Man-made interference
QRN	Atmospheric interference
QRS	Send more slowly
QRZ?	Who is calling me?
QSB	Your signal is fading.
QSL	I have copied that.
QSO	A contact. (As question: Can you contact {call}?)
QSY	Let's change frequencies.
QTH	Geographical location.
AS	Wait. (Operator may send AS at intervals if wait is long).
AR	I'm finished. (Some operators send K after AR, some consider it understood).
SK	I'm ending the QSO and listening for your OK.

7. CQ smart. After warm-up, scan the band. If someone is already CQing, call him. Ever hear a dozen OMs frantically CQing within a few hertz of each other? When you do CQ, spin your offset after each K, especially if you're filtered-up or working the Novice bands. You could miss an FB QSO just because he hasn't zero beat on your frequency. Short CQ calls work best. Long CQs attract sharks — the linear on a nearby frequency, for example, that pounds a fragile call from Mali to shreds. If your call starts with K like mine does, send AR before the K that ends a CQ call. Otherwise that rare TZ may think you're repeating your call, hesitate, and get crushed by your 1500-watt neighbor.

8. CQ DX. Good foreign QSOs require special attention. Use your CW jargon, especially the Q-signals. Foreign amateurs may speak only "radio English." I've had DX QSOs that were almost entirely Q-signals! If he repeats a lot, (OK OM, OK OM . . . QSL, QSL), his English is probably spotty. Even amateurs in English-speaking countries may have a different CW dialect, so stick to license-manual protocol until you get the hang of it.

9. Thirty theory. Working the 30 Meter "Brass Band" is fun and easy. Power is limited to 200 watts, so it's a great place for LPCA operations. One hint: lots of fists scan this band, moving on to others if they don't hear traffic. Even when it seems empty I can often float a few CQs and get a call. By the time I sign off, the band is buzzing with other "bugs" I've attracted.

10. All that glitters is not DX. Like most amateurs, I love to work DX, but the point is to work interesting people. Don't ignore that stateside call sign. You could find yourself in QSO with a fascinating YL, a charming youngster or a wonderful old timer. These QSOs are just as challenging as DX, and at least as fun. If you don't believe me, try earning a "YLCC." Same goes for unusual rigs. A whisper of QRP, a drift of tubes, and I'm there.

Set the table for the new, the courageous, the rare amateur. You'll enjoy great ragchews and promote brasspounder fellowship. These tips are time-tested and true. The best technique manual, however, is your logbook. By noting what works in your own contacts and learning from other skilled CW operators, you'll have more fun on the air. WR

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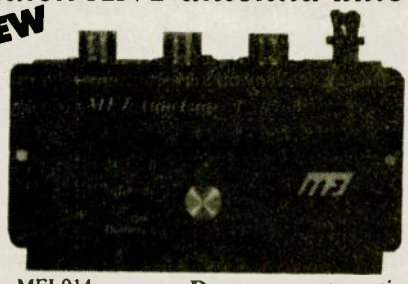

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MFJ-903

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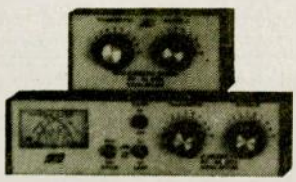

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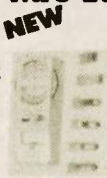

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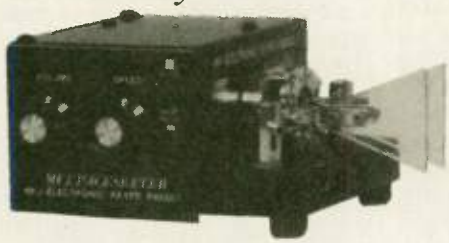

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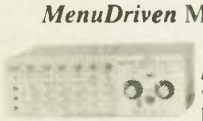
MenuDriven Memory Keyer/Keyboard



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SPOC (Single Point of Contact)

Last of a 3-part series

Bill Pasternak, WA6ITF

The loyal opposition

To paraphrase the old quote, you can please some of the people some of the time, but not all of the people all of the time. This is certainly true when it comes to trying to get all of the nation's frequency coordinators to agree on the need for a "Single Point of Contact" to the FCC, and, even more so, on the ARRL being the "SPOC." You may have noted that in the previous parts of this series we keep referring to the "majority" of the nation's coordinators. At no point have I said that these decisions were unanimous: Only that they represented the votes of those present at the October 7th meeting.

As this is written, we are still several weeks before the committee presents its "SPOC white paper" to the ARRL, it appears that three distinct groups of opposition have emerged. These are (a) the minor opposition from coordinators who did not attend the meeting, (b) one umbrella group that feels it should have the right to be a separate "SPOC" and (c) one group that seems more interested in proving theories of conspiracy on the part of the ARRL and others rather than in telling the world why it so opposes unified dialogue with the FCC.

Indiana is unhappy

Not every coordinator agrees that the ARRL should be the "SPOC" and one indicates that this meeting should never have taken place. Bill Wells, WA8HSU, Chairman of the Indiana Repeater Council says that ARRL officials stated several times that it was the FCC pushing for establishment of a single point of contact, but at the meeting Haller denied that the FCC had made any "official request" for the meeting.

Wells insists that it was actually the ARRL which was demanding that the Commission request a single point of contact. Wells describes the meeting as illegitimate from start to finish and to prove his contention, Wells and the Indiana Repeater Council have filed a wide-ranging Freedom of Information Act request to the FCC.

Wells' November 18, 1995 filing places a formal demand before the Commission that the agency supply copies of all communications between it, the ARRL and the Mid America Coordination Council dealing with the single point of contact matter from January of 1994 to the present. This includes, among other items, copies of telephone logs, minutes of meetings, and even the expense account Wireless Telecommunications Bureau Deputy Chief Ralph Haller, N4RH, in relation to the October 7th St. Louis meeting.

Wells and the Indiana Repeater Council also appear to be trying to ascertain if any undue influence peddling on the part of the American Radio Relay League or the Mid America Coordination Council took place in the creation of a SPOC. They specifically ask for a complete list of all gifts, regardless of value received by any officer, staff member, Commissioner or representative of the Commission from any officer, staff member, or representative of the American Radio Relay League or MACC.

SERA says no!

The single point of contact idea does not have the support of one of the nation's most powerful "umbrella coordinating groups" either. SERA, the Southeastern Repeater Association says it will not participate in the single point setup. David Shiplett, AC4MU, is president of SERA. He says it's in SERA's best interests to maintain its own contacts with the FCC, as the Association has done in the past. Also being raised by SERA is the question of possible influence by any given League division director on specific coordination matters affecting the director's region.

SERA is a major voice in amateur radio. The Association represents more than two thousand repeaters in eight southeastern states. Dave Shiplett says that just as there can be more than one VEC program the option should also exist to have more than one "Point of Contact" for handling coordination matters with the FCC.

Coordinators not present

There were a small number of repeater coordinators who did not make it to the St. Louis meeting. Their basic complaint is that they do not have the needed finances to travel half the way cross country to attend a "national meeting."

Some say that they are not yet into the "computer revolution" and therefore not on an electronic mail system or the "Coordinators' Reflector" information interchange service. Both of these small groups say that they feel that they are on the outside looking in. They want future meetings held regionally rather than nationally. Either that, or to have either the ARRL or the consortium of better funded coordination groups subsidize their cost to attend.

None of those with whom we spoke really complained about the outcome of the St. Louis meeting. Rather, they are upset that there was no way for them to be involved. If we may make a suggestion to them — it's 1996 — buy a computer and modem and sign on with an Internet provider!

Opposition may mean very little

So, what does it mean to have groups like the Indiana Repeater Council and SERA not taking part in the single point of contact? They will essentially take the role of outsiders looking in, and won't be part of shaping how the single point of contact is run.

Let us suppose for a moment that Bill Wells and the Indiana Repeater Council are proven to be 100% correct. Let's hypothesize that this is all an ARRL "setup" to take total control of repeater coordination. What does the ARRL have to gain from such an action? Only the probability of getting sued ten or twelve times a week by disgruntled hams without channel pairs for their proposed new systems and unable to get "relief" from the ARRL SPOC! Remember what the FCC's Haller said in St. Louis. The FCC does not have the power to grant immunity to anyone from frivolous lawsuits: not the local coordinator, not the SPOC, not even the FCC itself. It takes an act of congress and congress is not going to put the nation on hold to take a ham radio matter under advisement.

I frankly believe that the assembled coordinators chose the ARRL as the SPOC strictly based on financial considerations. The ARRL has the funds on hand to be the SPOC and the ARRL is in a better position to go to court if and when necessary. Coordinators generally exist on handouts, may not be a corporation and probably have no liability insurance and operate in fear of the "Kowalski Letter." The ARRL has regular income potential, a Washington liaison staff and the will to stand and fight. Who or what other entity can make such a claim?

While most of the rest of the nation's coordinators are agreeable to the single point plan, groups that opt out will probably find themselves having to deal with the League's "Single Point of Contact" system nonetheless if they try to bring a repeater problem directly to the FCC.

A word about the infamous Kowalski letter

Since the '60s coordinators have found ways around the numerous problems placed before them by lack of government recognition of their fine work. But the failure of the government to provide coordinators with recognition has placed many individual hams in the position of placing every penny that they have in legal jeopardy as they try to provide a necessary service to the ham radio community.

Don't blame Ralph Haller for this. Be happy we have him! He is the first FCC official in the history of FM and repeaters who is willing to listen to the coordination community. In my personal opinion, and from even more personal experience, I feel I have the right to say that one of Haller's predecessors at the FCC caused the coordination havoc that exists today.

Many of you licensed less than a decade probably have never heard the name Raymond A. Kowalski. By way of background, about a decade ago Ray Kowalski was the chief of the now defunct Special Services Branch of the FCC. When a feud developed between an existing repeater coordinator and another group claiming it had the right to coordinate the same band and geographic region, the matter was handed off to Kowalski for a determination.

Without going into minute detail, Kowalski issued an opinion that any entity acceptable to any segment of the ham radio community could declare itself a valid repeater frequency coordinator, and that two, three or more entities of this type could service the same geographic region without ever bothering to communicate with any other coordination entity.

In other words, what became known in the coordination community as the dreaded "Kowalski Letter" was responsible for the rise of three new aspects of VHF/UHF repeater operation. These are the "Instant Coordinator," the "ham radio ambulance chaser" and the "ham vs. ham" lawsuit.

The letter gave birth to a cottage industry whereby anyone denied a coordination by an established coordinator had only to declare *himself* a coordination entity, and then issue himself a legally valid sanction to operate his repeater on any channel he chose. If anyone complained, he hired a lawyer and sued everyone in sight for libel and slander or anything else the lawyer could think of!

The FCC said at the St. Louis meeting that incidents such as this are few and far between. Then again, it is not the FCC that has paid out the tens of thousands of dollars in legal expenses like those encountered by hams in Texas, California and elsewhere as the result of a totally wrong-headed regulatory interpretation.

Strict adherence to this bandplan would be mandatory.

As more new Technician class hams come to the VHF and UHF bands, there is an exponentially larger demand for more and more new repeaters. Not because more repeaters are actually necessary. Rather, new hams have, by the term of their license a legal "right" to own and operate repeaters. A goodly number are now saying that they are exercising that right. They are demanding that space be made available for their "new operations" in bands already piled 10 and 12 deep with repeaters on every channel pair. Legally, their demands for channels cannot be denied by any coordinator, even if there exists no place to put them. To say "no" leaves a coordinator open to litigation that could put him, his family and his organization into bankruptcy. Coordinators know this, and they are scared!

If you think that the "Kowalski Letter" caused problems for the coordination community, you cannot have any idea what it meant to the FCC itself. It has cost them a lot of money spent in the staff's time and labor needed to answer the countless repeater-related questions that ring into the agency every day. Now, after a decade, even the FCC seems to be admitting that its former employee was wrong. When asked about the letter by MACC founder Ken Ennenbach, KCØWX, Haller replied: "The Kowalski letter means what Ray meant it to mean." He did not elaborate.

In retrospect, had Ray Kowalski ruled that only the existing coordinator accepted by the "majority" of the regions' repeater owner-operators was a valid coordinator, there is a very good chance that the St. Louis meeting never would have been necessary. There would never have been any "Instant Coordinators." Nobody would be suing anybody and those inclined to do so would still be chasing ambulances instead of monitoring our bands for potential cases. In my humble opinion, what Raymond Kowalski decided almost a decade ago has set back the cause of voluntary repeater frequency coordination at least a decade and a half. Whether or not it is ever possible to untangle the mess it created, remains to be seen.

Some personal observations

To make repeater coordination truly viable requires several actions. Some from the FCC and others from the coordination community.

First and most important is that the FCC must give recognition to the works of those Amateur Radio repeater frequency coordinators who have shown by longevity of at least a decade that they are the choice of the ham radio community of a given region. This one action puts an end to any "Instant Coordinator" set up yesterday or 9.999 years ago. It makes their existence and any coordination they may have issued to be null and void.

Second, if the FCC says that the only way it will deal with coordination issues in the future is through an SPOC, then there should be an SPOC. I see nothing at all wrong with the ARRL acting as such an interface providing that the League separate its own political agenda from that of the SPOC's political agenda. This can easily be accomplished by hiring a non-amateur who is a professional administrator to oversee all SPOC operations. No conflict of interest that way.

For its part, the ARRL must accept that the representative body of the SPOC should be made up of one and only one coordination entity representing each state. No multiple entities (such as California with 4 or more) should be allowed. If a state has more than one recognized coordinator, then the ham community should choose which one it wants as its representative.

To keep the organization as antiseptic as possible, there should be no voting membership by umbrella groups such as MACC or SERA, none by ARRL officials, NARA officials, IARN

officials, government officials, ham manufacturers, dealers, publishers of ham magazines or newsletters, etc.

Also limited to non-voting "Associate Status" should be individual repeater owners (unless he or she is an elected official of a recognized coordination body), repeater users groups, individual hams and/or other non-FM entities.

The purpose of the SPOC is to handle FM voice repeater coordination related matters. If there ever is a need for a "Packet SPOC" or an "ATV SPOC" or any other kind of "SPOC," it should be those involved in the special interest that takes the lead to do the same as FM has done. It is not for non-FM voice special interests to try to guide a mode with which it has little in common.

The SPOC as a membership group should hold at least one meeting in a different key city each month. Voting on issues to be handed off to the SPOC Administrator must be by coordinators present only. No proxies under any condition. Finally, the SPOC Administrator should publish a monthly newsletter outlining previous month's actions and those under consideration for action at the next meeting.

As to coordination itself, the entire ham radio community has to demand that no new repeater should be permitted onto the air, or an existing repeater be permitted to continue on the air after enacting new regulations, unless the repeater trustee has been issued a separate repeater license by the FCC. Further, only amateurs who have passed a separate repeater operator's certification examination under the VEC program would be permitted to own/operate a repeater. Further, no repeater license should be issued unless a system was coordinated prior to application for a repeater license.

I also see a simple way of deciding who should and who should not have a repeater on the air. A repeater license could be issued for a finite term, say 5 years, after which the renewal could be sought. At time of renewal, a repeater would be subject to challenge by potential new repeaters wishing to utilize the same channel pair in the same geographic and demographic area. If such a challenge were brought, then the SPOC would be responsible for holding a "comparative hearing" rendering a decision. Only one level of appeal would be permitted before the full Commission.

Another thing that we as spectrum utilizers have to remember is that we — not the repeater license holder — own the spectrum on which a repeater operates. When a repeater leaves the air because the system licensee tires of it, sells the hardware or whatever, the frequency pair must revert back to the coordinator for reassignment to the next waiting party based only on date his/her application was filed. No selling of a repeater with the channel pair included should be permitted as happens now. Hardware is hardware. The spectrum belongs to the ham community — not the metal box.

As long as I am putting my feet into the soggy stuff, I might as well reiterate another two concepts that I have always believed in. All repeaters, regardless of location, should be coordinated using a single unified national bandplan for each repeater subband as developed and implemented by the SPOC. Strict adherence to this bandplan would be mandatory. "Local Option" would no longer exist. In this writer's opinion, "Local Option" never has been justified.

Finally, there is the matter of respect for others. FM and repeaters are not the only users of our valuable VHF and UHF spectrum. Therefore, all repeaters have to be coordinated or re-coordinated — for absolute minimum interference to all other service users on a given band. This means a lot more than minimizing interference to another, distant repeater using the same channel pair or on the channel pairs adjacent. My view of coordination means that a repeater or other relay entity should not interfere with any other individual service users regardless of the mode that they choose to operate. By the same token, no individual amateur should be permitted to wantonly abuse his or her operating privileges in such a way as to maliciously keep a repeater from servicing the majority of the local ham community based on the likes or dislikes of that person.

And who will pay for all this you ask? That has to be obvious. Funding for all of the foregoing can only come from annual fees collected from all repeater "users" being provided a relay service by any repeater.

The foregoing are my ideas. I will be interested to read what the committee writing the "white paper" SPOC presentation paper for the ARRL Board of Directors has to present.

In conclusion

The door is now open. Not every coordinator sees the door open. Some who see it open do not want it to be open. One or two are even willing to fight to close it before their brethren pass through.

But the nay-sayers seem to forget that once a door to the future is open, it cannot ever be closed. The time is here for a change, and call it SPOC, IPOC or POC, its time is now!

A parting shot

I was the only representative of the media to attend the St. Charles meeting in a passive role. I was your eyes and ears. Nothing more. Nothing less. Anything you may have read elsewhere has been written from secondhand or thirdhand information or by someone who may have attended, but also took some active part in the proceedings. I cannot understand how any publication can claim to provide accurate coverage of an event of this import to the future of the nations' Amateur Radio community when the publishers and editors refuse to spend the needed funds to send a reporter, or send one who takes an active role in the happenings. If a publication lacks the commitment to you, why spend your monies to read it? Unlike others, ***Worldradio*** knows it has a responsibility to you! de WA6ITF WR

Nominations due

Nominations are now being sought for the 1996 awards to be presented at the ARRL Atlantic Division Convention. The Convention is held in association with the Rochester, NY, Hamfest, 31 May - 2 June, 1996. The awards are commemorated by handsome plaques to be presented at the hamfest banquet.

"Amateur of the Year" nominees should be outstanding all-round amateurs from the Atlantic Division with a strong record of service to the amateur community. An award for lifetime service to Amateur Radio, the "Grand Ole Ham," is open to Atlantic Division OMs and YLs who have been licensed at least 30 years or are at least 50 years of age. The Atlantic Division "Technical Achievement" award may be presented to an individual or to a group.

Complete information on the awards and nomination procedures is available from the Rochester Hamfest, 300 White Spruce Blvd., Rochester, NY 14623; 800/724-8515 or 716/424-7184. Deadline for nominations is 1 April, 1996.

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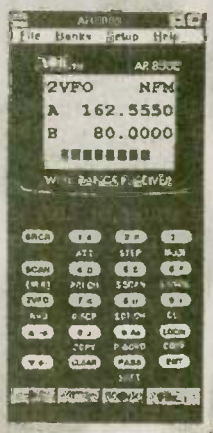

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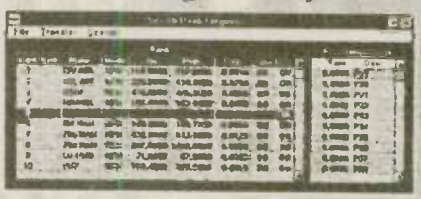

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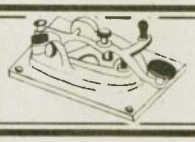

Roland Levin, W2OCJ

Roland M. Levin, W2OCJ, became a Silent Key on 20 September 1995. Mr. Levin was born near Manchester, England, 14 December 1912. He came to Brooklyn, New York around 1932 and moved to Linden, New Jersey in 1956. Mr. Levin held an Advanced license and was a member of the Tri-County Amateur Radio Club. He worked 20-40 Meters.—*submitted by John White, WA2MKV*

William Maki, WX7H

It is my sad duty to announce to you the passing of my good friend William Maki, WX7H, 10 November 1995 at the age of 72. Bill was born in Aberdeen, Washington, April 5th, 1923, and was a lifelong resident.

Bill entered the Army Air Corps during WWII, and was shot down over Germany. He was imprisoned in Stalag 17B for 19 months. After the war, he worked as an appliance repairman.

Bill was active in the VFW, and the Elks Lodge in Aberdeen. He was an enthusiastic Amateur Radio operator and computer hobbiest as well. Attending ham swaps and computer shows with Bill was always a pleasure and he was always a fun-filled companion. Farewell my good friend. —*submitted by Arnold Samuels, KH6COY*

Philip Rand, W1DBM

My first contact with Phil was a bit one-way. In high school, I spent my five dollars of Christmas money on a used radio which had a shortwave band. When doing my homework, and at other times I would regularly hear Phil (W1 Double Button Microphone), W1ZE, a fellow from Nottingham New Hampshire (where the tall pines grow), and a fellow from Twinsburgh, Ohio, who ran 99% of the legal power limit. Personalities are remembered.

Later on, I became W1VMH and was working in the TV business. I was appointed to the TVI committee for the local radio club. The best source for guidelines was Phil. After all, he was the internationally recognized expert in the field. In fact, last October the QCWA named Phil as a recipient of its Presidential Award for his pioneering work on TVI. We corresponded and I received very good advice to help both our fellow hams, and the customers whom I had to satisfy.

Then I bought an Airstream trailer, and so did Phil. After 25 years, I was able to meet him face-to-face, and shake his hand. We continued to see one another for the next 32 years.

Justifiably proud, he spoke of his achievements in electronics, mechanics, photography, genealogy, farming, and many other fields. He was adept at new ways, novel methods and designs. We may never know the extent of the things we enjoy today that were the products of his creative thinking — he was a natural for the corporation research department.

He was always ready to help; from towing others' trailers, to designing a frequency monitor for the visually impaired while he himself could still see. He was always ready to pass on knowledge to others, backed up by more than 50 years of published writing. If disagreements arose, he had the ability to air everyone's opinions, hold his own in the discussion, and have everyone leave smiling and respecting each other's views.

I believe that we were both blessed and privileged by having him with us for 89 years.—*submitted by Everett M. Harrington, W1VMH.* WR

Canada adopts IARP

Canada has announced that it has agreed to adhere to the Region 2 International Amateur Radio Permit. It's the fourth country to do so and has issued the first two permits. These went to radio amateurs; Canada President Farrell Hopwood, VE7RD, and IARU Region 2 Vice President, Tom Atkins, VE3CDM.

SPECIAL EVENTS

Valentine's Day

The Amateur Radio Association of the Tonawandas, (ARATS), an ARRL Special Service Club, will be sponsoring a Special Event station celebrating Valentine's Day and romance around the world! ARA of the Tonawandas Clubhouse Station, W2SEX, will be on the air 1200-2200Z, 10 February. Operation will be on 3.940, 7.045, 7.290, 14.045, 14.290, 146.550. Send QSL and SASE to: ARATS, P.O. Box 430, N. Tonawanda, NY 14120.

Open house

The L'ANSE CREUSE ARC will hold an Amateur Radio open house on 17 February at the Macomb Mall in Roseville, Michigan, for the purpose of introducing ham radio to the public. As part of our demonstration, we will be operating station KN8YUV from 15:00 to 21:00 UTC and will be inviting visitors to join us on the air. We will be operating both phone and CW in the General portion of the 80 through 10 Meter bands.

Thomas Alva Edison

The Metuchen Radio Club will be operating K2YNT on 10 February from 16:00-21:00 UTC from Edison, New Jersey, to celebrate the birthday of Thomas Alva Edison, the wizard of Menlo Park. Frequencies are SSB: 14.280 MHz, 14.305 MHz, 7.250 MHz and 7.230 MHz. For a certificate, send a large SASE and your QSL card with contact number on it to: Dave Kanitra, WB2AZE, 74 Port Reading Ave., Woodbridge, NJ 07095.

Stratford golden anniversary

The Stratford Connecticut ARC will operate W1ORS from 1700Z 10 February, to 2400Z 16 February, to commemorate the 50th anniversary of the club. Operation will be in the lower 25 kHz of the General calss SSB and CW of 80, 40, 20, 15, plus 160, 6 Meters SSB and RTTY.

For a certificate, send 9 x 12 SASE and QSL to May Blakley, WA1EHK, 17 Coram Rd. 4F, Shelton, CT 06484.

Cleveland's Bicentennial

Special event stations in the greater Cleveland, Ohio, area will celebrate Cleveland's bicentennial throughout all of 1996. The Cleveland Bicentennial Amateur Radio Committee is sponsoring award certificates for contacting Cleveland stations signing /200 in 1996. Submissions must include a GCR list and $4, U.S. currency only, no IRCs. Award levels: DX only need work 5, 10, or 25 stations. Calls on new bands count as new stations. All bands included on CW, SSB, and digital modes on HF. No repeater contacts permitted.

QSL via WA8MEM, Dwaine Modock, 28265 Gardenia Drive, North Olmsted, OH 44070.

Awards

Diploma "Hungary 1100"

Hungary celebrates her 1100th birthday in 1996.

The Hungarian radio amateurs invite all licensed radio amateur stations and shortwave listeners of the world to earn the diploma "HUNGARY 1100" in commemoration of Hungary's 11th centenary.

Rules:

Operating period: 0001 UTC 1 January 1996, to 2400 UTC 31 December 1996.

During this time period two-way contacts or SWL reports should be made on any permitted mode and all licensed bands (including the WARC bands) with Hungarian amateur stations having HA1 to HAØ or HG1 to HGØ prefixes. Contacts between the same two stations count only once per band and mode.

Details:

DX (outside Europe) participants: Four (4) two-way contacts (SWL reports). No HA/HG prefix requirements.

EUROPEAN participants: Fifteen (15) two-way contacts (SWL reports) from at least five (5) HA/HG prefix areas.

DOMESTIC HUNGARIAN participants: Fifty (50) two-way contacts (SWL reports) from all HA/HG prefix areas.

Two-way contacts (SWL reports) with stations HG5MCH, HG5BP, HA1ØØT and HA5MCK count as two (2) two-way contacts (SWL reports) or can replace one (1) missing prefix contact (SWL report).

Scoring: one (1) point per QSO (SWL report) multiplied by the total number of prefixes worked (heard).

The highest scorers per continent (North and South America count separately) and per Hungarian prefix areas receive in addition to the certificate also a commemorative plaque.

Claims (logs), witnessed by two amateurs, with seven (7) IRCs (HA/HG stations with 500 HUF) to be mailed by 31 March 1997 to:

Sandor Pocsi, HA5AI
Angyalfoldi Radio Klub
H-1325 Budapest, P.O. Box 150
Hungary

WR

STATION APPEARANCE

Jack McKenzie, N5MFG

*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.*

I took up ham radio after I retired because it was the one hobby I could think of that I could do from a wheelchair! No, I'm not in a wheelchair, but I might be some day. For that reason I did not want to take up skydiving, spelunking or even golf. I attended a seminar about ham radio in June, 1987. I bought tapes and books, started learning code and got my Novice ticket in October of the same year. Shortly after, my XYL and I along with three other couples, chartered a house boat on Lake Powell in Utah and while the others fished, I studied Ohm's Law. While they partied, I was into propagation.

On a seven week tour of Alaska with 30 others in their travel trailers, I worked on my code. Twice a day, no matter where we were, I would find a tree or a picnic table, put on my headset and copy code. Finally, one day a lady said to me, "could I ask just what you have been doing?" Later I made a copy of my new General license and wrote her a letter on the back, " . . . this was what I was doing!"

My radio shack has evolved from a 2 Meter rig powered by an auto battery and an elderly 8088 computer to the setup pictured. That is a Kenwood TS-440S HF transceiver with automatic tuner powered by a Kenwood PS-50 power supply. Next to it is an Ameritron AL-811 linear amplifier. My Kenwood TM-421A 2 Meter rig is not pictured as I also use it mobile. When in the shack, it connects to an ARX-2B Ringo Ranger II. Above is a Realistic PRO-2020 scanner which keeps up with all the repeaters hereabout.

To the left is something I have really enjoyed, a book holder, I guess you would call it. I keep everything in the loose leaf binder, frequencies, schedules, repeaters and call signs. When I take my radios mobile in our RV, the book goes along. Above is my Kenwood TH-215A HT. Below and in the back is my "power center." It is a surge protector for both power and telephone and believe you me I unplug it every time I leave the shack, living here in 'tornado alley' as I do. Also a hotplate for the ever present coffee cup. But this one plugs into an outlet (not visible) controlled by the 12-hour time switch just to the left. This is useful also to plug in the HT battery charger and not allow an overcharge.

In the corner is my 486 DX 66 computer and 15" monitor. I use it primarily with an Amateur Radio call sign database to bring up information about the ham I am having a QSO with at the moment. I once told a YL she could quit being coy about her age, " . . . your birthday is in the public domain now!"

Above my call sign is a model of the B-24 heavy bomber that I flew in the 8th Air Force more than a half-century ago. **WR**

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Six entire operating profiles—including everything from the frequency range to the dimmer level can be stored in the programmable memory for recall at the press of a button. It's like having six transceivers in one.

Data Connector for 1200/9600 bps Packet

Using the 6-pin mini DIN connector on the front panel, you can hook up a TNC to the TM-733A for either 1200 or 9600 bps packet communications.

1200 9600bps packet compatible

* permits required for MARS and CAP use. Specifications guaranteed for Amateur bands only.

Theft-Deterrent Features

For the added safety, you can choose the quick-release detachable front panel kit (option). The transceiver unit can be concealed under a seat or in the trunk.

Other Features

■ 72 multi-function memory channels ■ AIP (Advanced Intercept Point ■ Built-in DTSS with page ■ Cross-band repeater ■ Wireless clone function ■ Wireless remote function ■ Auto simplex checker ■ Built-in CTCSS encoder & optional TSU-8 decoder ■ Key function display ■ Modifiable for MARS/CAP*

144MHz/440MHz & 144MHz/220MHz Operation

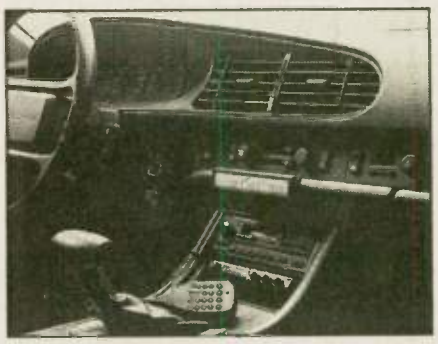
The TM-742A (144MHz; 50W/440MHz; 35W) and TM-642A (144MHz; 50W/220MHz; 25W) dual-band mobile transceivers can be converted into tri-banders with the addition of an optional FM band unit: 28MHz (50W), 50MHz (50W), 220MHz (25W; TM-742A only), 440MHz (35W; TM-642A only), or 1200MHz (10W). The transceiver can display and even receive three bands simultaneously.

101 Memory Channels

For each band, there are 100 memory channels plus 1 call channel. Each channel can store transmit and receive frequencies independently or odd split repeaters.

Separate Control & Display Units

The display and controls can be mounted separately on either side of the steering wheel, for example — while the main unit is concealed in the trunk.



TM-742A

TM-642A

Other Features

■ Built-in DTSS selective calling with page ■ Independent SQL & VOL controls for each band ■ Built-in CTCSS encoder & optional TSU-7 decoder ■ Wireless remote control function ■ High-visibility illuminated panel keys ■ Wide-band VHF/UHF receive coverage (including Air Band) ■ Date & time display, stopwatch, alarm, on/off timer ■ Cross-band repeater function ■ Modifiable for MARS/CAP*

*Permits required for MARS and CAP use. Specifications guaranteed for Amateur bands only. Kenwood follows a policy of continuous advancement in development. For this reason specifications may be changed without notice.

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95ARD-1331

OFF THE AIR

Defending Radio Shack

I read your "Publisher's Microphone" column in December's ***Worldradio*** and felt some comments were in order.

I could hardly believe your callous stance against Radio Shack and their decision to market new 2M radios. The idea of introducing a product when it becomes financially feasible is exactly what brought those "long time supporters" into ham radio years ago. If you doubt that fact, just look at the number of manufacturers marketing 220 MHz radios, both just before and just after Novices were given 220 privileges back in the 1980s.

As for Radio Shack supporting our avocation, well, let me tell you, the Radio Shack name has been known by amateurs for over 70 years. There are ads in the oldest of my *Radio Amateur's Handbook* (1948) listing the Radio Shack Corporation as a retailer of amateur radio hardware. Even if the current Radio Shack bears little resemblance to the old Radio Shack Corporation, they have carried code keys, shortwave receivers and hundreds (or thousands) of various electronics components directed specifically at the budding ham or SWL. That fact, in itself, has probably brought more prospective hams into the hobby than any manufacturer of transceivers can ever claim.

You know, many of the very manufacturers you choose to defend are the very ones that forced such venerable companies as Hallicrafters, Hammarlund, Drake, E.F. Johnson and Morrow (look that one up) out of the ham radio business, only a few short decades ago. I would imagine very little sleep was lost by the newcomers about the impact they were having on the companies they were overthrowing. I only say that Radio Shack should have the same chance in the 1990s.

Now Radio Shack will probably have a minimal impact on the big boys out there (unless, of course, they market a superior radio), but that's what progress is all about. If those "other guys" are worried about a little competition, they will just have to get on the stick and continue to build a better radio at a reasonable price (which is getting harder and harder to find nowadays). After all, it happened once before and, this is the land of free enterprise. I would not want to see a closed market system similar to what is found in a number of other countries, where purchasing a better (or different) radio requires the paying of taxes and tariffs that far outstrip the cost of the equipment itself.

I say, let's give Radio Shack a round of applause for introducing something new and, what's more, putting it on virtually every street corner in every big city (I have yet to see the big boys market their equipment in either Sears or Montgomery Ward!). In this way, Joe ham is able to take his new Technician license downtown and buy a new 2 Meter rig without either having to order it through the mail, or try to find a local amateur radio outlet.

Finally, lest it be said that I am biased against other manufacturers, I own equipment manufactured by Icom, Kenwood, KDK, Alinco and even some relics from Hallicrafters, Gonset, Heathkit and Vibroplex (and one Radio Shack shortwave receiver).

Please do the entire amateur community a favor and give Radio Shack a break.

Thanks and 73,

Randy Jones, N7CKJ
Colville, WA

Worthwhile experience

I've been meaning to write to you for a couple years. A little background first — Grand Haven, Michigan, has been home port for Coast Guard cutters for many years. Before WWII, we berthed the cutter *Escanaba* there. So with the war came a need to put it out to sea for escort duty. On a run to Greenland it was sunk in June, 1943, supposedly by a German sub (Germany has no record of its sinking) and there were only two survivors.

Now the rest of the story — in July, 1992, by shear coincidence I worked AA6EP, Bill Knutson, Solvang, California, who was a radio op on the *Escanaba* but luckily was transferred about 6 months before she went down. A year later while working a Coast Guard special events station we contacted a Norman Darch, W2HGV, of Lakeland, Florida operating W6LY, a club station in Laguna Hills, California. Norman was also a radio op on the ill-fated ship. He transferred approximately the same time as Bill. I just had to get those two guys together somehow. I wrote to Bill, AA6EP, and to the club station W6LY, hoping Norman might still be in the area. I set a sked with Bill for the following week on 14.200. Sure enough Bill was there. After a minute or so I heard a break. It was Norman, still in California.

Thanks to the club station and their help in relaying the messages. They got together on 80M the day before our sked. After 50 years they had a lot to talk about. I don't have to tell you that made my day. Experiences such as these make ham radio worthwhile — enjoy ***WR***, keep up the good work.

Bob Japenga, N8IKU
Grand Haven, MI

More competition

I wish to address the comments about Radio Shack in the Publisher's Microphone editorial in the December, 1995, issue of ***Worldradio.*** Although I usually agree with what is stated in this column, this latest piece struck a raw cord. N6WR's comments centered around the support he believes other equipment manufactures give to our service, and the apparent lack thereof from Radio Shack.

N6WR mentions the booth fees, door prizes, equipment loans and donations, as well as advertising monies as his reasons why we should support them. Although I might concede that some of this type of support does trickle down to amateurs like myself, nothing beats a bargain when I have to spend my hard-earned money on ham equipment.

My personal feeling is that if Radio Shack can sell a comparable piece of equipment for less money than some other brand, they will continue to get my business. This is the kind of support guys like myself can understand and appreciate, not to mention that they are just around the corner to most of us when we're looking for some electronic part to complete that home-brewed project.

Sorry Armond, but if Kenwood, or Yaesu or Icom, et al., has to jack up the price of their equipment to cover their losses due to their support of Amateur Radio through hamfest door prizes (which only supports the winner), etc., they will continue to lose business to Radio Shack. Maybe what's needed is more competition to bring the prices down to more affordable levels.

I wonder . . . did N6WR have the same opinion when these same foreign companies were the "Johnny-come-latelies" to Hallicrafters, E. F. Johnson, R. L. Drake, and other American companies that can no longer support us?

Jim Harding Sr., K3DRJ
LaPlata, MD

More letters on this topic arrived than we have space to print — more next month. —*KB6HP*

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!***

The dreaded pink slip

Trefry A. Ross, W6CSZ

This story might be classified as funny, or strange, or perhaps it was just a bit dumb. It was roughly 1948 to 1950, and I was new to Amateur Radio. I just couldn't get enough of it. Not only did I stay up all night, but sometimes I would go home for lunch and operate while eating a sandwich. In those days I was an installer for Pacific Telephone in Point Richmond, California, just across the bay from San Francisco.

Around noon one day I heard a W2 calling "CQ" on 20M. I was on 40 Meters. This was in the days of home-brew equipment. I had a WWII, BC348 for my receiver (with many modifications — regenerative IF being the best), an 829 B final, with a home-brew VFO. To work the W2, I yanked the plate coil out of its socket and removed a few turns. I tuned my receiver to 20 and heard a beautiful tone, a harmonic I thought was the right one.

I responded to the 2 station's CQ a few times, but no answer. All of this had only taken a minute or so to do, and when there was no response, I just shut the station down and went back to work. That night I rewound the coil for 40M.

About a week later, the dreaded "pink slip" arrived from the FCC. It was from an FCC monitoring station in Idaho, and he had heard me on 10.6 MHz or thereabouts. In figuring out what I had done, it become obvious that I simply hadn't removed enough turns from the coil. Instead of going from 7 MHz to 14 MHz, I had only gone half way, and wound up on 10.6! I wrote to the FCC and told them exactly what I had done. Happily, I never heard from them again.

With today's sophisticated equipment, one couldn't get that far out of band even if one wanted to do so. I may not have worked WAS and DXCC, and all the others, but I sure had fun in the "old days." Funny, strange or dumb, notwithstanding! WR

DX WORLD

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

W-100-N

No certificates were awarded during the month of November for ***Worldradio's*** *Worked 100 Nations Award.*

A complete set of rules, requirements and application forms are available from ***Worldradio***, 2120 28th Street, Sacramento, CA 95818, or from me. Please include a business sized SASE.

Swaziland (3DAØ)

The DX Bulletin reports that 3DAØBK has left Swaziland. However, another active DXer there is Jon, 3DAØCA, who promises 160 Meter activity. Look for this one near 1.827 MHz at 2030 UTC. He listens between 1.833 and 1.835 MHz. According to *DX News Sheet* Jon has permission to use the large broadcast vertical antenna. He did work some stations on the top band in October, but with poor results. He only worked nine stations, eight in Europe and one in Australia. He had permission again to use the antenna and on 17 and 18 November he worked into the U.S. He also had planned some December operation. He is also active on other bands, especially 40 Meters. Look for Jon between 7.001 and 7.010 MHz from 0300 UTC.

Other activity includes 10.104 MHz at 2300 UTC, 14.026 MHz at 1915 UTC, 18.086 MHz at 1730 UTC, 21.010 MHz at 1645 UTC, 21.355 MHz at 1830 UTC and 24.899 MHz at 1200 UTC.

Taiwan (BV)

Much activity has been reported from Taiwan with these calls found on 40 Meters:

BVØCRA	7.015 MHz	1415 UTC
BV2AJ	7.008 MHz	1400 UTC
BV2BI	7.008 MHz	1330 UTC
BV2FI	7.035 MHz	1030 UTC
BV2RO	7.003 MHz	1445 UTC
BV2TA	7.003 MHz	1400 UTC
BV3BW	7.010 MHz	1515 UTC
BV4QR	7.011 MHz	1215 UTC
BV6AI	7.017 MHz	1430 UTC
BV7FC	7.006 MHz	1130 UTC
BV7FF	7.013 MHz	1400 UTC
BV8BW	7.009 MHz	1300 UTC
BV9AAC	7.006 MHz	1500 UTC

If your DXing is restricted to the higher frequencies such as 20 Meters, try these:

BVØBSK	14.018 MHz	1230 UTC
BV2A	14.015 MHz	1215 UTC
BV2PU	14.031 MHz	0915 UTC
BV2RL	14.018 MHz	1230 UTC
BV2TA	14.008 MHz	2315 UTC
BV2YA	14.205 MHz	0045 UTC
BV4OQ	14.181 MHz	1215 UTC
BV5BG	14.207 MHz	2330 UTC
BV7FC	14.024 MHz	2245 UTC
BV7GJ	14.010 MHz	1230 UTC
BV7WB	14.007 MHz	0000 UTC
BV8BW	14.028 MHz	0015 UTC
BV9P	14.195 MHz	1200 UTC

Old-time DXers will remember when Tim, BV2A/BV2B, listed above, was the only source of a contact with Taiwan. With the increase in activity including call areas, prefix hunters should be happy. The last call reported above, BV9P, would be Pratus Island, and may be an old report. Other band activity includes BV2RO on 3.506 MHz at 1330 UTC, and BV7FF on 10.116 MHz at 1545 UTC and 21.015 MHz at 0515 UTC. The 15 Meter contact was with a DXer in the Philippines.

Mongolia (JT)

JT1Z was a big multi-multi operation from Mongolia during the *CQ* Worldwide SSB Contest, was manned by N6AA (JT1FAU), K6MC (JT1FAV), W6XD (JT1FAW), N6TW (JT1FAX), W6MKB (JT1FAY), and N6ZZ (JT1FAZ). The calls in parentheses were the personal calls assigned to them for use outside of the contest. Other activity during November included the following calls:

JT1AT	14.152 MHz	0015 UTC
JT1BG	1.827 MHz	1315 UTC
JT1BS	7.004 MHz	1500 UTC
JT1BV	21.278 MHz	0800 UTC
JT1CS	14.023 MHz	1230 UTC

That 160 Meter report was from a DXer located in the 10th call area of the U.S.

Antarctica (KC4)

A reader recently wrote to me regarding working Antarctica, as he needed that one. No doubt that there are others who also are interested. Here in California about the best time to work Antarctica on 20 Meters is about sunset with the beam due south. As it is now their summer, there should be a lot of activity. VP8CRE is located at Faraday Base. However, no activity from this one was reported. Located at the South Pole is KC4AAA who has been handing out 40 Meter contacts. Look for him between 7.001 and 7.012 MHz. *The DX Bulletin* suggests 7.008 MHz between 0300 and 0430 UTC. On 20 Meters KC4AAA has been worked on both CW and SSB. Try 14.020 MHz around 0200 UTC and 14.243 MHz from 0100 UTC. Also working from the Antarctic is a Russian station at the South Pole, who sometimes works from KC4AAA. KC4/UA3YH has been found on 40 Meters, 7.004 to 7.013 MHz between 0100 and 0500 UTC, and on 20 Meters, 14.010 to 14.021 MHz between 2200 and 0200 UTC. Some of those VP8 calls are also located on the Antarctic continent, but it is hard to tell which. VP8GAV/P probably is located there and has been worked on 7.009 MHz at 1900 UTC.

There was also a VP8ML reported on 3.797 MHz around 0000 UTC.

Guantanamo Bay (KG4)

KG4MN was active during the annual ARRL Sweepstakes. He gave his location as the Virgin Islands, as Guantanamo Bay is included in that section. The average DXer can usually access 20 Meters, so I have the following reports for that band:

KG4CM	14.226 MHz	2345 UTC
KG4MH	14.250 MHz	0115 UTC
KG4SH	14.227 MHz	1830 UTC

On 40 Meters I have the following two reports:

KG4MN	7.006 MHz	1245 UTC
KG4ZE	7.007 MHz	1000 UTC

And on 80 Meters:

KG4CM	3.794 MHz	0300 UTC
KG4MN	3.510 MHz	0115 UTC
KG4NA	3.501 MHz	0500 UTC

Up on 15 Meters, KG4SH has been worked on both CW and SSB. Try 21.020 MHz at 1400 UTC or 21.270 MHz at 1300 UTC. For IOTA purposes Guantanamo Bay counts the same as Cuba.

Fernando de Noronha (PYØF)

DX News Sheet reports that Jose, CT1BOH, has been active from this one signing with PYØFF. He has been reported several times on 160 Meters between 1.830 and 1.835 MHz after 0000 UTC. He was also reported on 80 Meters on 22 November at 0000 UTC on 3.504 MHz. Another call was reported mid-October, that of PYØFM, who was worked on 7.048 MHz at 2300 UTC and 14.203 MHz at 2330 UTC.

Marshall Islands (V7)

Several calls were reported active from the Marshall Islands. V73GT has been busy on both 80 and 40 Meters. Look for this one on 3.504 to 3.512 MHz from 1200 UTC, and on 7.008 to 7.012 MHz from 1100 UTC. V73JT also works multiple bands as does V73KA.

Look for V73JT who has been reported on 3.798 MHz at 1200 UTC, 21.415 MHz at 2215 UTC, and 28.334 MHz at 2130 UTC. V73KA was worked on 1.846 MHz at 1200 UTC, 3.511 MHz at 1230 UTC and 14.240 MHz at 1215 UTC. V73C appeared on 75 Meters one October evening on 3.794 MHz around 1030 to 1200 UTC. He also is very active on the higher bands and puts out a very good signal.

The Marshall Islands formerly used the KX6 prefix prior to independence and have always been plentiful on the bands at one time or another. This is the only country that your DX Editor has worked and confirmed on all nine bands, 10 through 160 Meters. The late November activity of V73WP was that of Tada, JA1WPX. Most of his activity was on satellites.

Heard Island (VKØ)

Further information on the Heard Island DXpedition. It appears to be postponed for some time in the future. According to team member Bob Schmieder, KK6EK, in a note to *The DX Bulletin*, the problems of transportation just could not be resolved. Bob writes: "What happened is that the vessel with which I contracted had been grossly misrepresented to us, and in fact could not possibly have made this difficult voyage. The owner, however, is refusing to refund our money, more than $100,000, most of which he has spent. It appears I was the victim of a deliberate scam, and it will take a protracted legal action to recover even part of the funds, certainly not enough, and not in time to go to Heard Island this season."

Burkina Faso (XT)

DX News Sheet notes that Dan, N9XAG, will be active from N'dorola through 1998 signing with XT2DP. He is new to the DXing game so please be patient. Dan has been reported working SSB on 15 and 20 Meters. Try 20 Meters 14.207 and 14.226 MHz after 2100 UTC; or 15 Meters near 21.280 MHz after 1400 UTC. *Inside DX* reports that Jerry, XT2JF, should be active from Burkina Faso through the end of next summer. He is also Dan's father-in-law, and he too is a phone man. In early November he was reported on 14.185 MHz at 2200 UTC and on 21.303 MHz between 1300 and 1530 UTC. On CW XT2DM, operated by F5RLE, was reported on 14.024 MHz after 2100 UTC. Another station is XT2GA, operated by F5SBP. However, no activity reports were found for this one.

U.K. Sovereign Base (ZC4)

DX News Sheet reports that Nick, G4OOE, will be active from the U.K. Sovereign Base on Cyprus for another two years signing with ZC4EE. The only reports found were those on 14.013 MHz at 1715 UTC, and 24.910 MHz at 1400 UTC. Reported active during the *CQ* Worldwide DX Contest the end of November was ZC4DX. ZC4HA has also been reported on 1.828 MHz at 1645 UTC and 28.025 MHz at 0900 UTC. Both were European reports.

IOTA

Art Phillips, NN7A, and Mike Sharp, NG7S, of the NorthernArizona DXAssociation, will operate V31JZ and V31RL, respectively, from Caye Bokel in the Turneffe Islands (NA-123) 3-7 February, 1996. The operation will be mostly CW with some SSB activity on the usual IOTA frequencies. Following their Turneffe operation the group will be joined by Jim Zimmerman, KG6VI, and operate from Belize Caribbean Sea Coast South group (NA-180) as V31JZ, V31RL and V31VI, 9-14 February.

This particular group was first activated by this DX club in February 1993. They plan to concentrate on 80 and 160 Meters at night. The group will also be operating as V31JZ during theARRL CW DX Contest, but that will be from the mainland.

John Reisenauer, NL7TB, Rick Kaplan, N6IV/KL7, and others are planning for a second attempt to the Barren Islands this coming July. This group made an attempt last summer at this one, however the weather conditions prevented the landing. They settled for a very successful operation from Fox Island (NA-197). The Barren Islands operation will be from Ushagat Island for four days beginning on the evening of 4 July 1996. This island is the largest of the seven-island group located at the entrance of Cook Inlet, some 60 miles south of Homer, Alaska.

As the Barren Islands are notorious for extreme rip tides and treacherous seas, a helicopter landing is being considered. The islands experience 20-foot tidal ranges and are often raked by erratic, extreme winds. Fierce storms with raging seas surely lend adventure to these wild islands, and this factor along with precipitous terrain and isolation have largely protected them from human incursion. The group is looking for sponsors to help with the financial planning. IOTA DXpeditions of this sort are usually entirely financed by the team members. There is normally no scheduled transportation to islands such as these, driving the transportation costs way up. I'm sure they could use an additional operator or two, who could help with the financing.

Our selection of IOTA islands found on the bands during the month of August includes the following, with dates when first reported:

AS-007	Honshu Island	JR3NZC	11 Nov
AS-024	Yaeyama Islands	JS6LIH	19 Nov
AS-045	Ullung Island	HL5FUA	12 Nov
AS-076	Shikoku Island	JR5JAQ	11 Nov
AS-077	Kyushu Island	JI6KVR	11 Nov
AS-078	Hokkaido Island	JJ8KYL	11 Nov
EU-110	Brioni Island	9A/DJ8QP	03 Nov
NA-026	Long Island	KB2UMB	04 Nov
NA-055	Maine State West	AK1L	12 Nov
NA-036	Vancouver Island	VE7DUG	05 Nov
NA-066	Santa Catalina Island	KG6VI/P	11 Nov
NA-093	Jutia Island	CO1OTA	23 Nov
NA-114	Les Saintes Island	FG/EA2KL	05 Nov
NA-138	Amelia Island	W4/YV5DTA	11 Nov
NA-152	Sarichef Island	KL7OH	10 Nov
NA-170	San Blas Archipelago	3FØT	04 Nov
OC-088	Borneo	9M6TF	14 Nov
OC-157	Banda Island	YE8V	15 Nov

All information regarding the IOTA program and a list of islands is in the *IOTA Directory*, available for $10 from Dewitt L. Jones, W4BAA, P.O. Box 379, Glen Arbor, MI 49636. To apply for an IOTA award it is mandatory that you possess your own copy of the directory.

DXCC processing status

The DXCC Desk reports that the number of unprocessed applications at the end of October was 434 (49,794 QSL cards). During the month 339 applications (36,043 QSL cards) were received for endorsements and new awards. Applications acted upon at the end of the month were received less than four weeks earlier. A few received prior to that time were waiting for paper records to be converted, or were being audited, and so had not yet been completed. The DXCC staff continues to operate at less than full strength.

Most Wanted Countries Survey

The results of *The DX Magazine* 1995 Most Wanted Countries Survey are in. Bhutan and the Andaman Islands still are on top of the list. As in past surveys only the first 25 (out of 100) are listed. The listing is arranged by rank which includes the DXCC country name, prefix, and the percent of *The DX Bulletin/The DX Magazine* subscribers that still need to work and/or confirm a contact. Notice that North Korea is not on the list. The reason for this is that North Korea was added to the DXCC Countries List after the survey was printed. And since only 16 different stations managed to work P5/

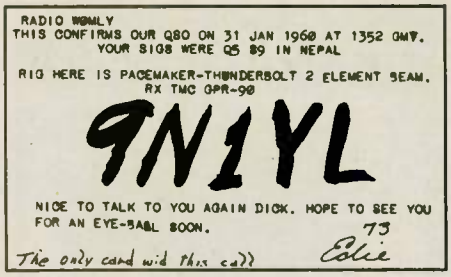
OH2AM surely this one would be at the top of the list. The column to the far right is the ranking of these DXCC countries in 1980.

1	Bhutan	A5	65.5	55
2	Andaman Islands	VU4	63.4	10
3	Heard Island	VKØ	60.8	62
4	Yemen	7O	55.5	—
5	Libya	5A	55.0	22
6	Macquarie Island	VKØ	48.7	52
7	Tromelin	FR/T	47.6	38
8	Laccadive Islands	VU7	47.3	55
9	Mount Athos	SV/A	46.7	45
10	Burma	XZ	45.8	3
11	Bouvet Island	3Y	42.4	12
12	Eritrea	E3	40.3	—
13	Glorioso Island	FR/G	40.3	15
14	Kermadec Island	ZL8	40.0	44
15	Tunisia	3V	39.1	71
16	Campbell Island	ZL9	39.1	58
17	Amsterdam Island	FT/Z	38.6	—
18	Agalega Island	3B6	37.0	—
19	Laos	XW	34.9	26
20	Juan de Nova	FR/J	34.5	14
21	Iran	EP	34.3	—
22	Marion Island	ZS8	34.1	74
23	Crozet Island	FT/W	33.7	9
24	Chad	TT	32.8	33
25	Annobon Island	3CØ	32.4	39

What was at the top of the list in 1980 isn't even included in the present standings. Why the big differential can be attributed to many reasons. In 1980 some of these DXCC countries had much activity, some so much as they weren't even considered to be listed in the survey. Some weren't even a DXCC a DXCC country yet. Then these countries go inactive and with all the new DXers entering the game, these countries are driven to the top of the list. And some of us never get around to working them. This DX Editor needs 13 of those in the above list (I'm not going to say which ones). A complete 1995 Most Wanted Survey, with regional and mode breakdowns and detailed analysis, is available from *DX Publications,* P.O. Box 50, Fulton, CA 95439-0050 for $2. Elsewhere the cost is US$5.

Antique QSL Department

In our September 1995 column the card from 5A5TZ was run. Dick McKercher, WØMLY, responds with a photo of the OM/YL team that operated 5A5TZ, and also 5A1TZ. Located in Tripoli, George (W4IWA) and Ruth (WA4OBF) Cottrell. Dick worked George on 24 June 1966. George held other calls over the years prior to that including HP2ER, CE9ER, W3HOY, W5IKX, W8PBB, and W3PD. It is not known what became of George or Ruth. A check with our Buckmaster CD-ROM showed nothing for them. There is a George Cottrell in California listed. However, this was a Novice call, and I doubt that after all the years of active DXing, he would have ended up with a Novice call.



The 9L1YL card from Nepal is a "one-of-a-kind QSL card," also submitted by Dick. Dick worked this one back on 31 January 1960, and stated that he had worked six (6) 9N1 stations in a row. Glen Ward, 9N1GW, and his crew were installing telephone equipment on New Year's and were having a party, and at that time they had

QSL Routes

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

3B8/F5PXQ	—F5KDZ	AY4VCI	—LU1VZ
3C1/TU4EI	—KM4P	BT1DX	—WA3YVN
3D2OQ	—SM5BOQ	C91S	—W8GIO
3D2RW/R	—ZL1AMO		(See Note 1)
3D2SH	—JR1LVB	C9RDM	—W8GIO
3D2SN	—SM5BOQ		(See Note 1)
3FØT	—HP2CWB	CEØZAM	—CE3ESS
3V5A	—YT1AD	CN8GH	—K1SE
3V8BB	—DL2OBF	CN8TM	—JR2ITB
	(See Note 5)	CO1OTA	—CT1ESO
3W6GM	—DF5GF	CQ7M	—CT1FMX
4B9CQ	—AA6BB	CQ9M	—G3PFS
4K6D	—R3VHF	CR9U	—DL2HYH
4K9W	—DL6KVA	CR9X	—DK8WF
4M5X	—WS4E	CT3/DF5AN	—DF5AN
	(See Note 3)	CT3/DK8WF	—DK8WF
4U1ITU	—AA1AC	CT3/DL2HYH	—DL2HYH
	(See Note 2)	CT3/DL4ZBI	—DL4ZBI
5H3CK	—I4LCK	CT3DX	—HB9CRV
5L2M	—DJØIF	CT3FN/P	—HB9CRV
5NØ/OK1MU	—OK1DCH	CT3UE	—G3PFS
5N35/OK1MU	—OK1DCH	CYØTP	—VE1CBK
5N35ALE	—DJ2VZ	EA8/DK8SX	—DK8SX
5R1DS	—PA3BXC	EA8RG	—DFØDX
5R8DS	—PA3BXC	EI7M	—EI6HB
5U7AA	—HH2M	EN2H	—I2PJA
6D2X	—K5TSQ	ET3KV	—DL1VU
7J1AWO	—KQ4GC	FG/EA2KL	—EA2KL
7Z2AB	—K1SE	FG/EA3ELM	—EA3ELM
7Z5OO	—W1AF	FK5DX	—WB2RAJ
8P9Z	—K4BAI	FK8GJ	—F6CXJ
8Q7BY	—JAØBYS	FK8HC	—HH2HM
8Q7IG	—JA3IG	FOØSUC	—F5KFE
8Q7RJ	—JA9PRJ	FOØZR	—K1RH
8Q7VJ	—G4ZVJ	FR5HR	—F5RRF
8Q7WD	—G4RWD	FT5XK	—F6KQD
9A/DJ8QP	—DJ8QP	FY5YE	—AC5K
9G1WJ	—K1SE	GJ3NAT	—G6CSY
9G5AR	—N7BG	GM4DMZ	—GM3WOJ
9G5MF	—KC7V	H8ØT	—HP2CWB
9G5RF	—GM3YTS	HC8N	—AA5BT
9G5SX	—G3SXW	HH2/F5OKX	—F5OKX
9G5VT	—K5VT	HI3/NQ2R	—WA2VUY
9L1/TU5EV	—KM4P	HI3/WA2VUY	—WA2VUY
9M2TO	—JAØDMV	HI8/NQ2R	—WA2VUY
9M6TF	—F6BFH	HI8/WA2VUY	—WA2VUY
9M8R	—W7EJ	HOØT	—HP2CWB
9R1A	—PA3DMH	HP1XVH	—KFØUI
A45ZW	—K1SE	HSØZAA	—KM1R
A61AF	—N1QMM	HZØZBJ	—W8GIO
A61AH	—KA5TQF		(See Note 1)
A61AM	—KA5TQF	IG9R	—IV3TAN
A92FX	—K1SE	IMØRUH	—ISØJMA
A92GD	—K1SE	IO2L	—I2OKW
AA4LL/HP1	—AA4LI	IQ2L	—IK2JYT
AHØAV	—JH6RTO	IQ2X	—IK2GZU
AHØT	—JA6BSM	IQ4A	—I4VEQ
	(See Note 7)	IQ7A	—IK7XIV
IR3MD	—IN3BHR	TY4A	—GM4AGL
IR3X	—IK3QAR	TY5AR	—N7BG
IYØTCI	—IØKHP	TY5MF	—KC7V
J48Y	—SV1BKN	TY5RF	—GM3YTS
JT1FAU	—K6VNX	TY5SXW	—G3SXW
JT1FAV	—K6VNX	TY5VT	—K5VT
JT1FAW	—K6VNX	TZ6FIC	—F6KEQ
JT1FAX	—K6VNX	TZ6ODM	—N9DHW
JT1FAY	—K6VNX	TZ6WO	—WB6EQX
JT1Z	—K6VNX	UU2JZ	—LZ1ZJ
KC6JZ	—JA7FWR	V26AK	—WB2P
KC6MW	—JE8XRF	V26DX	—KK3S
KD4JHX/KHØ	—JI1CEL	V26RN	—KR2J
KE2VB/KP2	—KE2VB	V26TS	—KF3P
KG4JT	—W3JT	V31JZ	—NN7A
KG4ML	—WB6VGI	V31ML	—N5FTR
KG4ZE	—K4SXT	V31MX	—KØBCN
KHØCS	—JA6PFR	V31RL	—NG7S
KHØDP	—7J6ABK	V31UA	—KT6V
KHØR	—JE6DND	V31VI	—KG6VI
KHØS	—JA1OGX	V47KP	—K2SB
KHØV	—JA1QNV	V73CO	—V73AX
KH2GR/KHØ	—JF6BCC	V85HG	—JH7FQK
LX4B	—LX1TI	VE2QRZ	—WB2K
LZ9A	—LZ2KTS	VE8TA	—VE2BQB
N1OCS/VP9	—N1OCS	VK4ALF/VK9	—AA6BB
NP4Z	—WC4E	VK8NSB/P	—VK8HA
OK5W	—OK1AEZ	VK9XA	—JA2NVY
OM7M	—OM3PA	VK9XH	—JA1CMD
OM8A	—OM3RM	VK9XJ	—JA2NQG
OX/JA1OEM	—JA1OEM	VP2EFO	—W8TPS
OZ/AHØAV	—JH6RTO	VP2MEY	—JH1NBN
P4ØW	—N2MM	VP5FOC	—W9VNE
PA3EVJ	—VE3MR	VR2RJ	—JH1BED
PI4COM	—PA3CAL	WB8GEX/C6A	—WB8GEX
PJ2J	—K1CPJ	WHØABC	—JR6OCL
	(See Note 6)	WH2M	—JA7FWR
PJ9JT	—W1AX	WP2AHW	—WD5N
PQØMM	—PP5JR	WR1J/WHØ	—7J2AA
PQ5L	—PP5LL	XL2MCZ	—VE2QK
PT5M	—PP5LL	XM7SBO	—VE7SBO
PW2N	—PY2NY	XT2DM	—F5RLE
PXØUP	—PY1UP	XT2GA	—F5RLE
PYØFF	—CT1AHU	XT2JB	—KM4P
PYØUP	—PY1UP	XT2JF	—N5DRV
S21ZZ	—JA2NQG	YJØARE	—GØREP
S79MAD	—GW4WVO	YS1ZTM	—K8LA
S92AD	—YT1AD	ZB2X	—OH2KI
S92P	—F6KEQ	ZD8Z	—VE3HO
S92PI	—F6KEQ		(See Note 4)
T32BE	—WC5P	ZF2AY	—K9LA
T32ZB	—DJ4ZB	ZF2RF	—K3UVT
T99MT	—K2PF	ZF2RR	—N8SR
TA4ZM	—DK5WL	ZF2SF	—JH6RTO
TJ1GD	—SP9CLQ	ZF2TY	—JA6VZB
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TK5NI	—HH2HM	ZK1NJX	—LA9JX
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TU5EV	—KM4P	ZL7CW	—WB8YJF
TX8FU	—FK8FU	ZL7PYD	—K8PYD
TY1IJ	—DK8ZD	ZWØC	—PS8DX
		ZX2A	—PT2BW

Notes:

1. This manager will not answer QSL cards sent via the bureau. Please QSL direct only.

2. This route applies for the period 20 to 21 November 1995 only.

3. This route applies for the period 21 to 28 November 1995 only. Also can QSL via YV5ARV.

4. U.S. return stamps will be accepted.

5. This route applies for the *CQ* Worldwide DX Contest in November 1995. During the period 17 to 31 October 1995 QSL cards should be sent via YT1AD.

6. This route will apply for the ARRL International DX Contest (CW) only.

7. Please send QSL requests to this manager via the bureau.

permission to sign 9N1 and their initials. While talking to Glen, he was asked if he wanted to work some other 9N1 calls. So each member of the crew came on and worked Dick with the 9N1 and their initials. Dick may be familiar to you, as some of his DX calls have appeared in this section. Two of them, 4W1MY and 6L6MY, were used in the 1950s when he was in the Middle East. Dick, now retired, has often been present at the DX conventions during the past several years.

Lugo Award

The Lugo Award is offered free of charge by the Groupo DX Lugo for working and confirming members of that group. At least three members must be represented (DXers in Europe need 5 and those in Spain need 15). The group has several members, all with the EA1 call. Check your EA1 QSL cards for those who reside in Lugo, Spain. After you have collected the required cards send them with your application to Grupo DX Lugo, Manager Diploma DX Lugo, P.O. Box 313, E-27080 Lugo, SPAIN. The same station may be worked on a different band, but must be a different date.

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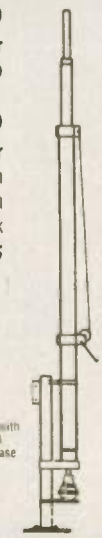

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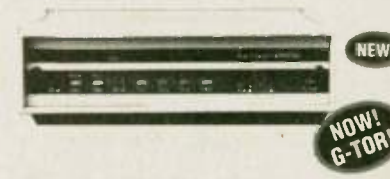

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DX Prediction — February 1996

Maximum usable frequency from West Coast, Central US and East Coast *(courtesy of Engineering Systems Incorporated, Box 939, Vienna, VA 22183).*

The numbers listed in each section are the average maximum usable frequencies (MUF) in MHz for contacting five major areas of the world centered on Africa-Kenya/Nairobi, Asia-Japan/Tokyo, Oceania-Australia/Melbourne, Europe-Germany/Frankfurt, and South America-Brazil/Rio de Janeiro. Chance of contact as determined by path loss is indicated as bold *MUF for good, plain MUF for fair, and in parentheses for poor. UTC in hours.

WEST COAST

UTC	AFRI	ASIA	OCEA	EURO	SO AM
10	*(10)*	10	*14	*(8)*	*13
12	*(9)*	10	13	*(8)*	*(12)*
14	*(14)*	10	12	*(12)*	24
16	*(20)*	10	*18	*(15)*	27
18	22	*(10)*	*(16)*	*(11)*	28
20	23	16	*(18)*	*(9)*	29
22	19	21	23	*(9)*	29
24	*(17)*	23	26	*(8)*	*26
2	15	20	26	8	*20
4	12	13	20	8	*17
6	*(11)*	*(12)*	17	9	*15
8	*(10)*	*11	*(15)*	*(8)*	*14

CENTRAL USA

UTC	AFRI	ASIA	OCEA	EURO	SO AM
8	*(12)*	8	*(14)*	*8	*13
10	*(12)*	8	13	*(8)*	*13
12	*(18)*	8	12	*(12)*	18
14	25	11	*19	16	24
16	28	*(10)*	18	16	*27
18	28	*(10)*	*(16)*	*(14)*	*28
20	23	*(15)*	*(18)*	*(10)*	*29
22	19	*(18)*	23	*(9)*	*28
24	*17	*(15)*	27	8	*23
2	*15	*(10)*	*(22)*	8	*19
4	*14	*(9)*	17	8	*17
6	*(13)*	*(8)*	*(15)*	8	*15

EAST COAST

UTC	AFRI	ASIA	OCEA	EURO	SO AM
7	*(12)*	*(8)*	*(13)*	*8	*14
9	*(12)*	8	*12	*(8)*	*13
11	23	8	12	*(12)*	18
13	28	9	*23	17	23
15	29	*(8)*	19	17	*26
17	*29	*(8)*	*(17)*	16	*28
19	*25	*(8)*	*(15)*	*(12)*	*29
21	21	*(15)*	*(21)*	*(10)*	*29
23	*16	*(15)*	*(25)*	9	*24
1	*14	*(10)*	*(18)*	8	*20
3	*13	*(9)*	*(15)*	8	*17
5	*13	*(9)*	*(14)*	8	*15

Miscellaneous

The official newsletter of the Western New York DX Association had an interesting comment regarding the SSB portion of the *CQ* Worldwide DX Contest. I am taking only excerpts of his remarks and not the entire editorial.

"Today is Monday, October 30, 1995. Not 24 hours ago, a number of other WNYDXA members, myself included, were well on the way to making ourselves hoarse. Of course, this was all for a good cause — the sideband portion of the *CQ* Worldwide DX Contest. Somewhere, someone will ask, 'Was it all worth it?' The answer, of course, is a resounding 'Yes!' Yes, I did personally benefit from the activity in the form of new countries and new bandfills, but I say this for other reasons. This is what makes it all worthwhile. This is what ham radio is really all about. Think about it. 73, KB2NMV."

This is what I have tried to express many times before. The DX contests are a wonderful source of brand new DXCC countries for the new DXer. It is much more fun than sitting around waiting for the list master to give you permission to call a DX station and approve the contact. In a DX contest you don't need permission to call a DX station and the only approval is the DX station acknowledging the contact. Simple enough.

The above editorial also expressed other interests that I didn't quote, including the meeting of club members during the event, and also those DX stations that you work year after year. Yes, DX contests are a definite part of the whole DX game.

QSL Information

John Parkinson, W6KBC, needs QSL information for FT8AA (or FT8OAA) who he worked during the *CQ* Worldwide DX Contest in October 1995. The following month he worked XV7SW on 14.016 MHz and needs a route for that one too. The various DX newsletters have reported activity of XV7SW but nothing has been found for the FT8AA. No QSL information has been found for XV7SW in recent DX newsletters. You need to find someone with a large database for QSL routes.

Bill Hilyerd, K4LRX, writes that Sha Perera, 4S7WP, is looking for a stateside QSL manager, and prefers a station with a short call of three or four letters total, such as an Amateur Extra formatted call. If interested contact Sha at 11A Wijaya Road, Kollonnawa, SRI LANKA. This seems to be an odd request. What difference does the QSL manager's call have in order to do the job?

QSL addresses

1B/KUØJ —Igor, P.O. Box 385035, Bloomington, MN 55438-5035
9A1CEI —Radio Club Pazin, M.B. Rasana 2/4, HR-52000 Pazin, CROATIA
A71EA —P.O. Box 20606, Doha, QATAR
BV4OJD —P.O. Box 35, Toufen, TAIWAN
EY8/K4YT —Karl Renz, PSC-115 (ESC), APO AE 09213
EY8/NP2AQ —Ron Maples, PSC-115 (ESC), APO AE 09213
J2ØRAD —A.R.A.D., P.O. Box 1076, DJIBOUTI
S79NB —P.O. Box 448, Victoria, Mahe, SEYCHELLES
TA/KUØJ —Igor, P.O. Box 385035, Bloomington, MN 55438-5035
VP8CRE —P.O. Box 260, Port Stanley, FALKLAND ISLANDS
ZC4EE —Nick Langmead, P.O. Box 84, Dherynia 5385, CYPRUS

Many thanks to the following contributors: W1BIH, K4LRX, W6KBC, NN7A, WL7MY, W7TB, WL7ZA, Western New York DX Association (KB2NMV), Western Washington DX Club (WAØRJY), Northern Arizona DX Association (W7YS), Salt City DX Association (KB2G), The American Radio Relay League (K5FUV), *425 DX News* (I1JQJ, IK1IYU), *The Ohio/Penn DX Bulletin* (KB8NW), *CQ Ham Radio, Radio and Communications* (VK9NS), *Long Skip* (VA3JS), *The Low Band Monitor* (KØCS), *Island News* (W5IJU), *DX News Sheet* (G4BUE), *QRZ DX* (N4AA), *Inside DX* (N2AU), and *The DX Bulletin* (VP2ML).

DXers are always in an educational process, including your DX Editor. During the *CQ* Worldwide DX Contest in November it was noticed that 20 Meters was open into Europe earlier than usual and when the usual times came about, the band seemed to close. I also managed to work some Europeans on 40 Meters just prior to sunset with a simple dipole and 100 watts. Hope you had a good month and worked some new stuff! 73 de John, N6JM. **WR**

Newsline on Microsoft network

The data version of *Newsline* is now available over the new Microsoft Network. According to Bruce R. Baily, KA6TFH, of Orange, California, *Newsline* can be found in the Amateur Radio file library area. Just look for the title *Newsline* files and download.

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Down to two

When I wrote last month's column, I noted that there had popped up in my area of residence no less than nine or ten new repeater coordination councils to rival the long existing Two Meter Area Spectrum Management Association. I also noted that all but one or two of the newcomers were not serious players.

The past five weeks have proved this hypothesis to be correct. As I write this in early December of 1995, the number of challengers to TASMA has dropped to only one. But I have to tell you, it is a rival that is very well organized. It's called TMRCC — The Two Meter Repeater Coordination Council of Southern California.

Why do I believe that TMRCC has at least the possibility of ousting TASMA as the coordination council of record for 2 Meters in Southern California? Simply because of the people involved in it. To be a TMRCC member you must have a repeater on the air and a dislike for the politics of ham radio.

The Interim Chairman is Steve Jensen, W6RHM. If the name and call sign sound a bit familiar it is because this is the same Steve Jensen who is among the nation's most respected broadcast and telecommunications consultants. He is the son of the late Robert Jensen, W6VGQ ,who was one of the nation's pioneering broadcast engineers. His stepmother was the legendary Lenore Jensen, W6NAZ, and Steve's sister Cynthia Wall, KA7ITT, is the well-known author of young people's ham radio adventure books. Steve's background is impeccable and his dedication to the needs of ham radio is unquestioned.

I spoke to Steve Jensen and asked him why a full-time professional with so many business commitments would take the time to get involved in what is bound to be a bitter uphill struggle? His answer was simply that it was time to remove the years of politics from the repeater coordination process and return it to an activity based exclusively on technical merit. He says that once the infrastructure of TMRCC is established, he will step aside.

The biggest difference between TMRCC and TASMA is over the issue of repeater user involvement. Since its formation as an offshoot of the old Southern California Repeater Association, TASMA has been very much repeater user oriented. One of the basic precepts on which TASMA was founded was that the "ham in the street" with his hand-held has just as great a vested interest in the development of 2 Meters as does the repeater owner-operator with his many thousands of dollars of equipment sitting on a hilltop. As such, repeater users had the inalienable right to decide who could and who could not operate a repeater on 2 Meters in the geographic area self-assigned by TASMA as its domain.

In retrospect, this has worked to some degree. The name TASMA is probably known to more hams than any other frequency coordinator in the nation. In my travels to other cities, I have often been asked by local hams if it was true that "California had a repeater council where average hams could tell repeater owners how to run repeaters?" When I explained that TASMA originated as a melting pot to permit interaction between owners and users, it was rarely understood. Neither user groups nor system owners could fathom the need for interaction between the two. Even at last October's National Frequency Coordination Conference in St. Louis, the needs, wants and desires of repeater users was never once discussed.

TMRCC believes that only those who have made the investment in time and dollars have a right to decide how and where a repeater shall be operated. It, like most of the rest of the nation's repeater coordination bodies, has no provision for membership by non system owners. Also as with most of the nation's coordinators, it gives no recognition to repeater users or any of their representative groups. In other words, TMRCC wants to be a "traditional coordinator" in a nontraditional geographic area.

One might call it the desire for separatism on the part of repeater owner-operators. This desire for separatism seems to have come back to where re-

peaters began. A desire by many of the region's repeater owner-operators — at least 80 to date — to sever relations with their user base and unite with other repeater owner-operators under a common banner that says: ". . . we are different from you . . . we are the service providers and as such we — not you — will determine exactly how our services will be made available."

As I complete this chapter in the history of Southland 2 Meter frequency coordination, the TMRCC has not been able to get the ear of either the local FCC office or the region's FCC officials. Both still recognize TASMA as the singular official voice of the needs of the local 2 Meter FM community. Nor has TMRCC held any open meetings yet although one is scheduled before month's end. That meeting will probably be a "do or die" for TMRCC. If the turnout of repeater owners is large, and if most of the longtime (2 to 3 decade) repeater owner-operators show up to voice support, then TMRCC will ultimately replace TASMA. On the other hand, if turnout is light, then TMRCC, like so many others, will merely be a flash in the pan. This reporter, along with his camera and cassette recorder, will try to attend the TMRCC gathering to let you know.

A blatant promo

As most of you know, for the past nineteen years I have produced the weekly on-air *Newsline* ham radio bulletin service. Actually, it started back in the summer of 1976, when Jim Hendershot, WA6VQP, realized that hams were not using modern news delivery technology very wisely, and decided to do something about it.

With assistance from Wayne Rankin, WA6MPG, and yours truly, Jim started what he called *The Westlink Amateur Radio News*. This was a local VHF repeater oriented ham radio bulletin primarily geared to happenings nationally that affected FMers in the Los Angeles area. Without going into excruciating detail, suffice to say that the *Westlink Amateur Radio News* of the mid 1970s is the granddaddy of today's Amateur Radio *Newsline*.

About five years ago, we were approached by a ham in the Midwest named Dale Cary, WDØAKO, who offered to rewrite *Newsline* and then post it electronically. During my days "playing" on Prodigy, I had been asked many times to post our scripts there, but the thought of hand-typing in each story made me shudder. In those days, there was no way to upload text to the Prodigy bulletin boards, and to be candid, the people running Prodigy had no concept of what ham radio was. Nor did they really seem to care. Their blatant censorship of "hamspeak" was intolerable. After a year and a half of wasting my time, I canceled my Prodigy membership.

My next foray was over to GEnie — the General Electric Consumer Information Service. Unlike Prodigy, the ham radio area was run by a ham and "hamspeak" was welcome. The folks at GEnie willingly dedicated space where we could post *Newsline* scripts to the public forum, and Dale remains doing so to this day.

Volunteerism has been the real key to the evolution of *Newsline* — hams, and sometimes even non-hams offering to help because they enjoy what we do and want to be a part of it. As a result, other services began downloading and redistributing *Newsline* in data form all over the place. When non-ham Steve Coletti joined ranks with Dale we became the first ham radio news and information service to post directly to the Internet. Then Lew Williams in North Carolina created a *Newsline* home page for us on the World Wide Web. The latest step in our evolution is audio on the Internet!

The *Newsline* Internet audio service

If you're tired of tuning in too late to hear Amateur Radio *Newsline's* weekly broadcast on your local repeater, you can use your computer to listen to the same newscast anytime you want. From coast to coast, people are already doing just that, thanks to a radio amateur in Birmingham and the Internet.

Newsline's weekly broadcasts are now available in audio form, and in real time, on the World Wide Web. *Newsline* on Internet is the creation of Bill Levey, WA4FAT, a *Newsline* fan and Internet enthusiast. "I've always enjoyed *Newsline*," Levey said. "Unfortunately, my schedule doesn't allow me to hear it on a regular basis when it's aired. So I got to thinking about how nice it would be if the Internet would provide *Newsline*, and then discovered that there's a relatively easy means of accomplishing this."

While *Newsline* airs at scheduled times on repeaters throughout the world and on HF, the number of potential new listeners could grow exponentially because so many people have Internet access worldwide. "The best industry estimates peg that number at somewhere between 20 million and 30 million folks globally," Levey said.

The first *Newsline* newscast was posted on Internet the weekend of 4 November 1995. Only a few days later, Levey was receiving electronic mail from people throughout the United States who had already discovered the service. After adding *Newsline* and another audio program he creates, Levey said the number of people visiting his Web site increased by between five and six times, a figure he found astounding.

Enthusiastic response

Response has been overwhelmingly positive, Levey said. "I've received quite a number of messages from folks who are already enjoying it," he said. "A fellow in Anchorage, Alaska, wrote to say he was delighted to have found *Newsline* available on the Internet. He works for a local radio station and inevitably misses the local repeater broadcast."

Missing the weekly broadcasts is a familiar problem for Jeff Davis, N9AVG, of Westchester, Ohio, who also sent e-mail to Levey. "I am listening to *Newsline* while writing this letter to you," Davis wrote. "Nice touch. I've always wanted someone to do this. The really cool thing is, I can hear it when I want to hear it instead of having to listen to a repeater at a certain time!"

"People are telling their friends," Levey said. "I got a note from a guy on Canada's Prince Edward Island. He loves the (Web) site."

A member of the Baylor University Amateur Radio Club in Texas wrote to say he finds the service extremely useful and was grateful to have it.

A shortwave listener called from Colorado Springs to say he thoroughly enjoys listening to *Newsline* on Internet, Levey said. "He was interested in getting into Amateur Radio. Our site and *Newsline* just might have lit a spark that will lead him down the path to getting his license."

How to access *Newsline* audio on the Internet

You must have a computer equipped with a modem and multimedia card. Because audio streaming may not be available from some major national Internet providers, you must have either SLIP or PPP access to the Internet. Levey's site uses the True Speech audio streaming format. Visitors who do not have True Speech can download it from Levey's Web site. Levey's home page can be reached at the following

address (Universal Resource Locator):
http://www.scott.net/~wa4fat

Proposed coordination guideline XXX

As this is written, we are only a few weeks away from the ARRL's first Board of Directors meeting of 1996. One of the key issues to be discussed is the acceptance or the denial by the Board of a Memorandum of Understanding between the ARRL and the nation's repeater frequency coordinators on the conditions under which the League will accept the position of "Single Point of Contact" to the FCC on all FM and repeater related issues. Since last November, a select committee of the nation's coordinators has been at work formulating this MOU, and by the time I sit down to write next month's column, the decision as to acceptance or denial by the ARRL board will be known to all.

A few months ago, when they began their deliberations, I submitted to them — unsolicited — the following draft proposal. It was done part in jest and part in all seriousness to protect repeater coordination councils from making the mistakes made in Southern California. I doubt if it was incorporated to the final draft, but it is worth thinking about:

"Under no circumstance, shall a recognized frequency coordinator permit itself/himself/herself to become involved in the resolution of internal disputes between the owner/licensee of a given repeater and his/her user base (or user support group). If ever approached by a user or user group asking that the coordinator resolve an internal matter of the repeater or remove its coordinated status, said user or user group will be informed that coordination bodies do not deal in internal dispute resolution, and there is no forum available for a user or group of users to challenge the valid coordination.

Only if the system owner/licensee voluntarily vacates the coordination or is found to be in violation of coordination standards and refuses to rectify the situation, can consideration be given to rescinding a given coordination. But never, under any circumstance will a user-based complaint be considered as grounds for de-coordination."

The reason for this suggested guideline is obvious if you live where I do and can see and hear the mistakes that have been made in recent years.

The guest spotlight

The not-so-amazing adventures of jammer Dave (and how he got caught)
By Jim Baremore, K5QQ (via e-mail)

Late in the week of November 20 1995, Dave, a "new ham," came up on the Albuquerque 147.15 repeater using a call that immediately aroused suspicions. He used the call letters of a local broadcast radio station and said the call was a "7." That was so bogus, the Albuquerque T-hunters immediately jumped to the task. Ed used the QRZ CD ROM to determine the actual ham licensed to the call and made a long distance call to Utah to verify his location. Jay and several home-based stations reported in bearings which were enough to get Jim, one of the local T-hunters, deployed to a good vantage point with his 4-element beam. Brian then got on the air and talked to "Dave" and within 15 minutes Jim had located the apartment complex. As he was driving in front of the complex, "Jammer" Dave had decided to take a walk and walked right past the beam-equipped huntmobile. At that point the transmissions stopped.

The next day Brian set up a 'schedule' for 9 p.m. and that night 4 teams were in position and ready for action. Jim had switched to a Doppler Direction Finder and Jerry also had a Doppler. Tom was using a beam and Don was prepared to use a quad but rode with Jim for the mission. The task was to find the actual apartment and as Brian talked, the hunters were able to determine the apartment, as well as what room in the apartment Dave was in. Ed, at his home station, was able to give information about addresses and phone numbers which were being obtained by Brian. About that time a drug bust was taking place in an adjacent apartment, and with all of the action, the hunters wisely called off the hunt.

The third day the team listened for "Dave" and about noon there appeared to be a new problem — on one of the major linked repeater systems in New Mexico, someone was bringing up the phone patch and making 911 calls as well as all kinds of other calls. This caused a great deal of uncertainty as previously all the bootlegger was doing was operating without a license. Now he was committing a rather serious offense in calling the 911 system. Using Doppler DF units was just the ticket to get bearings on the short signals the stations were using while sending tones. Again the search quickly took the team back to the apartment and Jim and Tom were able to visually verify "Dave" making unauthorized transmissions as he walked outside the apartments. A hunter, also named Dave, and another Jim, one of the trustees of the affected repeater, joined in the tedious task of providing positive identification. The whole team watched him as he returned home to his apartment and then the ARRL Section Manager called the Albuquerque Police Department and the NM State Police — Department of Public Safety. They arrived and after reviewing the data collected by the team and looking at the sophisticated DF equipment, promptly took action. Amazingly, in just three days the problem was detected, the station DFed and put off the air!

Congratulations to the Albuquerque hams for policing their activities and for the strong support they got from the New Mexico Department of Public Safety and the Albuquerque Police Department. It was an outstanding team effort.

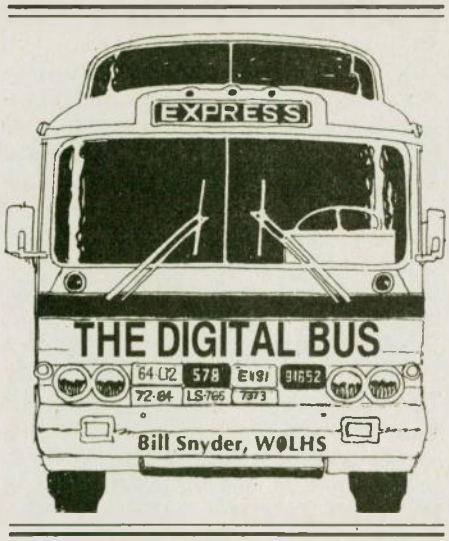
(Note: The names and call signs of the members of the Albuquerque T-Hunt Team have been deleted by request to protect their anonymity. As explained to ***Worldradio***, they are currently busy on several other cases and must remain out of the public eye. de WA6ITF)

Goodies!

N4JED says via America Online that he finished updating the North Carolina 2 Meter repeater map with several new additions in the western part of the state using information provided by WD4CNZ. Copies are available free for an SASE to N4JED, P.O. Box 647, Vinton, VA 24179.

Change in e-mail address

Please note change in the column head for the e-mail address. **WR**



One of the best things about the packet network around the world is the interesting people that I have become acquainted with through the medium. Two such guys are Jim Romelfanger, K9ZZ, of Baraboo, Wisconsin, and Maury Mead, W9FBC, of Neenah, Wisconsin. Both of these guys are connected with the annual circus train that hauls the colorful circus wagons from Baraboo to Milwaukee for the annual parade held in July of each year. Jim and Maury operated an HF station from the circus train during its two-day trip to the brewery city last year. You can see pictures of the loaded train and operator Maury in the January, 1996 *QST* magazine. Jim provided a short story of the train trip for the ARRL publication.

Wisconsin and circus events go way back in the nation's history; Ringling Brothers had their winter quarters during the last century in the little town of Baraboo. They built a great movie and vaudeville theater there, too. It's aptly called the "Ringling" and it is a work of historical art.

I must profess I am a circus fan of long standing. I belong to the Circus Historical Society, the Circus Fans of America, and the great Circus World Museum in Baraboo which is owned and operated by the Wisconsin Historical Society. When I was a kid in the 1930s, I used to work my way into every circus. I usually carried seat jacks for a free ticket to the afternoon performance. The Fargo circus grounds were only four blocks from my house and the noon circus parade went by my house going downtown and a block away coming back. Hard for a kid not to become a circus fan.

Maury loaned me a video tape of a unique circus called "Circus of the Kids." Maury shot the video and it really is fun to watch. The Wilson middle school of Appleton, Wisconsin, has for the past couple of years put on a homespun circus that is really something to behold. The kids, ages ranging from 9 to 14 years, and having only two weeks to practice, really put on a great show. A hundred students took part in the show which featured acrobatics; tumbling; cigar box juggling (like WC Fields did when he was in vaudeville); fire eating (with real blazing torches); roller skate gymnastics; trick bicycling; single, double and triple trapeze tricks; and, get this, a real flying trapeze act with genuine circus rigging and tricks.

The flying trapeze act really topped the show just like such acts usually do in a professional circus. Of course the kids were wearing safety equipment (called a "mechanic" in circus jargon), but they attempted many of the tricks the professional flyers do in the big time. When they missed and fell into the net, they climbed back up and tried again. The kids didn't make all the tricks on the first try, but it was fun to see how they are taught to do the flying act stuff.

One act I didn't list above was a group of kids balancing on big globes and doing tricks like skipping rope, jumping through fire rings, etc. I was really impressed with the skill the kids had built up in such a short time. And they exuded "Button-popping Pride," in the smiles they showed as they took their bows at the end of each act. I think more schools around our country should copy the Appleton school's circus idea. I'm sure it does good things for the kids.

Looking backwards

I usually make a hard copy of all the personal messages that I receive from both around the USA and the world on packet. I then put my answer on paper, too. That way I can look backwards in time and see what happened on the packet waves. It has become a great big pile of printer paper over the years.

I usually print out the message header, too. I do that with the "PR filenumber H" command. Then when I browse through the pile of messages later I can see how fast or slow the message made the trip to me. For example: While surfing through a huge pile of messages this morning, I found one from KD1DS in South Carolina that was sent on July 6, 1995 and I received it on August 22, of the same year. The routing went from SC to DE to IL to IN to OR to NV to TN (3 stations) to MN (6 stations) and ND to me. Great trip around the USA, but a slow one.

Another message in the stack from K5KKO in New Mexico reminded me of getting ten test messages from Maria, ZS1AFZ in South Africa. I remember receiving them and writing about them because they came through in sequence and almost one a day. I was really impressed with the speed of that group of messages coming through a SATGATE in Canada, just a few hundred miles north of my QTH.

For a number of years now I have been in packet contact with Bob Lawrence, W7VFR, a high school radio club friend from the 1930s. For a while we were out of contact due to various health problems. Bob had his heart bypassed, and I had my knees replaced, so there were gaps in the packet messages delivery system. Bob lives in Pasco, Washington and recently the messages have been flying back and forth in hours, not days. It is quite fun to get a message from that far away in five hours. Now that's the way it should work.

Another long-time packet swapper is N5NPR, Chip Purchase, in Houston, Texas. He started with me over 350 messages ago, and for a long time I kept a record of the sequence in which the messages arrived. There were missing numbers, and the sequence of arrival from the south was sometimes pretty bad: two or three would arrive in sequence, but at other times they would be all mixed up.

I enjoy the messages from Chip, because I once worked as a theatrical stage hand while I was going to college, and I have been trying to keep

up with the technology of the theater lighting, staging and audio methods ever since. Chip, a stage hand in Houston, is busy all of the time with touring road companies and local theater presentations. He keeps me informed about the things of interest in his profession. That is lots of fun for me. Things in that business have really changed since I worked lighting on every kind of show from the touring Major Bowes "Amateur Hour" vaudeville groups to the big stage presentations of "The Ballet Russe de Monte Carlo," with ice show spotlight operation tossed in for good measure. Back in my day we had carbon arc spotlights and variable resistor light dimmers. Now technology has put the solid state stuff and computers into the stage lighting business, and wireless mikes into the audio department. .

Packet travel time

One thing I keep noticing and that is the time on the relay of messages. Some people run their message clocks on local time and they still use the "Z" designator for time zone. The "Z" is the Universal Coordinated Time designator for the UTC Reference Zone which runs through Greenwich, England. The letter designator advances every 15 degrees of longitude, so if you wish to use local time, make sure you put the right letter after the time. Here are the letters for the USA: Pacific time = U, Mountain time = T, Central time = S, Eastern time = R. The designators are shown on a map available from WWV in Boulder, Colorado 80303. The designation letters assignment is sort of tricky, so it is best to refer to a chart of the time zones to get the proper letter for other places in the world.

One of the most useful programs in my computer is the AMSAT "IT" program for satellite tracking. It has a program that automatically sets the computer clock by hitting only one key. It takes about 30 seconds to dial the phone, copy two seconds of the digital time signal, compute how far your clock was off, and hang up. From my home it costs about 14 cents to set the clock over the phone.

License plates

I recently received this packet message from Steve James, KA9NPT, from Marengo, Illinois. Instead of by packet, it arrived by US Mail. Here's some of it:

"...I look forward to seeing your remembrances each month. In a past issue you mentioned a young man who would like to receive (ham call) license plates from different states. A post office box was given as the address for them to be delivered.

"Having collected ham plates from associates (and trading them at hamfests and such), I have 30 or so duplicates and extras. I sent one to the address, wondering what response might show up back here. Pleasantly surprised by today's mail there was a thank you note, written in pencil, longhand, from Michael Spenn in San Antonio, TX. He now has 35 plates, missing those from the northeast and northwest.

"I wasn't looking for remuneration or glory, just maybe the chance to put a smile on someone's face who received something from an unexpected source."

About the same time, I received the following note from Michael Spenn, the young license plate collector: "Thank you very much for putting my request in your column. I was able to expand my license plate collection with your help. I now have 35 states in my collection. I'm still looking for those 15 states I don't have." His address is Box 33216, San Antonio, Texas 78265." Michael didn't list the states he is missing, but you might correspond with him to find out.

EAVESDROPPINGS

HAIR FOR SOME MEN COMES IN THREE DISTINCT STAGES; PARTED, UNPARTED AND DEPARTED . . . BEST CURE FOR TVI IS TO JUST TURN THE TV SET OFF . . . WINTER IS NOT THE BEST TIME OF YEAR TO DO ANTENNA WORK IN OUR AREA, BUT THAT'S WHEN MOST THINGS GO WRONG WITH MY SKYWIRES AND THE FURNACE THAT HEATS THE SHACK.

Thanks to W5VPF, K5OVC, WØML, WØSPA and K9ZZ. Write me: 1514 12th ST S, Fargo, ND 58103-4134. WR

Sound on TAPR home page

Tucson Amateur Packet Radio has added an audio virtual meeting, workshop, and seminar page to its Home Page on the Internet. This, according to TAPR President Greg Jones, WD5IVD, who gives the address as http://www.tapr.org.

Jones says that TAPR is evaluating a Real Audio system to present packet radio meetings and presentations. The system only allows six concurrent connections, so if you find that an audio channel is busy, try later. WR

Search And Rescue Communications

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

UNCLE!

I cannot believe the comments I've received concerning my comments about superfluous phrases on the radio. "BE ADVISED." A reader wrote that public safety dispatchers are taught this phrase (I'm not so sure). Another reader wrote to say it is impolite to correct people on the air. Others wrote to say "BRAVO" and "RIGHT ON!" Let's revisit the issue.

Amateur Radio is a communications medium for many purposes. If you mix the purposes, you'll misunderstand my advocating brevity. When we are having a roundtable, drive-to-work visit, there is no expectancy of brevity or precise language. You're there to enjoy a leisurely chat — both social and to pass the time. When you are communicating in support of an emergency situation, expectations are different.

Consider the police officer. His or her duty is not to provide conversation for the dispatcher, the duty is on the streets. For many officers, the radio is a distraction. It is a needed link, a safety net, a valuable resource — but only that! For typical public safety situations, speed and efficiency are of the essence. There is little time in a life-saving role and the effort should not be harmed by the communications system.

Think about the 10-codes or the Q-signals. Their purpose was to reduce air time. If you look at early dispatching materials, 10-20 translated to "What is your location?" Note that the translation is a complete sentence for which nothing else is required. If a dispatcher said: "Pat 57, 10-20." The translation was: "Highway patrol unit 57, what is your location?" The officer would simply respond: "57, eastbound at Alcova." The dispatcher knew where the officer was, the officer was not distracted from driving in a snowstorm, and information was passed.

Is there something wrong with saying "What is your 10-20?" No. It simply translates to: **"What is your what is your location?"** I sincerely believe that a lack of understanding and resulting misuse of such codes prompted many agencies to abandon them in favor of clear text. In other words, they now simply ask: "What is your location?" No codes are used at all.

The issue here is training BEFORE you need to communicate in a public service role. We do not need on-the-air correction of extra phrases! I'm not saying you should send nastygrams to everyone who says something you feel is unneeded. Fit your training to match accepted practices. If the police chief says you must use "be advised," then do it. I am encouraging you to consider what you say and improve in favor of clarity, brevity, and understanding. Clear text is my urging for you, as a volunteer communicator, in the public service role. My advice is also that you tape record your public service efforts and look for ways by which you can make what you say on the air crisp and clear. For example, the phrase "Call me on the telephone at 555-1212" could be shortened to "Call me at 555-1212." If I give my call sign during an event, it is for identification and adding "for ID" or "I better do the required ID here" or any other phrase is not needed.

Some years ago when I was a public safety dispatcher, several officers commented on how fewer, but clear, communications were preferred. When I would dispatch an officer to an accident scene, the words "be advised" were not used and they appreciated it. My job was to advise them, that is why I sat in a small room with a radio station for eight hours at a time.

I simply believe that a public safety communicator should make the best use of the language and not be so creative or so redundant as to impede the message. From the officer's perspective, they like it when you call once in a while to see if they're OK. They also like you to be attentive and quick to respond if they call for help. If you're on the air giving a lengthy, and unnecessary, comment, no one else can call with something such as "officer down, needs help." Believe me, when an officer is injured or requests back-up, he or she is not going to preface it with "be advised" and they're usually not able to respond to a "say again" request. When you have an urgent message to deliver, you need to do it now, not after a long dispatch.

Keep it short. Keep it precise. Keep it clear.

The "Other" frequency

I have a bone to pick with frequency managers and publishers of Amateur Radio frequency guides. They forget to include the "other" frequency. In the past week I've heard a number of people move to the "other" channel.

Back in the days when we had to buy a pair of crystals for each operating frequency, the "other" frequency had some measure of security. With today's equipment, it's interesting to observe the attempt toward secrecy. It's also humorous. I'm reminded of the time two people went to their "other" channel and it happened to be a control link input to a wide-area network. By the time someone found the frequency and told them, they had made a number of embarrassing comments about club officers and a number of other "friends."

If the "other" frequency is secret, you might consider that it takes only a few seconds for someone interested to do a band scan. If you have an "other" frequency it is also good to check the published band plan to ensure you're not interfering with something else such as low-power experimental work or repeater control frequencies. Remember, if it has an antenna, you should never consider what is sent as secret.

Good stuff department

Debbie Banta, N7ONU, sent me a copy of an Army pocket training card dated 1981 that concerned transmitting and receiving radio messages. The card listed three general instructions: a) Write or plan message before transmitting, b) Listen before transmitting, and c) Speak clearly and slowly.

The card also listed the standard phonetics and procedure words. This card serves as a reminder that we must

first master the basics before we can move on to more complex tasks! I believe that if we could get most of our operators firmly educated with these three general instructions and then master the phonetic alphabet, we'd make giant leaps toward effective communications.

Another reader sent me copies of pages from the American Society for Testing and Materials (ASTM) entitled "Standard Practice for Communications Procedures — Phonetics." First, I had no idea ASTM was concerned about communications! Second, I was surprised that a footnote for the chapter mentioned that these practices were under the ASTM's Committee F-32 on search and rescue.

This ASTM standard is dated April 1995, and goes to show that what was good for the Army in 1981 remains good today. The ASTM cited government publications, ARRL publications, Associated Public Safety Communications publications, Civil Air Patrol publications, International Civil Aviation publications and International Telecommunications Union publications. I read from this list that we're all in this together! Standard phonetics, standard practices, and standard procedures help members from various agencies share information which is the purpose for which we communicate.

Be safe!

An article in the September, 1995, issue of *Fire Engineering* is worth mentioning. Ray McCormack (a 13-year veteran of the fire service) wrote a short article about supplying electricity to remote equipment. How many radio events (or communications rooms) have you attended where electrical power cords were unsafe?

Storage, marking, using, and maintaining power cords is of interest when we deploy in the field. Whether you are operating on 12 volts, connected to a generator, or patched into a building's circuit, keep safety first! A dead operator is of no use to the communications effort. Watch for water hazards, overloading, frayed ends, and other problems whenever you stretch that cord.

Until next month, be safe and think before you act! If you have comments write or e-mail to radar@desnews. com Best wishes from Salt Lake City — home of the 2002 Winter Olympics. WR

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YLs on the Air

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

Activities

10-12 Feb	YLRL YL-OM SSB Contest
15 and 17 Feb	BYLARA Contest
17-18 Feb	GOTA (CLARA)
24 Feb	YLRL YL-OM CW Contest
8 Mar	International Women's Day Contest
12-13 Mar	CLARA & Family HF Contest

Contest News

Lia Zwack, WA2NFY, placed first in YLRL's Howdy Days Contest held in September. Lia also was the North American winner in the CW portion of the YL Anniversary Party in October, and Rosel Dach, DL2FCA, was the DX YL winner. In the SSB portion, Irma Weber, K6KCI, placed first, and Greta Hubacher, HB9ARC, was the DX YL winner.

Lia also had the highest combined CW and SSB score from North America and won the Corcoran Award; Rosel had the highest combined CW and SSB score from outside North America and won the Hager Award. Congratulations to all!

Mark your calendar now for the YL-OM Contest. This is the only YLRL contest where YLs aren't looking for other YLs but are calling, "CQ OM."

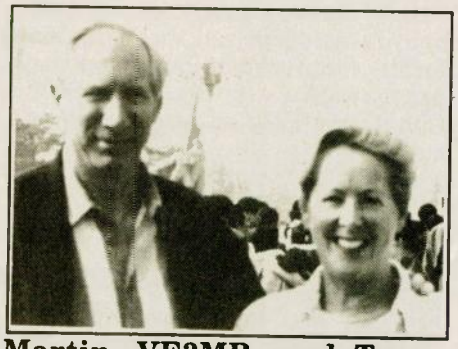
The SSB and CW portions are scored as separate contests so be sure to participate on both weekends.

Please note that YLRL has a new vice president this year so send your logs, which must be postmarked NLT 30 days after each contest ends, to Carol Hugentober, K8DHK, 4441 Andreas Ave, Cincinnati, OH 45211. Carla Watson, WO6X, who served in this position for the past four years, sends her thanks to all of you who have participated in YLRL's contests and who have helped publicize the activities. She has really appreciated the notes and letters that have often accompanied the logs. We also thank Carla for the fine job she has done for YLRL.

The British Young Ladies Amateur Radio Association (BYLARA) also invites all YLs, OMs, and SWLs to participate in the 13th BYLARA Contest in February. YLs work both YLs and OMs; OMs work only YLs, and the scoring and rules are the same as in past years. Logs go to Ella Tugwell, GØFIP, 67 Upper Kingston Lane, Shoreham-By Sea, Sussex BN43 6TG, England, and must be received by April 4, 1996.

Two avid CW ops: Marvel "Hutch" Frederick, WW2A (left) and Lia Zwack, WA2NFY.

Two major events are being sponsored by the Canadian Ladies' Amateur Radio Association (CLARA). The first is Guides on the Air (GOTA), which is co-sponsored by the Girl Guides of Canada. 1996 will mark the 85th year of Guiding in Canada, the United Kingdom, New Zealand, and Australia, and each Canadian call area will have at least one special GGC prefix on the air. There will be stations on around the world so that the local Guides can find out what their counterparts in other countries are doing. It's a big thrill for the Guides to share their experiences and make new friends through Amateur Radio. The CLARA Liaison for GOTA is Marilyn Ellison, VE3YOY, 28 Seaton Dr, Aurora, Ontario L4G 2X1. You can write Marilyn for more information.



Martin, VE3MR, and Truus Rosenthal, VE3MRS, on Tiananmen Square.

The CLARA & Family HF Contest is open to all licensed amateurs, and most of the activity is on 20, 40, and 80 Meters. Each station can be contacted twice per band, once in each mode, and the multipliers are one for each Canadian province or territory and one for each ARRL DX country contacted. Please contact me if you need complete rules for any of these contests.

DX Convention

I was delighted to receive a report on the Beijing International DX Convention from Truus Rosenthal, VE3MRS. Truus and her OM Martin, VE3MR, attended the Friday evening DX dinner at Dayton this year, where Chen Ping, BZ1HAM, was the guest speaker. He presented a slide review of the BS7H Scarborough Reef operation, and after his talk he invited everyone in the audience to attend the forthcoming DX convention, sponsored by the Chinese Radio Sports Association (CRSA), held 13-16 October 1995, in Beijing.

Truus and Martin attended with their friends Tom Wong, VE7BC, and

his wife Alice, VE7AW, arriving in Beijing on 10 October. The next day they were taken to visit the famous BY1PK QTH, and there was some reminiscing of the good old start-up days of many years ago by Tom. They went up to the roof and viewed the current antenna farm, covering all frequencies between 3.5 to 144 MHz.

There were more than 100 participants from at least 16 countries, with many Chinese amateurs in attendance from all over the country. The symposium began at 10 a.m. on Friday morning at the Beijing International Con-vention Center. Liaison officer and acting Secretary General of the CRSA Mr. Chen Ping, now BA1HAM, made the opening remarks and welcomed the assembly. He was followed by the minister of the All China Sport Association, and then, following a Chinese tradition, master of ceremonies Martti Laine, OH2BH, asked audience members if they would like to say a few words, and the response from the floor was very good.

Bill Kennamer, K5FUV, then gave a short talk on the history of theARRL DXCC program and the qualifications needed to apply for the various awards. Next Phil Weaver, VS6CT, spoke on the status of Hong Kong now and the changes that will take place when it reverts to China on 1 July 1997. He was followed by Tom Wong, VE7BC, who gave a slide presentation that chronicled his 12-year effort to finally get China back on the air. Nam Gyu Lee, HL1DK, gave an insight into Amateur Radio in Korea and the great influx since a new licensing system came into effect in 1990.

The next speaker, called upon with much anticipation, was the representative from the Democratic Peoples' Republic of Korea (North Korea), and he passed greetings to the assembly on behalf of the state commission for physical culture and sports, under which their Amateur Radio association functions.

After a delightful meal featuring local cuisine, the meeting was reconvened and broken up into two rooms. Dick Ehrhorn, W4ETO, gave a talk to the Chinese audience on linear amplifier design and construction, and for the English-speaking audience, there was an interesting lecture on modern China. After the sessions, there was an opportunity to intermix with all the amateurs in attendance. The majority of the BY amateurs were very young and very enthusiastic.

Evening festivities included a cocktail party, followed by a CRSA reception and the DX banquet. Each foreign attendee received a beautiful gift, local amateurs received door prizes. The grand prize was a Kenwood TS-850 transceiver and matching power supply, personally donated by Kan, JA1BK.

A special events station was located on the hotel's 21st floor, and all attendees were issued a temporary license (the first time ever) to operate from the hotel, the Great Wall, and for the use of 2 Meter handhelds. The convention was supported by Yaesu, Cushcraft, ETO, and CQ Ham Radio of Japan.

Through their efforts, BT1DX was the call used from the hotel and then BT1X was used on Sunday from the Great Wall, where a Yaesu transceiver and an R-7 vertical antenna were installed. This was a trip that will be long remembered. WR

Computers & Basic Stuff

C.H. Stewart, KD5DL
P.O. Box 181
Duncan, OK 73435

BASIC Coax

Several years ago I watched as an amateur wrestled with a short length of RG-8 coax, trying to get it connected to the back of his VHF mobile rig. He said that he decided to use the thick coax to keep attenuation and SWR low.

In reality, the loss to attenuation in the ten-or-so foot section of coax would not be that noticeable (he wouldn't be able to tell any difference at all just by listening). Also, by using the low-loss line his SWR would be more in agreement with the SWR at the load, which turned out to be about 1.4:1. If he wanted to lower his SWR he could have done it with lots of thinner, lossy coax. His SWR would go down, but so would the power available to the antenna.

Just the other day I was talking with another amateur and discovered that it was his understanding that only half the power put into the coax makes it to the antenna. Apparently this was something he had "learned" a long time ago, maybe when he was in the Navy, and it stuck with him as being fact.

Another amateur recently wrote me, with the "proof" of Thevenin's theorem, saying that coax added significant resistance to an antenna system. He pointed out that coax impedance is in series with antenna impedance, and that power must therefore be shared between the two according to the basic theorem.

Unfortunately, all of these men share misconceptions that are common in our hobby, and doubly unfortunate is that these and other misconceptions are being shared with newer amateurs who often take these myths as truth.

Walter Maxwell, W2DU, has done more to clear up antenna and transmission line misconceptions, I believe, than anyone else. Maxwell had written a series of articles on SWR, transmission lines and antennas for *QST* between April 1973 and August 1976, and updated these original articles and included them along with new material and assorted BASIC programs in the 1990 publication of *Reflections: Transmission Lines and Antennas.* Most of the material I've been using in the BASICAntennas series is based on this book.

Here, in a nutshell, is the basic theory of transmission lines:

If power in a line is delivered to a matched load (antenna), then all the power available at the load is accepted by the load, and there are no reflections on the line (the SWR is 1:1). Power lost to line attenuation is lost only on its one-way trip to the load.

If, however, the load does *not* match the line, then some power will be reflected. This reflected power establishes measurable standing waves along the line. Line attenuation not only reduces the power enroute to the load, but also reduces, by the same degree, the power reflected by the load.

According to Maxwell, the reflected power, when it reaches its source, is "rereflected" and travels again toward the load. In a "lossless" line all power destined for the load will (eventually) be consumed by the load, no matter what the SWR is. However, since transmission lines are not "lossless," we can say that all power destined for the load will be consumed by the load *except* for the power lost to forward and reflected attenuation.

Different lines attenuate signals by different degrees, and well-aged lines tend to attenuate signals more than newer lines.

If the load SWR is relatively low, then very little power is reflected, and reflection attenuation losses are relatively insignificant. If, however, the

```
10:CLS: PRINT "COAXLOSS.BAS, BY K6WX, 7/84, EDITED 2/96":
PRINT
200 INPUT "CABLE IMPEDANCE (OHMS) ";ZØ
210 INPUT "ATTENUATION (PER 100-FT) ";X
220 INPUT "CABLE LENGTH (FT) ";L: INPUT "INPUT POWER ";PI
230 INPUT "SWR (AT INPUT) ";SI: IF SI=1;SI=1.001
240 IF SI>867/L*X^-1 THEN PRINT " **SHORTEN LENGTH OR LOWER
SWR**": GOTO 220
250 A=L*X/100: T=10^(A/10): G=EXP(-.46*A)
260 Q=(SI+1)/(SI-1): SO=(T+Q)*(1/(Q-T))
270 ZR=ZØ*SO: J=((ZR/ZØ-1)/(ZR/ZØ+1))^2
280 PF=PI/(1-(J*G)): PL=(1-J)*SQR(G)*PI/(1-(J*G)) 290 PR=PF-PI: K=SQR(PF/
PR)
300 PM=PI/10^(A/10): LA=4.343*LOG(PM/PL): LT=LA+A
310 PRINT:PRINT "SWR AT OUTPUT ";SO;":1"
320 PRINT "LOAD RESISTANCE ";ZR; "OHMS"
330 PRINT "POWER ABSORBED BY LOAD "; PL; "WATTS"
340 PRINT "  (POWER AVAILABLE FOR MATCHED LOAD ";PM;"WATTS)"
350 PRINT "FORWARD POWER "; PF; "WATTS"
360 PRINT "REVERSE POWER "; PR; "WATTS"
370 PRINT "ADDITIONAL POWER LOSS (FROM SWR) "; LA; "dB"
380 PRINT "  (";PM-PL;"WATTS)"
390 PRINT "TOTAL POWER LOST IN LINE "; LT; "dB"
400 PRINT "  (";PI-PL;"WATTS)": PRINT
410 INPUT "START (A)NOTHER, NEW (S)WR, OR (Q)UIT"; A$
420 IF A$="A" OR A$="a" THEN 200
430 IF A$="S" OR A$="s" THEN 230 ELSE END
```

Figure 1.

load SWR is high, then reflected power will also be high, and reflection attenuation losses start to add up. Power lost in reflection attenuation is not available for rereflection.

If the attenuation is large, as in "lossy" cables, a high SWR will cause losses to be proportionately larger. Generally, though, the losses will be nowhere near half the total input power, as some argue, *unless* the line is very long, or is very lossy, or the SWR at the load is very high.

While researching information for this column I came across a few pages in the July, 1984, issue of *QEX* that referenced Maxwell and his work. I. L. McNally, K6WX, presented several computer programs dealing with coax attenuation and losses based on Maxwell's *QST* articles.

McNally is no stranger to antennas and transmission lines. He says that in 1933, while he was a radio technician serving aboard the USS *Pennsylvania*, he received a gift of 50 feet of coaxial cable from a friend. He used it to construct the first coax-fed antenna in the fleet. The results were excellent, he reports, and he soon became one of the first to use coax in amateur operations. McNally's *QEX* article set out to show that, with low attenuation, any losses due to high SWR were very small; but with lossy cable the increase in attenuation and SWR could result in significant power losses, even to matched loads.

To illustrate, load and run COAX LOSS.BAS (originally written for a TRS-80, but presented in generic BASIC) in Figure 1.

Now try this example: Assume a 50-ohm coax impedance with .85 dB loss per 100' section (you can find attenuation values in the *ARRL Antenna Handbook* or, or send me an SASE for the first part of this program). Use 100 watts into a 120' section with an input SWR of 1.5:1.

Your answers should show a load SWR of 1.677187:1, a load resistance of 83.85936 ohms, and a power absorption of 77.11465 watts (proving that half the power is *not* lost in the coax). Forward power at the input is 104.169 watts (which is the original 100 watts plus the rereflected 4.169 reflected watts).

Finally, the added loss due to reflections should be .108632 dB, which, when added to the initial 1.02 dB (.85 dB*120'/100') cable loss, gives a total loss of 1.128632 dB. In other words, 22.88535 watts of power is lost in this length of coax, but only 1.9532 watts of it is lost due to the SWR.

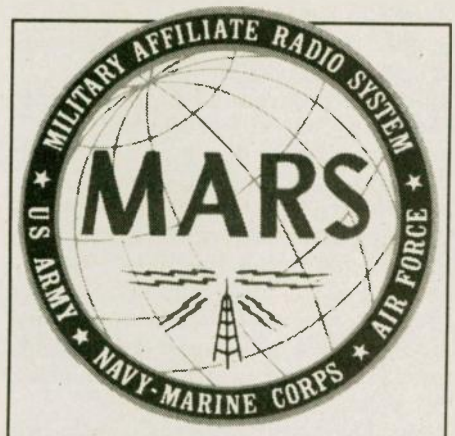
Try the program with other inputs to discover for yourself how line attenuation and SWR affect load and power. Be aware though, and McNally will concur with this, unrealistic combinations of attenuation, SWR and line length will result in unrealistic answers. For the most part, though, the program will give representative results, at least to within a few percent, for normal line lengths, attenuation values and SWR.

Until next time, keep radio active. WR

ARRL election results

The 1995 fall ARRL elections are over and the winners all appear to be incumbents. There were only four contested races, with only one that can be called a squeaker. That was in the Midwest Division where Director Lew Gordon, K4VX triumphed over challenger Roger Volk, KØGOB by only 51 votes.

In all other contests, the incumbents won by wide margins. Those re-elected began their next two year terms of office beginning at noon on 1 January 1996. WR



Lorraine S. Matthew, N4ZCF
MARS call AAA9PR

The month of February brings a mixture of thoughts unlike any other month of the year. Hints of spring mixed with onslaughts of winter are characteristics of the month. Historical holidays and a day devoted to the emotions of the heart occur in this month. February, 1996 is no different.

In keeping with the historical nature of the month, it is appropriate to review the history of the MARS organizations themselves. I receive many inquiries about how Army MARS started from readers of this column.

Actually 28 November 1925, is considered to be the birthday of Army MARS. In this very early age of radio communications, Army Signal Corps Captain Tom C. Rives recognized the future of radio and its potential use within the Army. He enlisted the help of Amateur Radio operators and, on that historic November date, with them formed the Army Amateur Radio System (AARS). His initial intention was to enlist the talents of volunteer Amateur Radio operators as a source to train soldiers in the relatively new technology of radio as well as to pursue radio research and development to improve radio equipment within the Army. Captain Rives' efforts were very successful.

Operating procedures and technologies developed between 1925 and 1941 through the AARS proved to be very effective. During this period, thousands of Army radio operators gained much needed experience and knowledge and were ready when needed as World War II opened. Additional thousands of the AARS volunteers joined the services and comprised a large percentage of the radio operators who served so well during that worldwide conflict.

The fine service of the Army Amateur Radio System members did not go unnoticed. The system was reactivated in 1946.

Two years later, when the Air Force separated from the Army, the Office of the Secretary of Defense announced the implementation of the Military Amateur Radio System (MARS) as a joint project of the Army and the Air Force. This name was later modified to the present Military Affiliate Radio System.

Coincidentally, the original MARS announcement was made on 28 November 1948. The scope of MARS was also broadened to encompass every Amateur activity and interest. Encouragement was given, as it is currently, to furthering operating and technical proficiency. Technological development and service opportunities were both given top priority as they traditionally had been in the original AARS. The respective Army and Air Force MARS Chiefs were first designated at this time.

In 1962, the Navy-Marine Corps MARS program was established. That completed the establishment of the three services MARS programs that we have in service today.

On 7 December 1941, all Amateur Radio operations ceased. The Army Amateur Radio System was included in this ban. Modern day MARS, unlike AARS, is now authorized to operate in times of war.

All of the MARS services have two major operating missions — emergency support and military support. The military support includes the morale function of the MARSgram and phone patch programs. February and valentines go together and this is a fine opportunity for loved ones to generate those very precious MARSgrams.

To give some idea of the value of MARSgrams to the deployed military personnel, I include here a statement sent here by Andy Lamb, Eighth Army MARS Director Korea. He is in Korea and gets to meet the thousands of soldiers deployed to that location. The value of his role in generating support for the MARS program from the commanding officers in that country is incalculable. This statement was sent in reference to Thanksgiving, but what it says is applicable all the year round.

"On this Thanksgiving Day, I would like to thank all the MARS operators of all the services for the great service you are providing for the soldiers, sailors, and airmen serving in the Republic of Korea.

"These soldiers, many of them serving within a few miles of the North Korean border, live and train under hardship conditions. One of the greatest hardships is being separated from the friends and family they love.

"Your willingness to accept ever increasing amounts of traffic from Korea, with an ever decreasing amount of resources at your disposal, speaks volumes about your professionalism and devotion to duty. Your work is having a positive impact on the morale and lives of the soldiers, sailors, and airmen stationed so far away from the ones they love.

"As I sit down before the bountiful harvest I will enjoy this Thanksgiving Day, I will give thanks to those people who give of their time, equipment, and resources without expecting reward, recognition, or compensation for their work. You are patriots in the truest sense and I salute you. Have a great Thanksgiving and holiday season."

I, too, have a mixture of thoughts in writing this column. In today's mail came my official separation from activity in Florida Army MARS. This ended the most intense and fascinating period of service that I have ever enjoyed. Be assured that I am NOT leaving Army MARS. By the time you read this column, my husband and I will have simply changed our state of residence. We will have left Florida and will have taken up residence in Arizona.

Throughout its 70 year history, Army MARS has marched forward. Its members continued to serve during the period of interruption — thus maintaining the continuity of a full 70 years of operation. Army MARS still marches forward proud, professional, and ready. WR

New UK beacon

A new beacon operating in the 24 GHz band is on the air from the Isle of Wright. The GB3IOW has been built and tested and was scheduled for installation on the mast about now. The frequency of operation is 24.025 MHz.

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. 2/96

ARIZONA

Arizona Repeater Association. P.O. Box 35758, Phoenix, AZ 85069-5758. Operates 20 VHF & UHF rptrs. in AZ. Meets 4th Thurs./monthly, 7:30 p.m., 1515 E. Osborne, Phoenix. Info: (602) 631-4879. 9/96

Cochise Amateur Radio Assn., (CARA). Meets 1st Mon./monthly, 7:30 p.m. at club facility on Moson Rd., Sierra Vista, AZ. WA7KYT/R 146.76(-) rptr. 5/96

Tucson Repeater Assoc., P.O. Box 40371, Tucson, AZ 85717-0371. Meets 2nd Sat./monthly, 7:15 p.m., Dept. of Emergency Mgmt., 130 W. Congress. Net Thurs. 7:30 p.m. 146.82(-), 146.88(-), 147.08(+), 448.550(-) & 145.15 Packet. 3/96

CALIFORNIA

Amador County Amateur Radio Club. P.O. Box 1094, Pine Grove, CA 95665. Meets 1st Thurs./monthly, 7:30 p.m., Jackson Sr. Cntr., 229 New York Ranch Rd., Jackson, CA. Info: call 146.835(-). 5/96

Amateur Radio Club of Anderson, (ARCA). Meets 2nd Thurs./monthly, 7:30 p.m. Amer. Legion Post #746, 1709 Bruce Dr., Anderson, CA. Net every Tue., 7:30 p.m. on 146.64. 4/96

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

Downey Amateur Radio Club Inc., W6TOI. Meets 1st Thurs./monthly, 7:30 p.m., So. Middle Sch. cafetorium, 12500 S. Birchdale, Downey, CA. (Summer exception: contact Doug, N6WZI, (310) 929-1441). VHF net W6GNS rptr. 146.175(+) Thurs., 7:30 p.m. 5/96

East Bay Amateur Radio Club, Inc. Meets 2nd Fri./monthly, 7:30 p.m., Albany Sr. Cntr., 846 Masonic Ave., Albany, CA. Info: S. Primbsch, (510) 741-8227. 145.110 MHz. 6/96

Fresno Amateur Radio Club. Meets 2nd Fri./monthly, 7:30 p.m., Ernie Pyle School, 4140 N. Augusta, Fresno, CA. 146.94(-) 223.94(-). 11/96

Fullerton Radio Club, Inc., W6ULI. P.O. Box 545, Fullerton, CA 92632. Meets: 3rd Wed./monthly, 7:30 p.m., Sr. Citizens Ctr., 340 W. Commonwealth, Fullerton. Net ea. Tue., 8 p.m. 147.975(-). Info: Bob Hastings, K6PHE (714) 990-9203. 6/96

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. 9/96

Golden Triangle ARC, (GTARC). Meets 4th Mon./monthly, 7:30 p.m., Sharp Health Care Activities Rm., 25500 Med. Ctr. Dr., Murrieta, CA 92562. 6/96

Livermore Amateur Radio Klub, (LARK). Meets 3rd Sat./monthly, 9:30 a.m., City Council Chamber, 3575 Pacific Ave., Livermore, CA. Net Mon. 1900 on 147.12(+). For info: LARK Secretary, P.O. Box 3190, Livermore, CA 94551-3190. (510) 846-6513. 12/96

Marin Amateur Radio Club (MARC). W6SG. Box 151231, San Rafael, CA 94915-1231. Meets 1st Fri./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. 8/96

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. 2/96

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. 6/96

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. 9/96

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

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. Herb Clarkson, KM6DD, (310) 377-6342. Rptr. 145.38(-) PL 100. 11/96

River City A.R.C.S. Meets 1st Tues./monthly, 7 p.m., SMUD Bldg., Don Julio at Elkhorn, Sacramento, CA. License classes offered. For info contact Lyle, AA6DJ, (916) 483-3293. 9/96

Sacramento Amateur Radio Club. Meets 2nd Wed./monthly, 7 p.m. Sac. Blood Ctr., 32nd St. & Stockton Blvd., Sacramento, CA. Info net at noon on rptr. W6AK/R 146.91(-). Steve Cates, KC6TEV, (916) 391-7341 or Les Ballinger, WA6EQQ, (916) 393-4775. 10/96

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. 10/96

San Gabriel Valley Radio Club, Inc. P.O. Box 88, Monrovia, CA 91017-0088. Meets 1st Tue./monthly, 7:00 p.m., Arcadia County Park, 405 So. Santa Anita Ave., Arcadia, CA. 147.765(-) PL 131.8. Info: (818) 285-9280. 12/96

Santa Clara County Amateur Radio Assoc., (SCCARA) W6UW & W6UU. P.O. Box 6, San Jose, CA 95103-0006. (408) 249-6909. Meets 2nd Mon./monthly, 7:30 p.m., United Way, 1922 The Alameda, San Jose. Net all other Mon., 7:30 p.m. W6UU/R 146.385(+), 442.425(+) PL 107.2. 3/96

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. 7/96

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(-). 3/96

Simi Settlers Amateur Radio Club (SSARC). P.O. Box 3035, Simi Valley, CA 93093. Meets 2nd Thurs./monthly (except Dec.), 7:30 p.m., Seventh Day Adventist Church Hospitality Rm., 1636 Sinaloa St., Simi Valley. Contact Ron, KD6VLM, (805) 584-6737, 147.930(-) (PL 127.3). 11/96

Siskiyou County Amateur Radio Assoc. Meets 1st Sat./monthly, 10 a.m., rotates between Bob's Ranch House in Etna, CA and The Tree House in Mt. Shasta. For info: Al, WA6IHK, (916) 467-3255. 10/96

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. 12/96

South Bay ARC. P.O. Box 536, Torrance, CA 90508. Meets 3rd Thurs./monthly, 7:30 p.m., Torrance Memorial Hosp., 3330 Lomita Blvd., Torrance, CA. Talk-in on WB6MYD rpt. 244.38(-). Info: (310) 328-0817. 7/96

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. 3/96

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). 2/96

Tri-County Amateur Radio Assoc. P.O. Box 142, Pomona, CA 91769. Meets: 2nd Mon./monthly, 7:30 p.m., Covenant United Methodist Church, corner of Towne Ave. & San Bernardino Rd. in Pomona, CA. 11/96

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. 10/96

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. 6/96

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. 5/96

Victor Valley Amateur Radio Club. P.O. Box 869, Victorville, CA 92392. Meets 2nd Tues./monthly, 7:00 p.m., Victor Valley Museum, 11873 Apple Valley Rd., Apple Valley, CA. Talk-in 146.94(-), PL 91.5. Net Sun. 7 p.m. 146.94(-). 12/96

West Coast Amateur Radio Club, (WCARC). P.O. Box 2617, Costa Mesa, CA 92628. Meets 3rd Thurs./monthly, 7 p.m., Fountain Valley Sch. Dist. office, 17210 Oak St., Fountain Valley. 145.440(-) PL 136.5. For info: Joe, KA6LPZ, (714) 963-4426. 9/96

Westside Amateur Radio Club. P.O. Box 11092, Marina del Rey, CA 90295. Meets 3rd Thurs./monthly, 7:30 p.m., Red Cross Bldg., 1450 11th St., Santa Monica, CA. Net every Tues., 8 p.m., 146.67(-). Voice mail: (310) 917-1100. 5/96

West Valley Amateur Radio Assoc. P.O. Box 6544, San Jose, CA 95150-6544. Meets: 3rd Wed./monthly, 7:30 p.m. (except Dec.) Cambrian Sch. Dist. Office, 4115 Jackson Dr., San Jose, CA. W6PIY/R. Net Tue., 8:30 p.m. 147.39(+), 223.96(-). 10/96

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. 7/96

Yolo Amateur Radio Society. Meets 1st Tues./monthly, 7:30 p.m., Training Rm. of the Davis PD, 226 F St., Davis, CA. Contact Dave Nishikawa, KC6YFG, (916) 756-6375/Talk-in 144.430. 10/96

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

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. 8/96

Indian River ARC, Inc., (IRARC). 597 Capri Rd., Cocoa Beach, FL 32931-3011. Meets 1st Thurs./monthly, 7:30 p.m., Community Church of the Nazarene, 400 Crockett Blvd., Merritt Island, FL. 3/96

Port St. Lucie ARA. Meets 1st Fri./monthly, 7:30 p.m., St. Andrews Church, Prima Vista Blvd., Port St. Lucie, FL. Contact: Roy Cox, KE4QJG, (407) 340-4319. Call in 146.955(-). 9/96

Saint Petersburg Amateur Radio Club. Meets 1st Fri./monthly, 7:30 p.m., Red Cross Bldg., 818 Fourth St. North, St. Petersburg, FL. Nightly net 6:30 p.m., 147.06(+). Rptrs. 147.06(+), 224.66(-), 444.475(+). Info: C. Wagner, KE4EYI, (813) 894-2393. 1/97

South Brevard Amateur Radio Club. P.O. Box 2205, Melbourne, FL 32902. Meets 1st Tue./monthly, 7 p.m., Public Library, 540 Fee Ave., Melbourne, FL. 6/96

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

GEORGIA

Dalton Amateur Radio Club, Inc., (DARC). Meets 4th Mon./monthly, 7:30 p.m., Magistrate Court Bldg., corner of Waugh St. & Thornton Ave., Dalton, GA. Info: Harold Jones, N4OTC, 706/673-2291. 3/96

HAWAII

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. 7/96

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. 6/96

CHI-NET Amateur Radio Club. North & Northwest Chicagoland & Suburbs. Specializing in PACKET Radio and 220 Phone to further the fulfillment of Amateur Radio. Meets last Thurs./even mos. Info: (708) 307-8198 or Packet on 144.99 MHz or Voice on 224.24 MHz. 11/96

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(-). 11/96

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. 6/96

Hamfesters Radio Club, W9AA. P.O. Box 42792, Evergreen Park, IL 60805. Meets 1st Fri./monthly, 8 p.m., Crestwood Civ. Ctr., 139th & Kostner, Crestwood, IL. Nets: Sun. (local) 0100 UTC, 28.410 MHz; Mon. 9 p.m. 146.43 S., Packet Mailbox 145.65 MHz. Info: (312) 974-3291: 1/97

Peoria Area Amateur Radio Club, (PAARC). Meets 2nd Fri./monthly, 7 p.m., 1401 N. Knoxville Ave. Info: (309) 685-6698. Rptrs: 146.85(-) & 147.075(+). 5/96

The Starved Rock Radio Club, W9MKS. P.O. Box 198, Tabor St., Leonore, IL 61332. Meets 1st Mon./monthly, 7:30 p.m. Rptr. net 7 p.m. Wed./wkly., 147.12(+). 11/96

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(-). 6/96

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(+). 4/96

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(-). 11/96

MAINE

Androscoggin Amateur Radio Club. Meets 1st Wed./monthly, 7:00 p.m., Auburn Police Station, 1 Minot Ave., Auburn, ME. 11/96

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. 1/97

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. 12/96

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. 2/96

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

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. 2/96

Eastern Michigan Amateur Radio Club, (EMARC). Meets 1st Tue./monthly, 8:30 p.m., Woodland Developmental Cntr., Kimball Township (Range @ Smiths Creek Rd.). Contact Frank Forsyth, N8XTO, (810) 987-3540. Talk-in: 147.30(+). 9/96

Genesee County Radio Club, Inc. Meets 3rd Tues./monthly, 7:30 p.m., Genesse Area Skill Center, Torrey Rd., Flint, MI. (810) 634-6077. 2/96

MISSISSIPPI

Jackson Amateur Radio Club, Inc. Meets 3rd Thurs./monthly, 7 p.m., Am. Red Cross Bldg., Riverside Dr., Jackson, MS 39202. 10/96

MISSOURI

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. 2/96

NEVADA

Frontier Amateur Radio Society, (FARS). Meets: 3rd Sat./monthly, bkfst. 8 a.m. & mtg. 8:30 a.m., Rae's restaurant, 2531 Wigwam at Pecos. Club info: Jim Frye, NW7O, (702) 256-5396 or Leona Wallace, WA6OHB, (702) 247-6450. 7/96

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. 5/96

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. 11/96

NEW HAMPSHIRE

Great Bay Radio Assn., WB1CAG. P.O. Box 911, Dover, NH 03820. (603) 755-2600/335-6643. Meets 2nd Sun./monthly, 7 p.m., Rochester Fire Dept. Training Rm. Talk-in: 147.57. 11/96

NEW JERSEY

10-70 Repeater Assn., Inc. 235 Van Emburgh Ave., Ridgewood, NJ 07450. Meets 1st Wed./monthly (except July & Aug.), 8 p.m., VFW, Valley Rd., Clifton, NJ. Rptrs.: 146.70(-), 224.84(-), 444.15(+). 10/96

Bergen Amateur Radio Assoc., (BARA). P.O. Box 304, Hackensack, NJ 07601. Meets 1st Sun./monthly, New Milford Elks Lodge, Patrolman Ray Woods Dr., New Milford, NJ 07646. Nets: 28.350 Mon. 9 p.m., 144.40 9 p.m. Wed. 5/96

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. 3/96

South Jersey Radio Assoc., (SJRA). Pennsauken Sr. Hi Sch. at Hylton Rd. & Remmington Ave., Pennsauken, NJ 08109. Meets Jan.-Oct., 4th Wed./monthly, 7:30 p.m. (Nov.-Dec. 3rd Wed.). Talk-in: 145.29(-) rptr. Club call K2AA. 8/96

NEW YORK

Amateur Radio Assoc. of the Tonawandas, (ARATS). P.O. Box 430, No. Tonawanda, NY 14120. Meets 3rd Tues./monthly (except July & Aug.), 7:30 p.m., Sweeney Hose Co., 499 Zimmerman St., No. Tonawanda, NY. Talk-in: 146.955(-) rptr. W2PVL. 10/96

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

Hall of Science Amateur Radio Club. P.O. Box 131, Jamaica, NY 11415. HOSARC, 2nd Tue./monthly, Hall of Science Bldg., 47-01 111 St., Flushing Meadow Park, 7:30 p.m. Info: Charlie, WA2JUJ, (516) 420-0046. 2/96

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

PROS, Pioneer Radio Operators Society. Meets 1st Wed./monthly (except July/Aug.), 7 p.m., Sardinia Town Hall, Savage Rd., Sardinia, NY. Net 9 a.m. Thurs. 3853 kHz. 3/96

The Radio Club of J.H.S. 22, N.Y.C., Inc. WB2JKJ. P.O. Box 1052, New York, NY 10002. 24-hr. hotline: (516) 674-4072. Fax: (516) 674-9600. Non-profit org. using Ham Radio to enhance the education of youngsters, nationwide. Join us — "Classroom Net", 7.238 MHz, 7 a.m. E.S.T. PSE QSL! 9/96

Suffolk County Radio Club, (SCRC). Meets 3rd Tues./monthly, 8 p.m., Bohemia Rec. Ctr., Ruzicka Way, Bohemia, NY. Talk-in: 145.21(-) rpt. Morten Eriksen, KA2UIU, (516) 929-6911. 4/96

Westchester Emergency Comm. Assoc., (WECA). Meets 2nd Mon./monthly, 7:30 p.m., Westchester County Ctr., White Plains, NY. Contact WB2VUK (914) 631-7424 or WECA INFO LINE (914) 741-6606 for details. Talk-in WB2ZII/R 147.06(+) PL 114.8/2A. 10/96

Yonkers Amateur Radio Club, (YARC). Meets 2nd Sun./monthly, 10 a.m., 1st Pct., Yonkers Police Station, E. Grassy Sprain Rd., Yonkers, NY. Info: P.O. Box 378, Centuck Sta., Yonkers, NY 10710. (914) 963-1021. 146.865(-), 440.15(+). 10/96

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(-). 3/96

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. 5/96

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(-). 9/96

Clyde Amateur Radio Society (CARS). Meets 2nd Tue./monthly, 7:30 p.m., Municipal Bldg., Clyde, OH 43410. NF8E rptr. 145.35(-) and 442.625(+) MHz. Net Sun. 9 p.m. Info: E. Remaley, KA8CAS. 3/96

Firelands Area Rptr. Assn., (FARA). Meets 4th Tue./monthly, 7 p.m., Erie County Admin. Bldg., Sandusky, OH. WB8LLY rptr. 146.805(-). Net Sundays, 8 p.m. Info: FARA, P.O. Box 442, Huron, OH 44839. 11/96

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. 11/96

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 147.03(+) rptr. BBS 145.53. 8/96

Northern Ohio Amateur Radio Society, (NOARS). Meets 3rd Mon./monthly, 7:30 p.m., Gargus Hall, Rt. 254, Lorain, OH. Info: rptr. K8KRG 146.70, DX alert rptr. 145.15. 10/96

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: Brenda, KB8IUP, 866-5928. 11/96

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(-). 2/96

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. 6/96

Keno Amateur Radio Club. P.O. Box 653, Keno, OR 97627. Meets 3rd Thurs./monthly, 7 p.m., Keno Fire Stn. Rptr. 147.32(+) W7UFM. Info: Tom Hamilton, WD6EAW, (503) 883-2736. 11/96

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

Umpqua Valley Amateur Radio Club, Inc. P.O. Box 925, Roseburg, OR 97470. Meets 3rd Thurs./monthly, 7:30 p.m., Douglas County Courthouse, Rm. 310, Roseburg, OR. Info: W5PII/R 146.90(-) or (503) 673-1310. 6/96

Valley Radio Club of Eugene. Meets 1st Fri./monthly, 7:00 p.m., Lane County Red Cross chapter house, 150 E. 18th Ave., Euguene, OR. Info: (541) 484-0502. 12/96

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. 10/96

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. 2/96

Mercer County Amateur Radio Club, W3LIF. P.O. Box 996, Sharon, PA 16146. Meets 4th Tue./monthly, 7:30 p.m., Shenango Valley Med. Ctr, Farrell, PA. Net, Thurs. 9 p.m. on 145.35(-) W3LIF, Digi. 145.01. 3/96

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

Warminster Amateur Radio Club, WA3DFU. P.O. Box 113, Warminster, PA 18974. (215) 672-9985. Meets 1st Thurs./monthly, 7:30 p.m., Neshaminy-Warwick Presbyterian Church, Warminster, PA. Net on 147.69(-), 147.09(+), Wed. 8:30 p.m. and 28.450 Sun. 9 p.m. 4/96

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. 6/96

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. 7/96

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

VIRGINIA

Southern Peninsula Amateur Radio Klub, (SPARK). Meets 1st & 3rd Tue., Salvation Army Community Bldg., Hampton, VA. Repeaters 146.73(-), 449.55(-). VE Exam Info: (804) 898-8031, W4RTZ. 2/96

Virginia Beach ARC. Meets 1st Thurs./monthly (except July), 7:30 p.m., St. Andrews United Methodist Church, Tucson & Princess Anne Rds., Virginia Beach, VA 23462. 2/96

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. 2/96

The Mike & Key Amateur Radio Club. Meets 3rd Sat./monthly, 10 a.m., Salvation Army Renton HQ., 720 Tobin St., Renton, WA. Talk-in on 146.82(-) rptr. Doors open at 9:30 a.m. 5/96

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. 6/96

Tri-State Amateur Radio Assn. Meets 3rd Tues./monthly, 7 p.m., The American Red Cross, 111 Veteran's Memorial Blvd., Huntington, WV. 5/96

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. 7/96

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

WITH THE HANDI-HAMS

Leigh Penny, KD6SVF

What do frogs have to do with Amateur Radio, and why did they attend Radio Workshop? More importantly, did anyone get their license, and how do we explain the unseemly behavior of the lady campers, who seemed bent on keeping our amphibian friends from earning their upgrades? In this camp retrospective, Leigh tells all!

— Patrick Tice, WAØTDA

The Camper's perspective

The week of 27 August to 3 September 1995, was the most enjoyable week I'd ever spent at a HANDI-HAM Workshop. I've gone to six, but there are two reasons why I liked this workshop best: (1) because I wasn't upgrading my license, I didn't have to study before coming to the workshop or study for the test at the end of the week; and (2) the diversity of the campers in age (15-75) and in their ham radio experience, made them interesting to be around.

The byword at Courage North is cooperation. We work together and encourage each other. Whether it is a student with a sensory impairment asking a ham with a physical disability directions to the King Building or the lodge; or a counselor helping a student dress, we all help each other. For some, this was their first time away from home. This was the time for them to build confidence on and off the radio, and to make new friends.

Classes offered included: Novice, Technician, General, Advanced, and Extra. By passing the test at the various levels, you earn your Amateur Radio license at that level. In addition, two non-license classes were taught. These classes were Operating Skills and Computing. The computer class gave each of us with physical or sensory limitations individualized instruction. We worked on programs in large print for the visually impaired and touch-control programs for those with physical limitations. The other non-licensing class, Operating Skills, was designed for the more advanced ham who wishes to hone his/her on-air ham radio skills.

Courage North Radio Workshop is not for sissies! Classes run from 9:00 to 12:00; lunch, then a break from 1:00 to 3:00 to do whatever you would like.

"Get your license — you can do it!" says Leigh Penny, KD6SVF.

Activities such as fishing, ping-pong, visits to local historical parks such as Itasca State Park (where the Mississippi River begins), wilderness walks, Trivial Pursuit, reading a good book, or having a marshmallow roast at an evening bonfire are a few of the activities available during the afternoon break or in the evening. After the two-hour break, we went back to class for another two hours before dinner. After dinner, most students and their instructors met for a two-hour evening session.

Friday, the night before the test is the most difficult, sleepless night of the week. Saturday morning found all those being tested mentally numb! We were joined for breakfast by several examiners who administered the tests.

With the use of prearranged aides who read the examination and recorded the answers for those who needed assistance, everything went quite smoothly. It took about three hours for everyone to be tested. Each class was tested at once in the enormous gymnasium. When the student completed his or her test, they were told if they passed their test. For those who did not pass, there is always the California Workshop in Malibu in March.

Some personal insights: Life in my cabin was a memorable experience, to say the least. Every morning about 6:00 a.m., I was awakened by a rooster crowing. I knew there weren't any roosters within a country-mile. After I remembered that it was a blind student's alarm, I rolled over and went back to sleep. A near catastrophe occurred when we discovered that we had no hot water in our cabin. I was there almost two days before I had a shower. It was fun to watch grown women, dressed only in their underwear, go after two frogs that came for a visit. That was not as bad as last year, however, when a bat got loose in our cabin!

The most profoundly significant thing that happened to me since I became a ham occurred when a fellow amateur, Diane Scalzi, WI8K, helped me get on the air for the first time. The first person I talked to was Joe from New Jersey. We talked about 10 minutes. I talked to three other people that night. Initially, I had a shake of emotion in my voice. I guess everyone around me had a tear in their eye and a crack in their voice, too. Thanks, Diane! WR

Pass it on . . . Worldradio

QUARTER CENTURY WIRELESS ASSOCIATION INC.

John G. Troster, W6ISQ

New Chapters

Leo, K1QPJ/4, and Lorraine Witkowski, WA1EDR/4 have joined with some 20 others to form a new QCWA chapter in Sun City Center, FL. We did a story about Leo and his tracking of the ionospheric D layer some years ago. Good luck to the new Chapter!

Also, welcome to the new Chapter in Monterey, CA. It was organized principally by an old friend, Dr. Gerry Griffin, W8MEP. I'm trying to induce Gerry to write a *QCWA Journal* story about his experiences during the Gulf War when he was assigned as Commanding Officer of a U.S. Army Medical Team ministering to the Kurds in Northern Iraq. How about it Colonel?

J.B. Beadle Society

Probably most of you DOGs (Distinguished Old Goats) who were licensed in the middle and late 1930s have an FCC ticket signed by J.B. Beadle, written in one stroke. I'm interested in finding out when he began signing those licenses with his large, handsome, scroll signature, and when he retired. Does anyone have any information about him? Anyone have a picture of him? Was he a ham? What was his "title" in the FCC, etc.? If any of you out there know the story, you have a special invite from me to write it up.

How many have a J.B. Beadle? Maybe there should be a subchapter of QCWA for those who have a somewhat special autograph on their licenses. Some of you even had your license signed by Herbert Hoover. That would be a collector's item.

Time for the DOGS to howl

Speaking of the *Journal,* I'll bet there are a lot of DOGs out there who have memories of your wonderful old station, maybe even pictures, carefully stored in a box or pasted in an album. Probably no one has seen them for years, but we'd like to see them. The *QCWA Journal* is hunting for articles about Amateur Radio history, early experiences, stories about others, and pictures. How can we persuade you to share these gems with the rest of us? So, I'll tell ya.

Barry Wiseman, N6CSW, is the man to contact. Don't be shy. You don't have to be a skilled correspondent or a reporter for the *Wall Street Journal* or *Worldradio*. Just write down what you remember and send it off to Barry. He'll take good care of it and edit for you. In the case of photographs, send them in with a description. If it is an old homebrew, describe the tube lineup, etc. Pictures will be returned,

Barry and Shirley Wiseman at the Dayton Hamvention '95.

of course. There you are, in print for real. Wouldn't that be nice to show the grandchildren!? Only the family sees your scrapbook, but 10,000 QCWAers plus their families will see your *Journal* article!

Barry Wiseman, N6CSW, editor, *QCWA Journal*

When Barry Wiseman began his publishing career in 1989, he had never written anything, never published anything, had no idea of the problems involved with publishing, no idea of who might subscribe to his magazine and he didn't even have that "must" in these electronic days, a computer! But focused fella that he is, and knowing full well about radios, he learns fast.

When our esteemed president, Lew McCoy, W1ICP, told the QCWA Board that he had a possible new editor for the *Journal*, all he said was, "this fellow publishes *Electric Radio* magazine and I think it is great publication. Interesting, lot of specialized information about old-time radio, and I enjoy reading it." On the basis of that recommendation, we approved the new editor. You'll agree we didn't make a mistake.

Barry's a native of Canada, growing up in Simpson, Saskatchewan. His family lived in the shadow of the huge radio tower of broadcast station CBK, a station in the Canadian Broadcasting System and one of the most powerful stations in Canada. He couldn't escape the idea of radio. At age 10, on his own and without an Elmer, he began building radios. His first was a crystal set which drove a speaker from nearby CBK! His next project was the

Allied Space Spanner, a tube set, and he raced on to build bigger tube radios. Barry says as a youngster he went to bed with his radio catalogs, constructing wonderful radios and radio stations in his imagination before turning out the lights. This soon led to his reading *QST*. He now realizes that QCWA President Lew McCoy was writing articles almost before he could read, and never dreamed he'd one day be working for Lew!

After high school, Barry put aside his radio hobby and headed for northern British Colombia where he worked as a heavy equipment operator in open pit mines in winter and in summer, explored and did some prospecting. Barry took a radio with him and actually did monitor shortwave and amateur bands, but never had the time to pursue this interest in Amateur Radio.

During his 15 years in Northern BC, Barry met and married Shirley, and together they decided to move south to a more moderate climate. They settled on the California coast in Grove City, near Pismo Beach, of clam fame. Barry established a moped shop just before the time of the big gasoline shortage, so he was in the right place at the right time. He met a ham, Lloyd Hutterman, W6IOY, now deceased, who encouraged Barry to rekindle his interest in radio and helped as all good Elmers do.

In 1978, Barry was licensed as a Novice with the call KA6ISD, and went on the air with an HT-37, SX101A and a dipole. A few months later he moved up to Advanced and N6CSW. Later he upgraded his station to a Drake TR-4 and then he began experimenting with other modes, including RTTY. But his interest in vintage radio resurfaced and he began collecting old radios. You can see by the dates here that Barry has a few years yet to go before he is eligible for QCWA membership. However, QCWA GM B.J. Walsh says he has a membership application already prepared for Barry, dated 2003.

In 1980, the Wisemans moved, with daughter Toby, to Durango, Colorado, "for the usual reasons," and Barry began a fire extinguisher business. What a versatile fella! It was then that he began collecting vintage radios in earnest, and he restored them all to top working condition. That became his "thing" in Amateur Radio. Checking into the AM phone nets, he's met hams across the country also interested in this kind of thing.

In 1989, Barry sold his fire extinguisher business and looked around for other enterprises. He really wanted something not for the money, but something he was truly interested in. That is when he conceived the idea of starting an antique radio publication. He started *Electric Radio* on a shoestring with no background in writing or publishing, totally computer illiterate. But he bought the computer, read the manuals (I told you he was unusual!) and went into business. How did he get subscribers? He went through his log book and found 1,000 contacts with operators using vintage radios. He offered the first issue free, together with a free classified ad to all subscribers. He got 170 of 'em. That was May, 1979. Today he prints 3,200 copies for each issue. His office manager? Shirley of course!

His first issue featured an interview with Leo Meyerson, WØGFQ, and also an article about QCWA written by Esther Given, W6BDE, (that's "Baby Doll Esther"), who has become a regular columnist. You will recognize both of them as former Directors of QCWA. Barry has been close to QCWA since the beginning.

Barry is usually found on the AM nets from 160 through 10 Meters using his vintage equipment. Lately you'll find him mostly on the 1900 kHz western net. He takes his choice of a TMC-GPT-750 or a Viking 2 or DX-100, etc., and receives on an RCA-CR88 or NC-300 or R-390 or something else in the collection.

Barry has an opportunity to see trends in Amateur Radio and finds that a lot of younger people are becoming interested in "pure tone" radio, read AM. This holds for amateur operations as well as hi-fi. This interest is probably aided by the fact that the average ham would like to build things, and used to be able to get his fingers into a tube set and see tubes light up, whereas these modern, tiny box rigs with layers of circuit boards are almost impossible for anyone outside a high tech lab to even see, let alone to understand or repair.

In 1941, Leo Meyerson's World Radio Laboratories advertisements began to use the motto: "calling all real radio men." Barry believes that vintage radio enthusiasts, amateurs and others, may be the modern day "real radio men."

We all believe QCWA is privileged to have Barry's publishing experience and enthusiasm, working for our *Journal*. 73 + 25 Jack **WR**

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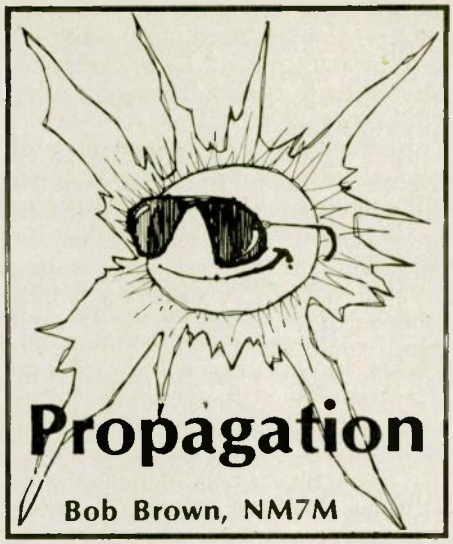


Everybody loves a "spoof" and I'm no different. So I want to tell you about one that's really "far out." It was written by Dave Barton, AF6S, and appeared in the August '91, issue of *The DX Magazine* under the title "Lagrange 5." Now that title may or may not mean something to you, depending on your background. If you're into amateur astronomy, you know that Lagrange 5 is a point in space, say between the earth and the moon, where a satellite could be parked in a stable position. Let me tell you how this came up in the story.

It all begins with the hero, Joe Striker, W6XYI, tuning around a dead 10 Meter band, several hours after sunset. He heard a CQ by a station signing a strange call sign, ØA1A/SM, and raised him after a short call. In the exchange that followed, ØA1A/SM went on to identify himself as "Slim," said he was operating "space mobile" and gave his QTH as "Lagrange 5 Orbit Earth-Moon System."

If Joe Striker were a seasoned DXer, the name "Slim" might have given him pause as he's the mysterious operator who goes from island to island, always on the move. So Joe wouldn't be a bit surprised to hear "mobile," even "marine mobile" or "aero-mobile." "Space mobile" would be a bit different but Joe might take it in stride if he'd contacted the American space shuttle or the Russian space station, MIR. Lacking that kind of experience, it might just sound like a gag. But as the story goes, Slim went on to explain his QTH at L/5. Let me do the same but in a broader context, even bringing in HF propagation.

To begin, in an rotating system like the moon orbiting the earth or a planet orbiting the sun, there are five Lagrangian points in the rotating system where any object, say a satellite or even a dust particle, would experience no net force. For the earth-moon system, the five points are shown in

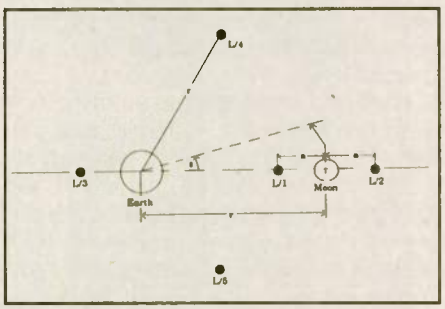


Figure 1.

Figure 1, with L/1 and L/2 on either side of the moon, L/3 behind the earth and L/4 and L/5. It's fairly easy to show that L/1 and L/2 are 61,000 km either side of the moon; all that's needed are the masses of the earth and the moon as well as the distance between them and how fast the moon orbits the earth.

When it comes to the QTH of ØA1A/SM at L/5, that's a bit more involved but it turns out that L/4 and L/5 are about 60 degrees either side of the earth-moon line, as in Figure 1. Having said all that, I can see you're getting fidgety, wondering why I'm telling you this and even wondering if it's really true. Never fear, this is not another spoof. As a matter of fact, astronomers know that in orbiting the sun, the planet Jupiter has 14 satellites at L/4 and L/5, nine "Greeks" at L/4 and five "Trojans" at L/5. If Joe, W6XYI, knew about those satellites, he might have taken "Slim" more seriously. But I digress.

Okay, that was fun and if you want to see how the 0A1A/SM story comes out, read the remaining articles in the series; I'm sure you'll enjoy them. But I want to move on, using the idea of Lagrangian points in our discussion of terrestrial propagation on the HF bands. In order to do that, however, I have to first remind you of what I wrote back in the December '94, issue of ***Worldradio.*** There, I was talking about the modern view of the earth's magnetic field, shaped by the flow of the solar wind past the earth, with the magnetic field lines compressed on the sunward side of the earth and drawn back into a magnetotail going away from the sun.

As you know, magnetic storms tear up the HF bands something awful, MUFs falling and forcing operators to drop down to lower bands. Those storms happen when there are sudden changes in the solar wind, say speeding up, becoming richer in particles or changing the direction of the interplanetary field. At the present time, we have a database to use in predicting MUFs for propagation but magnetic storms are sporadic so there's no database for predicting when they'll disturb propagation.

I can see the smile on your face as the thought crosses your mind, "Why not put a satellite out in front of the earth at L/1 to tell us what the solar wind is doing?" That's a great idea and it would give us some warning of things to come, say the onset of magnetic storms from changes in the solar wind. But how much warning would it give?

That's not too hard to work out; first, we need to know where L/1 is situated along the earth-sun line and how fast the solar wind comes toward us from the sun. If the distance is worked out, we find that L/1 is about 1,500,000 km away from the earth, about 25 times more distant than for the earth-moon system. As for the speed of the solar wind, that can range from about 400 to 1,200 km/sec, really moving along with gusts taking 1-4 days to reach us from the sun.

But that's way below the speed for radio waves, 300,000 km/sec. So let's think about a satellite out at L/1, measuring how fast the solar wind moves along. Then we can compare the time for radio signals to reach the earth, advising us of changes in the solar wind, and the time for the solar wind to reach the front of the magnetosphere from L/1 and, possibly, give rise to a magnetic storm.

Radio signals would take about 5 seconds to reach us from L/1 but, de-

pending on its speed, the time for the solar wind to reach the front of the magnetosphere is between 1,250 and 3,750 seconds. That's a little more than 20 minutes and less than 65 minutes. I have to agree that wouldn't be much in the way of warning of an impending magnetic storm but it would be better than nothing.

As things now stand, solar-terrestrial scientists depend heavily on forecasts from optical observations, of solar flares or coronal mass ejections. If the astronomical "seeing" were poor, for one reason or another, a significant solar outburst could be missed. But if a device sensitive to the parameters of the solar wind were located at L/1 in front of the earth, it could perform a valuable service, particularly in regard to the possible onset of magnetic storms.

As a matter of fact, if HydroQuebec had an hour's warning back in March '89, they might have been able to avoid the collapse of their system. That shut down power to about 9,000,000 people for almost a day. Think of the economic savings that might have resulted from such a warning! So your idea was a good one but NASA thought the same, having a satellite out there, ISEE3 (Interplanetary Sun-Earth Explorer 3) for several years and, as a matter of fact, while still active in research, I benefited from the information it provided.

To see what I'm talking about, look at Figure 2, the modern view of the earth's field from my earlier article in December '94. There, you see magnetic field lines which look like those of a classical dipole except for the fact that some on the sunward side are compressed and there are others, even on the sunward side, going off into the magnetotail. Now that's the quiet state of affairs, before the solar wind kicks up. But if the solar activity makes the wind speed up and reach us with the interplanetary field pointing southward (negative) relative to the earth, magnetic storminess ensues.

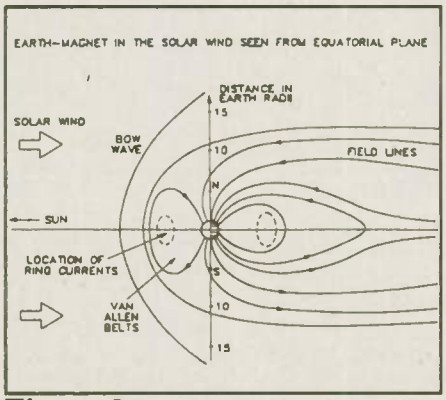


Figure 2.

With storm pressures from the solar wind, the earth's field is distorted even more, field lines at lower latitudes compressed further on the sunward side and some of the high latitude field lines on the sunward side are carried way back into the magnetotail. In effect, that weakens the earth's field at high latitudes and even enlarges the area of the polar cap. And when the solar wind returns to normal, the geomagnetic field relaxes and resumes its original configuration.

All that may seem abstract to you but it's quite real to me, having experienced the effects of a polar cap expansion back in '79. At the time, I was up in Greenland, studying radiation effects at high altitudes, when I stumbled into a solar proton event. That started at 1345 UTC on 18 Au-

gust 1979 and proved interesting in more ways than one. For starters, the flare occurred somewhat behind the east limb of the sun, only becoming evident as an SID from a burst of x-rays as the flare region moved out beyond the east limb.

After that, the protons sent out from the flare site took about 18 hours to make their presence known as a polar cap absorption (PCA) event here on earth. You might wonder how energetic protons can wander around that long and then show up at the top of the atmosphere.

The reason, of course, is that interplanetary space is a magnetic field regime, sort of a "magnetic bottle" of tangled field lines, and the solar protons can rattle around for a long time, going along the field lines or diffusing across them.

So that sort of delay is typical of events where protons are shot outward off to the east and have to diffuse across the interplanetary field before getting to the outer reaches of the earth's magnetosphere. That's in contrast to protons from flare sites more centrally located or off toward the sun's west limb which produce PCA events more promptly, essentially gliding along the interplanetary field lines which go out from the sun.

In any event, my detector had low-energy channels to study x-rays from auroral electrons and a high-energy channel to indicate the presence of gamma rays from nuclear processes of low-energy solar protons, ionizing the atmosphere but unable to penetrate to balloon altitude. So after the flare, the high-energy channel began to show the presence of solar protons at 0800 UTC the next day and then the intensity of the radiation slowly decayed. But at 1635 UTC, the intensity recorded by the high-energy channel increased by 330% in about 15 minutes and then decayed again at about the same rate.

Most curious, indeed. At the time, it seemed like the balloon had suddenly raced northward into the center of the polar cap. But with low winds at 35 km altitude, that was impossible so the only possible explanation seemed to be that the polar cap expanded in area, exposing the detector to the higher level of radiation in-

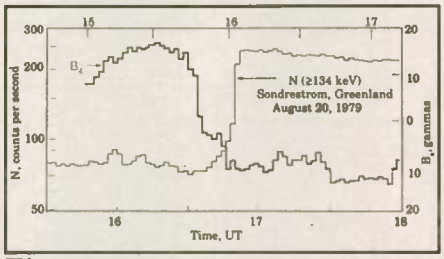


Figure 3.

cident in the polar cap. But how to verify that idea? Data from ISEE3 was the answer.

So after many telephone calls and letters, the data came in from ISEE3, sitting at 265 earth-radii in front of the magnetosphere. Thus, magnetometer data from the Jet Propulsion Laboratory indicated the interplanetary field turned south (negative) starting at 1540 UTC and data from the Los Alamos National Laboratory showed the solar wind was moving along at 615 km/sec at that time.

Assuming the magnetic regime remained intact, it would arrive at the front of the magnetosphere about 45 minutes later and then start changing the shape of the geomagnetic field, even enlarging the polar cap and increasing the intensity of radiation reaching the detector. All that is seen in Figure 3, the interplanetary field Bz vs. time (across the top of the figure) going negative in the time it took the intensity of the high energy channel to increase by 330%.

Okay, that's space physics but where does the ionosphere come in, you ask? Well, there were eight ionospheric devices (riometers) in the Arctic looking at D-region absorption of 30 MHz cosmic radio noise coming in vertically and they showed increases in absorption with the southward expansion of the polar cap. As a matter of fact, the edge of the polar cap moved south of Torshavn in the Faroe Islands, resulting in a 6 dB increase in absorption on 30 MHz.

Okay, the Faroe Islands are along what I call the "Trade Route" for Amateur Radio contacts with Europe. With a SSN of 155, Europe was open on 14 MHz from here on the West Coast at the time in question. If you take that 6 dB absorption for one pass vertically through the D-region, correct it to 14 MHz and consider a full ground reflection in the polar cap at a low radiation angle, signals on 14 MHz would have dropped by more than 50 dB, essentially giving "blackout" conditions on the path.

That was the bad news; the good news was that a major magnetic storm did not follow as the interplanetary field, seen by detectors on ISEE3, returned to normal in about two hours. But I think you get the idea, an instrument out at L/1 would be of value in forecasting the geomagnetic, even ionospheric, "weather" here on earth. So if you hear "Slim" giving "Lagrange 1 Orbit Sun-Earth System" as his QTH while operating "Space Mobile," you'll know his work can benefit us here on terra firma. **WR**

World atlas

The American Radio Relay League has announced the availability of *The Radio Amateur's World Atlas*. Published in English by the German Amateur Radio organization, this booklet is now being distributed in the United States by the ARRL as a complement to the recently revised ARRL World Map and Map of the U.S.

The *World Atlas* includes separate, easy-to-read color plates of North America, Central America/West Indies, South America, Asia, Indian Ocean, Japan, Australia/Pacific Ocean, Europe, Africa and Antarctica. Each map shows country boundaries with prefixes, along with CQ zones, states or provinces, major cities, rivers and mountain ranges.

The 8" x 11" booklet also includes an Index with both ITU-allocated prefixes and national prefixes for each nation of the world.

OLD-TIME RADIO

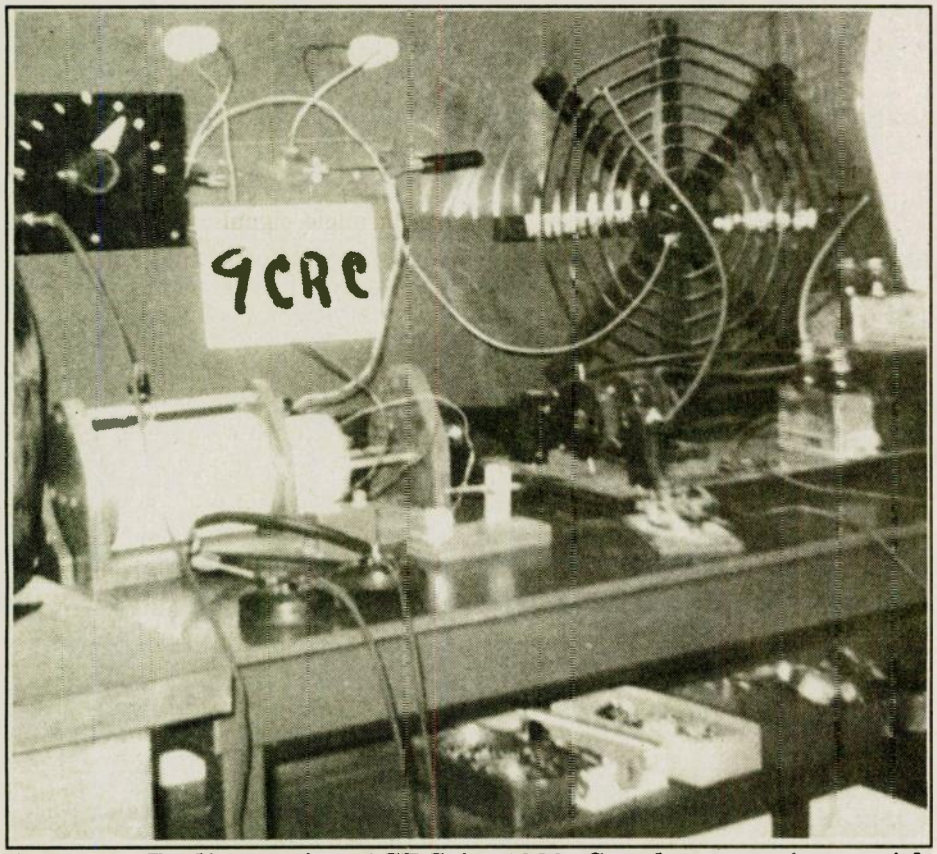
The day of the spark

Russ Rennaker, W9CRC

There are few of us left who can remember the day of the spark transmitters. The smell of the oily transformer, the huge capacitors, the mass of wires, the six inch knife switch for the antenna, and the antenna itself . . . the higher and longer the better, and who knew where "200 Meters" was anyway! I hope this little piece will bring back some of those memories to old timers, and perhaps some knowledge to the youngsters.

My first ham station consisted of a 1 kW spark transmitter with a rotary spark gap. The inductance was ¾ inch copper ribbon wound on a wooden helix form. "Tuning" was accomplished by moving a clip from one turn to another. The capacitors were fruit jars with tin foil glued to both outside and inside.

The receiver used a crystal detector and the inductance was two rolled oats boxes wound with #26 enameled wire, the smaller box moved inside the larger one. The variable capacitor for the receiver was two six inch square pieces of glass with tin foil glued to one side of each and a means of moving them apart like opening a book.



Amateur Radio station 9CRC in 1920. Spark transmitter with rotary spark gap. *—photo by W9CRC*

The antenna was four copper wires attached one foot apart to wooden 2 x 2 pieces at each end. The whole thing was suspended between two sixty-foot telephone poles 200' apart. A large single-pole-double-throw knife-switch grounded the antenna in case of lightening.

The only amateur band in those days was 200 Meters, whatever that meant. Everyone just got as close to 200 Meters as they could, since no one had any means of measuring the frequency anyway. The range of the transmitter was only a few hundred miles but the receiver had greater range and often I could hear high-powered government stations thousands of miles away, and sometimes ships at sea. The crash of the spark and the smell of ozone generated by it is still fresh in my mind.

One trick the hams used at the end of a transmission was to hold down the key and turn off the rotary gap motor. The tone of the signal changed with the speed of the slowing down motor and created a weird sort of musical sound.

The spark was king for many years until tubes replaced it. It's hard to imagine anything so crude could have been an effective means of communication, but believe me it was. **WR**

10-10 INTERNATIONAL News

Chuck Imsande, W6YLJ
10-10 19636

10-10 Internet Update

TENTEN-L on the Internet grows more active each day. All 10-10 members are invited to subscribe to TENTEN-L by sending a message to:

LISTSERV@LEHIGH.EDU

(no hyphens in the address) with the one line message:

SUBSCRIBETENTEN-L<yourname><yourcall>

Example: "SUBSCRIBE TENTEN-L L. B. CEBIK W4RNL"

TENTEN-L is a free service and one of the features of the mail list is its archive files. The "Welcome" message will tell you how to access the index of files and how to use an e-mail message to receive any file of interest. Save that message!

The archives have several categories of information. There is a collection of info for prospective members, including a membership application. Jeremy Bisbo, KB1AWE #63947, compiles lists of 10-10ers on packet, and his growing list is on file. Both he and K5ERJ #11843, keep a list of 10-10 members on e-mail, and we shall be updating the file regularly. The DX section has a 10-10 countries list and columns provided by KC5CP #24949, to keep abreast of DX happenings. The CONTESTS directory includes 10-10 QSO Party rules, a cover sheet, and the summer, 1995, SSB contest results. We shall keep a whole year's results on file, replacing the oldest with the newest, so you can track conditions and success.

The system has grown quite a bit in its first few months of life. It is expected to grow more as we use it more, as we add new files to the archives, and as we think of new services to provide with it. If you have one of the e-mail services like America Online, Prodigy, or any service that lets you access the Internet, try TENTEN-L and see all of the information that is available. If you have trouble with access to TENTEN-L, send an e-mail message to the 10-10 TENTEN-L coordinator, L.B. Cebik, W4RNL #41159 at cebik@utkvx,utk.edu. Stay tuned.

New award managers

Alan Sherman, K1AS #10781, has found it necessary to resign from his volunteer job of countries award manager after many years of service to 10-10. Alan is being temporarily replaced by Tom Henderson, K4CIH #33233, until a permanent replacement can be found. Country Award Applications should be sent to Tom at 4901 E. 15th Place, Tuscaloosa, AL 35404-4522.

Bar Awards for the 100-900 BARS has been handled very capably by Glen Harding, K7OMK #1407 for a good number of years and Glen has found it necessary to retire from his volunteer position. Glen's duties of 100-900 BAR Manager is being taken over by Bob Peschka, K7QXG #5956. Send all BAR awards for the 100-900 BARS to Bob at 2580 SW 195th, Aloha, OR 97006.

Another volunteer has found it necessary to surrender his duties as 10-10 prefix award manager. Rex Holford, KFØYF #20423, is passing his duties over to Bill Montgomery, KB3GW #33517. Prefix Award applications and upgrades should be sent to Bill at P.O. Box 7183, Las Cruces, NM 88006.

All of the above changes are effective at this time and all correspondence regarding these awards should be addressed to those listed above. One thing to keep in mind, it takes time to get the records transferred and for the new managers get up to speed. So, please give them time to get themselves organized.

We thank all of those retiring volunteers who have served 10-10 and found it necessary, for one reason or another, to resign from their volunteer jobs.

New director

Director Marvin (Marv) Hagan, WB2SJQ #6090, has found it necessary to resign his director's post due to family health reasons. Marv was elected to the Board of Directors during the first 10-10 election, served his four-year term and then was reelected for another four year term. Marv served on the Finance Committee and will be missed by all. A recent move into an apartment complex forced Marv to make his radio contacts from his mobile station, but he has been heard regularly as a mobile station. With the new 10-10 Mobile Award, we hope Marv will be in there giving out those mobile contacts and a few counties.

The Board of Directors has approved the appointment of Dave McCardell, WD4EWB #18760, as the replacement for Marv, and Dave will serve out the balance of Marv's term. Dave is a well known 10-10er and we welcome him to the Board.

10-10 Contests

The next 10-10 contest is the Winter SSB QSO Party (10-10 contests are called QSO Parties) which will be held on the weekend of 3-4 February 1996. The rules of the contest are the same as always. Work as many stations, (10-

10 member or not) as possible. Log the call, time (UTC time), QTH state or country, name and 10-10 number (or "none"). Contacts with 10-10 members count 2 points and contacts with non 10-10 members count as 1 point. For additional information, see the January issue of the *10-10 International News*. Please remember that 10-10 policy is that all 10-10 members have the courtesy to observe a *quiet zone* between 28.490 and 28.510 MHz for non-contesters to use.

A possible new 10-10 contest is being considered by the contest manager and his committee. This new contest, if finalized, will be held each year on 10 October. A natural, a 10-10 contest on 10-10! Maybe we should call October 10th 10-10 Day and maybe the contest should be called the 10-10 Day Contest? How about a 24 hour 10-10 sprint contest on 10-10? Sounds like a winner to me. Why not let Don Zielinski, KØPVI #9902, 10-10 Contest Manager know your ideas on this possible new contest. Write Don at P.O. Box DX , Genoa, CO 80818. How about that P.O. Box number? Don can also be reached via e-mail at 102675.3253@ compuserve. com. Don would like to hear from you with your ideas and suggestions regarding this potential new 10-10 contest. Watch for additional information.

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 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 8 page *Prospective New Member Brochure* which contains everything you want to know about the 10-10 organization, a listing of all 10-10 Chapters, their day, time and frequency of net operation and an application form. Also enclosed will be a copy of the 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.

If your membership in 10-10 has expired, send your dues ($10/year) to 10-10 International Net, Inc., 643 N. 98th Street #142, Omaha, NE 68114-2332. You will become an "ACTIVE" member again and receive all of the benefits of 10-10 including the quarterly *10-10 International News*. Remember 10-10 numbers are issued for life and your originally issued number is always yours. WR

RF lights

RF light bulbs are on their way and they could add to the QRN currently on the ham bands. The Federal Communications Commission waived its rules to permit the General Electric Company to begin marketing a new RF powered light bulb.

At GE's request, Part 18 of the commissions regulations has been waived. Part 18 limits the amount of RF energy that can be conducted into the electric power lines by RF lighting devices in the band 2.2 to 2.8 MHz. GE proposes marketing an unlimited number of RF light bulbs to consumers that comply with the conduction limits for nonconsumer RF lighting devices in this band.

Commission rules already permit RF lighting devices used in commercial environments to place this signal level on the AC power lines. The FCC says that there has been no record of significant interference problems from the use of these devices in commercial environments. It also says that radio operations in the range 2.2 to 2.8 MHz are not normally employed or intended for reception in residential environments. GE was granted a waiver for one year, and the FCC reserved the right to revoke the permit if it determines that RF lighting devices operating under the conditions of the waiver create severe interference problems.

Three years ago a California company, Intersource Technologies, promoted an RF-powered lightbulb that operated at 13.56 MHz. According to the manufacturer it was designed to keep unintentional radiation to a minimum. The company claimed that its 25-watt RF bulb could generate as much visible light as a 100-watt conventional bulb but these lamps were never marketed.

The ARRL says it has a definite interest in what kind of interference the GE RF bulb may generate. The League says that it will obtain samples of the GE bulbs for testing as soon as they are available. ARRL Laboratory Supervisor Ed Hare, KA1CV, says that the new bulbs should not, if properly designed, create any more interference to Amateur Radio operations than fluorescent bulbs, dimmer switches, or other similar devices found in the home. Other experts disagree. They point to the problems that a bad incandescent lamp dimmer can create for the average ham. WR

Richard Fisher, KI6SN

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

The OHR-400: 4 bands, no waiting

Given today's fleet of extraordinary QRP transceiver kits, it is getting more and more difficult to raise any eyebrows when a new rig floats onto the scene. With few exceptions, most of the new rigs are variations on a theme: Solidly designed single band superhet transceivers capable of putting out a watt or two on a 35 or 40 kHz segment of a CW band. Most are crafted with portable use — especially backpacking — in mind. In a league of its own, though, is Oak Hills Research's new OHR-400 multiband CW transceiver kit. It's a genuine conversation piece that's already creating a stir among some avid homebrewers.

An eyebrow-raiser? You bet

Dick Witzke, KE8KL, who has a black belt in electronic design, took many of the best elements of his Big Rapids, MI-based company's earlier transceivers, along with some new twists, and packaged them into a great multi-featured, multiband radio. The best part: With the turn of one front panel switch the rig is capable of operation on either 80, 40, 30 or 20 Meters, delivering 3 to 5 watts of clean CW on up to 150 kHz of each band. Priced at $319.95, the OHR-400 better fits the image of a rock solid fixed station transceiver than the somewhat Spartan "grab-and-go" backpacking-styled superhet radios — such as the NorCal-40A, the New England-'40 and Small Wonder Labs' SW transceiver series, the Oak Hills Explorer, the Gary Breed K9AY transceiver, et al.

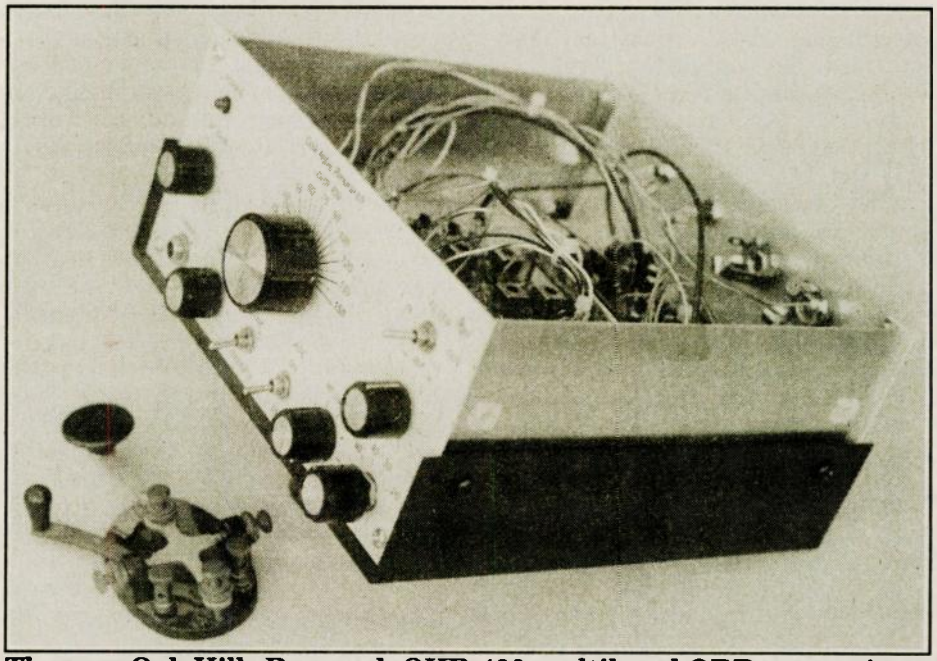
Even placing NorCal's fabulous Sierra multiband, plug-and-play transceiver beside the OHR-400 is comparing kumquats to persimmons. While the '400 is by no means a boat anchor, its shape, weight and current requirements make it far better suited for staying home inside a warm, cozy radio shack than wallowing in dust beside a mountain trail.

Circuitry is spread across three top quality plated-through printed circuit boards. The most densely populated PCB houses the receiver. The others carry the oscillator, transmitter and T/R circuitry.

Putting the OHR-400 together is an ambitious project. Experienced builders will likely take 30 or more hours to get the job done. This kit should not be attempted by beginners. Parts for each of the three boards are parceled into separate baggies, making component assortment a palatable task.

If the optional Curtis keyer kit is ordered ($39.95), then count on a fourth board to complete. The builder first tackles the '400's receiver board — a densely populated landscape with no fewer than eight ICs, five transistors, four crystals and dozens and dozens of resistors, capacitors, diodes and other attendant parts to make this single conversion superhet come to life. The receiver features high-side local oscillator injection, RF pre-amplification, a diode ring mixer, selectable automatic gain control, RF gain control, four-pole crystal ladder filter, selectable four-pole audio filter, 150 kHz tuning coverage and 1 kHz RIT. With the filter out, bandwidth is about 800 Hz, Witzke says. With the filter switched in, it's about 700 Hz — good for holding QRM at bay. Audio? There's tons. Enough drive for either 8-ohm headphones or a speaker.

The transmitter features a rugged 2SC2075 final amplifier transistor, capable of delivering the QRP "legal limit" of five watts. Output measurements vary from band to band, though. Adjusted for full output on 80 and 40 Meters, the OHR-400 drops to about three watts on 30 and 20 Meters with



The new Oak Hills Research OHR-400 multiband QRP transceiver.

the rig tested here at KI6SN. The OHR-400's manual recommends that "most efficient operation occurs when the output power is 4.5 watts and the unit is drawing about 1.3 amperes."

Most QRPers will agree that that current requirement is not too battery friendly. Separate five-pole output filters keep the rig well within FCC harmonic suppression limits on each band. A series of reed relays makes the single-knob band switching possible from the front panel.

Also on the cream-colored front are audio and RF gain controls, main tuning knob, AGC, audio filter and TUNE/OPERATE switches, RIT adjustment with center detent, headphone jack, speed control for the optional Curtis keyer, and a red LED that glows when the rig is on. A potentiometer on the back panel allows the output to be easily adjusted from 0 to full power. There's also a 12-volt power jack, separate manual key and keyer paddle jacks, and an oscillator output jack — for sampling the local oscillator when a frequency counter or digital display unit is being used. The antenna connector is a standard SO-239.

Each control on the front and rear panel is identified with crisp black lettering. The top and bottom covers are flat black. The OHR-400, in an enclosure 8.25 inches deep, 4.25 inches high, and 8.25 inches wide, is as handsome as it is versatile.

The rig has been used extensively on each band here at KI6SN. Reports on tone, keying and frequency stability have been excellent — even after requesting hyper-critical assessments. Early start-up fell fortuitously on the November weekend of the *CQ* Worldwide DX Contest — an excellent shakedown for both the '400's receiver and transmitter. The rig performed beautifully. For example, although "not really in the contest," several Japanese stations were easily snagged on 40 Meters from here in Southern California. This, I might add, with a rather wimpy G5RV dipole sagging at about 15 feet.

The adjustable audio filtering, AGC, RF and AF gain parlayed to make the '400 darned near crunch-proof in the face of CQWW's fierce QRM. The keyed signal is crisp and clean. And the QSK is smooth, silent and seamless. If there's any room for improvement in the OHR-400, it's in the rig's sidetone monitor. It's loud, and that's gratifying. But I found that the keying weight of the monitor sounds much, much heavier than the weighting of the rig's actual output signal.

It's a somewhat troublesome discrepancy for CW operators who like listening to nicely-sculpted Morse — especially when it's their own. While the output signal is just perfect, the sidetone monitor sounds rather heavy and sluggish. Fortunately, it in no way reflects what's going over the air. A CMOS Super Keyer III was used to key the '400 during tests. Like his rig designs, Witzke has also honed instruction manual formatting into an art. The OHR-400's step-by-step guide to building is nicely split into mini-projects for each of the rig's PC boards. This makes building a lot less tedious. In effect, you're building three smaller projects (four if you include the optional Curtis keyer board) and in the end lashing them all together into a great transceiver.

Detailed parts lists, large pictorials, schematic diagrams, individual part profiles and easy-to-follow written instructions make putting the OHR-400's mini-projects together a breeze. By the way, every component was present and accounted for. One cautionary note: Time, patience and frequent rest breaks are requisite ingredients for success.

Once the job is done, get rested again for the alignment. A rig this complex requires a pretty sophisticated procedure — not to mention test gear, including a 25 MHz oscilloscope with 10:1 probe, voltmeter, QRP wattmeter, QRP dummy load, a separate transceiver, and a clean and well- regulated 13.6 volt power supply capable of delivering at least 1.75 amperes. Don't be discouraged if this test gear isn't in your shack, though. For $65, Oak Hills will align your completed rig and ship it back to you.

For more information, Oak Hills Research's mailing address is 20879 Madison St., Big Rapids, MI 49307. To reach the company by telephone: 616/796-0920. **WR**

Tropo DX

Ken Rameriz, KP3XS, in Puerto Rico says that the best Tropo event he has seen in a long time occurred the evening of 30 October and was still present at 1 a.m. EST on Tuesday the 31st. Ken says via the Internet's VHF Reflector that he took to the airwaves at 8:30 p.m. EST and found the band open to Florida. He then proceeded to work every Florida grid down to the Keys. The only grid missed was EL86.

Ken says that he kept hoping one of the Cubans would get on, but no luck. He did hear one of the Florida stations work KD4UPF in FM18 and quickly swung the beams northeast where his first contact was KM1X in Rhode Island! Ken then went on to work 90 stations in the next 4 hours including WZ2O all the way to 1.2 GHz! **WR**

CONSTRUCTION

EZ-Cheapo QRP RF wattmeter

Mike Greenfield, N9JIY

When you buy a two-pack of Copper-Top™ batteries, you'll get a green battery tester built into the plastic packaging. I took one apart. It's a low-resistance load tapered to heat farther up the scale as current going through it increases. The one I got measured just 4.5 ohms. You sure don't want to test a battery for long!

1.5 volt pushed the indicator line half way up the tester scale. A little arithmetic said the tester was passing ⅓ amp at half-scale, 1.5V/4.5 ohm = 0.33 amp. More arithmetic said it was handling ½ watt, 1.5V x 0.33 amp = 0.5 watt.

Interesting! What to do with this great find??

Antenna loads are to be about 50 ohms for most of our rigs. I took a 50 ohm dummy load and wired it in series with my little tester. Total resistance ended up being 56.7 ohms.

Power dissipated by this combo of two resistors will be proportional to the resistances involved. Total resistance is 56.7 ohms. The tester is 4.5 ohms. So, the tester is going to dissipate 8% of the power dissipated by the two-resistor combo, 4.5/56.7 = 8%. Turning it around, the combo will be dissipating 100%/8% = 12.66 times what the tester shows.

SOOOOooo,....if ½ watt is half scale on the tester, what power will the two-resistor combo be dissipating when the tester shows half scale? The answer is ½ watt x 12.66 = 6.33 watts, just above QRP power levels! I attached the combo to my transmitter at about 5 watts, keyed down for 5 seconds, and a half-scale reading on the tester is exactly what I saw.

Right then, I got a little aluminum project box, mounted a coax socket on both ends, cut a slot through which to view the tester and wired the tester between the centers of the two coax sockets. Little alligator clips made the connections. Clear packing tape made a window and held the tester in the window. A self-stick paper label made a meter scale.

I put 1.5V across the tester for 5 seconds, noted where the line rose, and marked a little below that for 5 watts. Attaching my 50 ohm dummy load to one of the coax sockets finished up my EZ-cheapo QRP RF wattmeter.

NOTE: If you put much more than 1 watt through the tester, you'll smoke it for sure. This converts to about 12 watts for the finished RF wattmeter. So, take it easy! **WR**

WRC results

The 1995 World Radiocommunication Conference is over and it's good news for those hams in favor of keeping the Morse Code. While the Geneva ITU conference dealt with a number of proposals to simplify the Radio Regulations and to expand mobile-satellite services, the most controversial matter raised having to do with Amateur Radio was a New Zealand proposal to delete International Telecommunication Union Radio Regulation 2735. This is the requirement that amateurs demonstrate Morse code ability in order to be licensed to operate below 30 MHz.

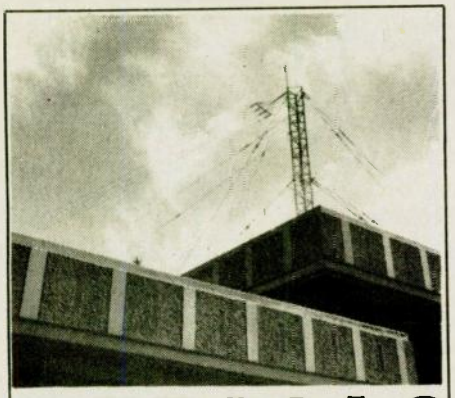
The conference did not accept this proposal. Instead, it agreed to include consideration of the amateur regulations on the provisional agenda for the 1999 WRC.

The broad language of the agenda item should also allow for consideration of any changes that might be necessary to achieve global recognition of an International Amateur Radio Permit.

Another preliminary agenda item for WRC 99 deals with the possibility of increasing the available spectrum for broadcasting, particularly between approximately 4 and 10 MHz. This raises concerns not only with regard to the 40 Meter amateur band, but also for the top end of the 75 Meter band, which is already allocated to broadcasting in ITU Regions 1 and 3.

Amateur Radio's interests were represented at the conference by International Amateur Radio Union President Dick Baldwin, W1RU, secretary Larry Price, W4RA, and Region 1 vice chairman Wojciech Nietyksza, SP5FM. ARRL Technical Relations Manager Paul Rinaldo, W4RI, was a member of the U.S. delegation, and other national delegations also had Amateur Radio representatives at the conference.

❤ Happy Valentine's Day! ❤



AERIALS

Kurt N. Sterba

Some recent writing called the one-wavelength horizontal loop antenna, "overlooked." If it is, it's certainly not my fault as I've often beat the drum about this good radiator.

The article went on to say that a disadvantage to the antenna was that it requires four supports. Well, if that's the problem, how about only three supports? How, you may be asking, does one put up a square antenna with only three supports? Easy! Convert it to a triangle.

First, let me save the usual gang of Kurt tweakers their time and effort in writing to set me straight. Yes, I fully know that the triangle will be some (actually insignificant) fraction of a dB down from a square. I myself run mine in the form of a perfect circle.

Actually one could erect the loop with two supports. One end of the triangle could be the already existing house, garage, tree, or whatever.

How about NO (newly added) supports? You could use your existing fencing. Where the fence meets at a 90 degree angle is one point of the triangle.

Some will say that an antenna that low to the ground will have a very low impedance and won't match well. Yep, that's what it shows in some charts. As the antenna goes near the ground the impedance falls drastically. I say that's not so.

Well, who are you to believe? Should it be the chart in a famous book or your good Uncle Kurt that you put your faith and trust in? Neither. You should only take the word of yourself AFTER you have conducted the experiment YOURSELF. Run a dipole along your fence at about waist height. Make it for 20M. Use one of those nifty antenna analyzers at the center conductor. Trim up the antenna for resonance. What did you find?

Now, some charts have recently been modified to show that the sharp impedance drop really takes place only over "perfect ground." Unless you are performing your experiment over a giant sheet of flashing copper one-hundred wavelengths in all directions you are stuck with "real ground" like the rest of us.

We'll continue this pondering but first let's clear up the loop issue. The basic formula is 1005/F MHz. As an example 1005/14.2 = 70.774 feet or 70 ft., 9-5/16 inches. Caution! That only gets you in the ball park. From there on it is trimming to adjust for your particular locale.

For the perfectly square antenna the starting point for each of the four sides would be 17.693 feet. For the triangle version begin with 23.591 feet on each of the three sides.

Feed it anywhere you like with the feedline of your choice.

The nice thing about this antenna is that if you cut it for 40M it will also work on 20 and 10. Put one up for 80 and it's also good for 40, 20 and 10.

There are those who say the horizontal loop is only good for local contacts. I will let NK6F/HB answer. He tells me, "Am using horizontal loop atop hotel roof in a deep valley in the Swiss Alps right now. Have worked 86 countries in one month."

On to searching for higher truth. I think the figures for the impedances for the "Multee" antenna (written up in many handbooks) are absolutely whacked out. Who is right, me or the books? You can answer that only after YOU have run the tests.

A couple of issues ago I commented on directional wattmeters. I have been sent copies of arguments on a computer service about my remarks. Some said I was right. Some said I was wrong. Both sides piled up quality references to defend their positions. What nobody (that I saw) said was, "I just went and set up the condition mentioned and it turned out like this."

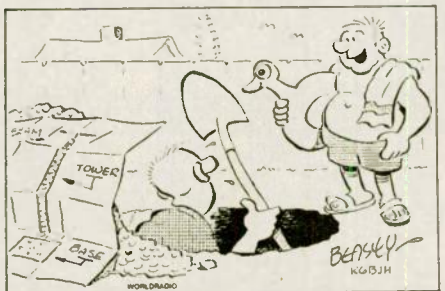
Bright people (on both sides) went to the textbooks. They came up with different answers. And, even people at companies making wattmeters have taken opposite sides on the matter!!

Who is right? You can only be sure after you have set up the conditions and recorded the results yourself. And then do it again. The ultimate authority is YOU, but only after having actually run the tests yourself.

The "antennas are eyesores" people are seeming to multiply. One possible way to avoid some of their hyperactivity is to keep a lower profile. For example, two of those Lakeview 20M Hamstick verticals with their mounting bracket would be a small dipole. It would be about half the usual size and thus could poke up a bit higher with less visual agitation for those whose self-appointed mission in life is harassing anyone who seems to be enjoying themselves.

Irvin Abbo, LA3CG, wrote in to say, "Fun to read about all those dBs in U.S. antennas." That is a funny statement until you think about it and then it becomes a sad indictment.

Some have written to say that my clues to company names have been too subtle and they don't get them. I've heard of one reader who has solved them all. The fact that he is a detec-



I HOPE THAT'S A SWIMMING POOL---SEEMS LIKE YOU GUYS ARE ALWAYS FOOLING AROUND WITH SOME KIND OF ANTENNA PROJECT

tive with a major city police department may have something to do with it. Many letters about a new antenna. One old-timer with an original two-letter call said, "It seems almost too good to be true!" That's a rather apt observation.

Lil sends her best to all and has an idea to pass along to those who insist on distorting technical terms that are understood by everyone else to mean something different. She says they should come up with new terms. As a suggestion she thinks "jars of marmalade" would be good. Usage could be like this: "Antenna A was four jars of marmalade better than antenna B. Antenna C was two-and-a-half jars of marmalade down from antenna D."

I see that the SGC company has an amplifier rated at 500 watts peak envelope power on SSB. They tell us that their unit "produces tremendous power—nearly as much as a 1kW amplifier."

I don't know about you but I hardly consider 500 watts to be "tremendous power" as that is about ⅔ of one horsepower. And I suggest a trip to the dictionary for anyone who writes that 500 is "nearly" as much as 1,000.

In CW mode, the amplifier (with a fan) will run 500 watts for an unlimited time. In AM mode the rating is "250 watts Carrier max." Aw, shucks. I really wanted something like this. But you can only run "250 watts Carrier max." I guess they mean carrier only with no sidebands. That means no modulation? Any clarification will be given equal space.

Bernie Peake, N4CR, is very pleased with that very small Bilal antenna on 40M. He says he gets lots of S-9 reports.

Rick Kissell, WB9GYT, said he donated copies of *AERIALS I* and *II* to the Milwaukee Public Library. Good man!

Mark Eddy, KN6PW, said, "Kurt — I'm often accused of being you. I never deny it." Gee, Mark, are you that old? Say, you must be one sharp cookie for them to think you are me. Or am I so swift that they think I am you?

I've said it before and I'll probably say it again but that Dale Hunt, WB6BYU/7, is really on the right track when it comes to antennas. In fact, he is one of the very few that I see who would be a worthy successor for writing this column when I finally croak.

Wayne, The Earl of Peterborough, keeps telling us that RF is bad for us and that it shortens our life span. I wish he had told me that back in the days that I was twisting the knobs of a BC-610. I would have asked for a transfer to the Infantry. Cal Turner, WI6S, in Arizona, wrote this, "I've had lots of FUN with your ideas about Budwig connectors and garbage can antennas.

"I've put on a number of demonstrations to ham friends showing the setups with patio chairs, dumpster, etc.

"With the aluminum ladder set-up I worked a Japanese maritime mobile. He was on a Japanese Coast Guard cutter off the coast of Japan. He never did quite believe me about my antenna. I worked him again the second day so he sent me two QSL cards.

"I worked a station in the state of Washington on 20M from two patio chairs in my wife's sewing room. He gave me a 5/9 report and we talked for about 30 minutes."

The Radio Society of Great Britain just came out with a new edition (sixth) of their superb *Radio Communication Handbook*. Naturally, Lil had to have one.

I quote from page 12.87 (regarding the Cubical Quad) "Claimed gains in excess of 6dB are at variance with the laws of nature."

Thus you can see that the double-digit gain claim made by one particular manufacturer for the four-element quad is empty nonsense which is called bosh and flapdoodle by the lady with whom I share a 30L-1.

(And it's back to the Batcave for another month. When the mystery man again emerges will another galloping gain miscreant be skewered? Tune in next month for another exciting adventure.) WR

Don Durk, KA1DWX
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Contest hints

In contesting, the strategy you decide to use will be a function of what you want to get out of the contest. If you are searching for new ones and have a modest-to-good station, then use packet. The pile-ups are larger but the band map of who's where is great! If you are QRP or cursed with condoitis, apartment-itis or other similar afflictions, it may be better to search around to find the rarer ones before they are discovered by the multitude. Your chance of getting through will be better.

Timing can be critical whether you are a 'lil pistol or a big gun. It is often easier to work the far away, weaker DXpeditions at or near the end of the contest simply because most of the guys and gals betwixt you and the 4S7 or IG9 have worked them and these DX guys are CQing away with no answers — a perfect slot for your smaller signal. This also holds true for the Caribbean/near Pacific DXpeditions who are deluged in the start of the contest or are busy with JAs or EUs and don't want to QSO you right away. Later on they will listen real closely for you!

Ride the prop! With a modest station you can run JAs or EUs while the propagation path is at or near peak. Study the charts or use a propagation program to assist you in this decision. Remember that it is really tough on 80 and 160 M with low power so don't be discouraged - on these bands even the big guns have trouble!

One great way to learn about contesting is to join a contest club. Check around at your local radio club or ask the active contesters near you whether they belong to a club, etc. Contest clubs need and want members small and large. The club scores are the aggregate of all members, so your 100 QSOs are important! You get the added benefit of being asked to visit a local multi op station - a truly eye opening experience and a wonder to behold during a contest! Several of the clubs even

have seminars a few times a year to help you improve your contest techniques. Our Yankee Clipper CC holds regular Contest Universities where one can learn from the Ph.D.s of the field (It really does mean "piled higher and deeper" in contesting!)

Spring is in the air and ARRL DX 'Test time is here once again. This is always a joy for us statesiders as the rest of the world works us, not themselves. Isn't spring grand?!

Late January 'tests

(See January *Worldradio* for full details)

•ARRL NOVICE ROUNDUP
- all authorized modes.
27 January 00:00-4 February 24:00
(Rpt+section or DXCC country)

•QRP ARCI NOVICE/TECH ROUNDUP(CW)
2 January 00:00-4 February 24:00
(RST/Sec/Name)Sign /N /T

•CQ WW 160 CW 'TEST
26 January 22:00-28 January 16:00
(RST+48 State/13 Prov/ Country)

•REF FRENCH CW 'TEST
27 January 06:00-28 January 18:00
(RST+NR)

•UBA SSB 'TEST(BELGIUM)
27 January 13:00-28 January 13:00
(RS+NR or Prov for ON stns)

February 'tests

•No. N. England (ME,NH,VT) CW/SSB Party
3 February 00:00-4 February 24:00
(RS(T)+nr or county for No.New Eng. Stns)

You may enter each of the 3 State Parties or 2 or all 3. Entry into 1, 2 or 3 automatically enters you in the No. New England QSO party. 24 hr max. Off for 6 hr minimum. Q 1x/band and mode. 160-10. CW 35 kHz up, SSB 25kHz up from bottom of General portion, N/T CW 25 kHz up, N/TSSB all 10 Meter N/T band. VHF-50.200, 144.200,146.55(146.49 and 146.69 VT). Score 1pt for SSB/FM,2 pts CW/digital. QSO club stns and get 5 pts for ea SSB/FM,10 pts for CW/digital. Thirty-six club stns plan to be active so if you need VT or ME here's your opportunity. Multiply score by total counties worked (16 ME, 10 NH, 14 VT) for No. N. Eng stns, mults are your state's counties + states + provinces + DXCC countries.Awards. ME- PortlandAWA, PO Box 1605, Portland ME 04104; NH - WB1ASL; VT-KE1BV.

•CLASSIC RADIO EXCHANGE (CQ CX)CW/SSB +AM!
4 February 19:00-5 February 04:00
(Name,RS(T), Rxcvr+Xmtr type -for homebrew, send final amp tube or transistor).

Q 1x each mode per band. QSO anyone, 80 -10. CW 60 kHz up, SSB 3880,7290,14280,21380 28320 + AM freqs. N/T 20 kHz up. Favored fqs-7060 + 3560.

Score- QSOs x (# of diff rcvrs and trnsmtrs on each mode per band + total states/provs/ countries per mode per band). Multiply this total by your classic multiplier i.e.- Total years old of rcvrs and trnsmtrs used. If xcvr multiply its age by two, if homebrew count 25 yrs unless older in which case use the actual construction date. Classic is 10 yrs or older but you don't need it to op in 'test. Certs. AA4RM or W8KGI/5.

•PACC DUTCH 'TEST
SSB+CW
10 FEBRUARY 12:00-11 February 12:00 (RS(T) + NR or prov for PA Stns)
Q PA/PB/PI stns only. Q only
1x per band not per mode! 160(CW only)-10. Score-1 pt per QSO x mults (1 per province per band). Provinces-GR,FR,DR,OV,GD,UT,NH,ZH,FL,ZL,NB and LB (12). Single op/multi op. Certs. PA3BFM

•SCHOOL CLUB ROUNDUP
12 February-16 February 13:00-01:00
Each day (RS(T)+Class I-individual (nonclub); C-non school club or multi op group; S-school club or group, including colleges or universities)+state or country 24 hr max. Off periods at least 30 mins. Q 1x only both CW (Packet or RTTY are CW) and phone. Score-Pts (1 pt for phone, 2 pts for CW) x mults (States+DXCC countries plus 2x(CClass QSOs) plus 5x(S Class QSOs) *QST*

•YL INT'L QSO PARTY SSB
16 February 00:01-18 February 23:59
(Name,RS,country,state or province, partners call, ISSB# if available) Non-members welcome!
Q 1x/band; Score-Pts (1 for non member; 3 for 2 way member Qs; 6 for 2 way member Qs w/ diff country) x mults(Must be members to be mults - 1 mult for each: QSO both DX/Stateside partner; Each YL/OM team member; Each U.S. state, Canadian province,DX country,VK call area, ZL district). Also 2 added mults if you use 250 watts or less for entire test. Single op// YL/OM team //DX/stateside partner. Ck 40 and 80 on the hr. Certificates. SASE for details. N4KNF.

•ARRL INT'L DX CW
17 February 00:00-18 FEBRUARY 24:00
(RST+ State/Prov;DX RST+Pwr)
W/VE Q DX. DX Q W/VE. 160-10 Meters. NO WARC BANDS. Q 1x per band. Score-Pts(W/VE 3 pts per DX QSO; DX 3 pts per W/VE QSO) X Mults(W/VE- DXCC countries per band exc. U.S. and Canada; DX-States exc. KL7 and KH6 and DC plus Provinces per band. Max 62 per band). /mm or /Aerom Qs count only for QSO pts not mults. Single op unassisted or single op assisted-A-All band: 1A QRP; 1B 150 or less; 1C > 150 w. 2 single band. B - single op assisted. C - multi op C1 - 1 xmtr; C2 - 2 xmtr; C3 - unlimited. Ck sheet for 500 or > Qs. Plaques. QST

•REF FRENCH SSB 'TEST
24 February 06:00-25 February 18:00

(RS+NR)

Q 1x/band, 80 -10. Work F stns; overseas territories and DA1/DA2. Score-pts (1 for own cont.; 3 for other cont.) x mults (French Depts, DA, DA2, F6REF/00, Each DOM-TOM **per band). F6ETI.**

•UBA CW 'TEST(BELGIUM)

24 February 13:00-25 February 13: 00 (RST+NR or PROV for ON Stns)

Prov-(AN,BT,HT,LB,LG,LU, NR, OV,WV)

Q 1/band 80 -10.Single op 1 band/ multiband; Multi 1 xmtr all band.; QRP 5 w = class B. Score - Pts (ON=10; other EU community members=3; others =1) x (Total # Belgian provinces + all ON prefixes+EU community members) .Re ck this - EU community members = CT/CU/DL/EA/EA6/EI/F/G/GD/GI/GJ/GM/GU/ GW/I/IS/LX/OZ/PA/SV/SV5/SV9/SY/TK/ZB2. ON4JG.

• CQ WW 160 SSB 'TEST

23 February 22:00-25 February 1600 (RST+48 State/13 Prov/ Country)

Score - Pts(2 for own country; 5 for diff country in same continent, 10 for different continent) x mults (states + provs+DXCC). Provinces are VO1, VO2, VE1-NS, VE1/VY2-PEI, VE2, VE3, VE4, VE5, VE6, VE7, VE8-NWT and VY1-YKN. CQ.

•RSGB 7 MHz CW 'TEST

24 February 15:00-25 February 09:00

(RST+NR; UK send 3 letter county code)

Q only UK stns. NA stns score 15 Pts/ QSO. Score - Pts x mults(UK counties). G3UFY

YLRL YL-OM contest

SSB: 1400 UTC 11 February-0200 UTC 13 February.

CW: 1400 UTC 25 February-0200 UTC 27 February.

Operating breaks must be shown in your log.

Eligibility: All licensed men and women operators worldwide are invited to participate.

Procedure: OMs call "CQ-YL" - YLs call "CQ-OM"

Operation: All bands may be used. No crossband, net or repeater contacts. On CW or SSB only one contact is permitted with each station on each band.

Exchange: Station calls; QSO numbers; RS(T)s; ARRL section/VE province/country. Entries in your log must also show: time, band, date, and transmitter power.

Scoring: (A) Phone and CW will be scored as separate contests. Submit separate logs for each contest.

(B) Score each band separately. One (1) point is earned for each station worked on each band. YLs count only OMs, OMs count only YL8. Add together the QSO points earned on each band.

(C) Multiply the number of QSO points by the total number of different ARRL/sections/VE provinces/countries worked.

(D) Each contestant using power output at all times of 100 watts or less on CW or 200 watts PEP or less on SSB multiply the score claimed in (C) by 1.5, the low power multiplier. Those not using low power are not entitled to power multiplier, and they are limited to 750 watts on CW and 1500 watts PEP on SSB.

Logs: All logs must show your ARRL section/VE province/country to qualify for awards. For each QSO, logs must show: call of the station worked; QSO number sent and received; RS(T) sent and received; ARRL section/VE province/country of station worked; band; time; and date. Logs must state the power used and the operating breaks taken. If you have 200 or more QSOs, submit a separate log for each band and submit a dupe sheet. Log photo copies are OK, but no carbon copies. Please type or print logs. Logs must be signed and must show score claimed. No logs will be returned. Submit separate logs for each contest.

All logs must be postmarked no later than 30 days after each contest ends.

Mail all logs to Carol Hugentober, K8DHK, 4441 Andreas Ave., Cincinnati, OH 45211.

Awards: First place phone YL: cup; OM: cup. First place CW YL: cup, OM: cup. The second and third YL and OM winners in each contest will receive certificates. The winner of the phone contest is eligible to win the CW cup. Certificates will be awarded to the high YL and OM phone and YL and OM CW winners of each US and VE call district and each country, provided there are at least ten valid contacts on the log.

Suggested Frequencies:

CW: 80 Meters—3.540 to 3.570; 40M—7.040 to 7.070, 20M—14.040 to 14.070; 15M—21.120 to 21.150; 10M—28.180 to 28. 210.

SSB: 80M—3.940 to 7.070; 40M—7.240 to 7.290; 20M—14.250 to 14. 280; 15M—21.380 to 21.410; 10M—28.280 to 28.410.

Note: Country band allocations differ. YLs should select appropriate frequencies for transmitting and receiving, especially on 40 and 80M. WR

PVC plumbing pipe as a handy frame

Bruce A. Epperson, KA9JXU

It always seems that by the time the budget is used to pay the everyday bills there is very little left over for fun. Being cheap, I like to have what I buy work as well as possible.

That is where the PVC plumbing comes in. I first used PVC pipe and fixtures to make a wire beam.

Then I used it to conceal a friend's multiband trap vertical. If my memory serves me right it was a 5BTV over which we placed a length of 4" pipe with a cap on top. No only did this serve to protect the antenna from the ravages of nature but it also kept the neighbors from knowing just what was really in my friend's front yard. They thought it was just a flagpole!

In addition to that I have used various sizes of PVC pipe to make verticals, Yagis, quads, loops, and other types of antennas for bands ranging from 20 Meters to 23 cm.

I used to use various pieces of wood but ran into the problems of water absorption, and the attendant warping-misshaping, weight and higher cost. PVC is very stable, easy to work with, fairly inexpensive, and has a host of fittings with which I have always succeeded in making the shape or arrangement that I wanted.

One of the beautiful things about PVC is that you do not have to glue it together until you are sure that your design is sound. You can leave a joint unglued, drill through both fitting and pipe when properly assembled and install a bolt or pin and have a joint that can be taken apart and put back together for portability and compactness. As the joints are a pretty tight fit in the first place, friction will do a good job of holding things, and the bolt will make sure Murphy doesn't get in the way.

If you have one of those neat antenna projects in mind but did not know how you were going to hold it all together, try PVC.—*Radioactivities*, Argonne ARC

hamfests February

California

The LIVERMORE ARC is sponsoring an Amateur Radio/Electronic/Computer Swap Meet on 4 February from 7 a.m to 12 noon at Las Positas College. Features include free parking and covered spaces at no additional charge. Admission is free. Sellers pay $10 space fee. Talk-in 147.045(+) from the west and 145.350(-) PL 100 Hz from the east. Contact Noel Anklam, KC6QZK; 510/447-3857 eves. or leave message days; 510/783-2803.

Georgia

The DALTON ARC, INC., will hold a hamfest on 24 February from 8 a.m. to 3 p.m. (setup Friday after lunch until 9 p.m. Saturday, 6 a.m.). Admission is $5. Call after 6 p.m. only for information or tables, K4FLG at 706/278-0630 or N4OTC at 706/673-2291. Talk-in on 145.23(-).

Iowa

The 25th annual DAVENPORT ARC hamfest will be 18 February from 7:30 a.m. to 3:30 p.m. (setup from noon to 6 p.m. on the 17th) at the QCCA Expo center in Rock Island, IL. Ample parking and handicapped accessible. Admission is $5 in advance, $6 at the door. Tables $12 in advance.For more information on tickets or table reservations, send an SASE to: Kent Williams, K9UQI, 4245 10th St., East Moline, IL 61244-4154. For information on VE exams, send an SASE to: Roger Franke, K9AYK, 2506 E. 29th Court, Davenport, IA 52803. Talk-in on the WØBXR 146.88(-) repeater.

Massachusetts

The ALGONQUIN ARC flea market will be held on 17 February from 10 a.m. at the Marlborough Middle School. Admission is $2. Dealer space is $12 (before 10 Feb) for tables and spaces. For further information contact Anne Weldon, KA1PON, P.O. Box 258, Marlborough, MA 01752; 508/481-4988 (before 9 p.m.).

Michigan

The LIVONIA ARC presents its 26th Annual Swap-n-Shop on 25 February from 8 a.m. to 3 p.m. at the Dearborn Civic Center. Amateur VE exam sessions. Reserved tables $15 plus advance admission $4; $5 at door. For information, send a 4" x 9" SASE, c/o Neil Coffin, WA8GWL, Livonia ARC, P.O. Box 2111, Livonia, MI 48151; 313/261-5486. Talk-in LARC repeater 145.35(-) and 146.52(S).

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THE CHERRYLAND ARC will sponsor their annual swap-n-shop on 17 February from 8 a.m. to 12 noon at the Immaculate Conception Middle School in Traverse. VE exams follow swap. For information, contact Joe, W8TVT at 616/947-8555 or Chuck Mellberg, W8SGR; 616/946-5312. Talk-in on 146.86(-).

Minnesota

The 15th annual MIDWINTER MADNESS will be held at National Sports Center, Blaine, MN. Exit #32 off 35W on 10 February, from 7:30 a.m. to 2:30 p.m. Admission is $7 at the door. Super buys on computers, software, hardware, components, peripherals, Amateur Radio equipment. For information: RARC, P.O. Box 22613, Robbinsdale, MN 55422 or call 612/537-1722.

New York

The ORANGE COUNTY ARC will hold a hamfest on 17 February from 9 a.m. to 3 p.m. at the John S. Burke Catholic High School in Goshen, New York. There will be VE sessions, tailgating, vendors, refreshments, and an ARES forum. Admission is $3. Contact Steve Voorman, KB2TRG at 914/496-8710. Talk-in on 146.76(-).

Ohio

The INTERCITY ARC, Inc. will hold the Mansfield Mid*Winter hamfest/computer show on 11 February from 7 a.m. at the Richland County Fairgrounds in Mansfield. Flea market in heated buildings. Admission is $4 in advance and $5 at the door. Tables $9 in advance and $12 at the door, if available. Advance ticket/table orders must be received and paid by 1 February. For additional information or advance tickets/tables, send SASE to: Pat Ackerman, N8YOB, 63 N. Illinois Ave., Mansfield, OH 44905; 419/589-7133 after 6 p.m. EST. Talk-in on 146.94(-).

•

The ARRL GREAT LAKES DIVISION CONVENTION will be held 24 and 25 February from 8:30 a.m. to 5 p.m. (both days) at the Cincinnati Gardens Exhibition Center, 2250 Seymour Ave. at Langdon Farm Road. Features include free parking, all indoors (drive-in unloading), ARRL officials, ham forums, ladies lounge, prizes and VE exams. Admission is $6 in advance, $8 at the door. Flea market tables (3 max) $20 each. For information, contact Stan Cohen, WD8QDQ, 2301 Royal Oak Court, Cincinnati, OH 45237; 513/531-1011.

Oregon

The SALEM REPEATER ASSOCIATION and OREGON COAST EMERGENCY REPEATER INC. will hold their 1996 Salem HamFair on 17 February from 9 a.m. to 4 p.m. at the Polk County Fairgrounds in Rickreal. Swap table setup 6-9 p.m. on 16 Feb, and 7 a.m. 17 Feb. Features include flea market, dealers and exhibits. Self-contained RV spaces available. Talk-in on the 146.86(-) repeater. For information, contact Evan Burroughs, N7IFJ, 503/585-5924.

Tennessee

The SHRINERS OF THE KERBELA AMATEUR RADIO SERVICE will sponsor a hamfest on 3 February from 8 a.m. to 4 p.m. at the Kerbela Shrine Temple in Knoxville. Features include FCC exams by WCARS-VEC, registrations until 9:30 a.m. Tables are $8 plus admission of $4; tailgating $3 plus admission of $4. Setup 4-9 p.m. on Friday and 5-8 a.m. Saturday. For VE exams send completed 610 form with check for $6.05 payable to WCARS-VEC, Ray Adams, N4BAQ, 5833 Clinton Hwy., Suite 203, Knoxville, TN 37912-2500; 423/688-7771. Smoking in designated area only. For more information, contact Paul Baird, KY4A, 1500 Coulter Shoals Circle, Lenoir City, TN 37772; 423/986-9562. Talk-in on 146.94(-).

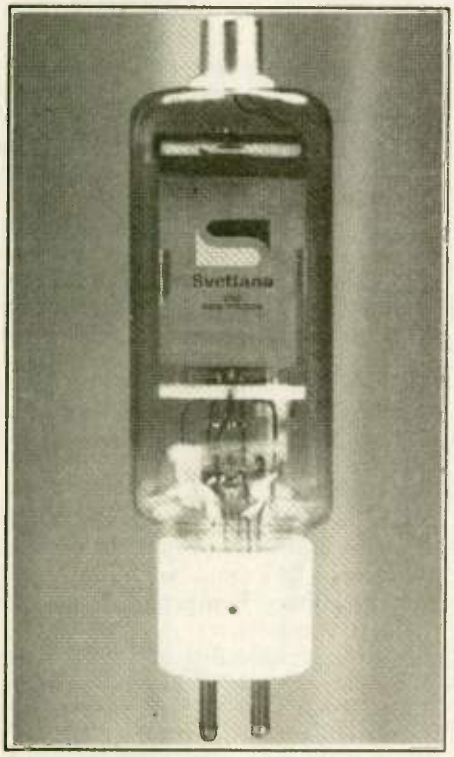
Vermont

The RADIO AMATEURS of NORTHERN VERMONT will hold their winter hamfest on 24 February from 8 a.m. to 3 p.m. at Milton High School, Route 7 in Milton, 5 miles north of I-89, exit 17. Features include flea market exhibits and refreshments. VE exams will be given at 9 a.m. and 2 p.m., commercial exams at 2 p.m. Admission is $3, free for those under 18 years. Tables are free, while they last. Call for large setups. Contact WB2JSJ at 802/879-6589. Talk-in on 145.15(-) repeater. WR

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

Svetlana™ 572B triode

The new Svetlana™ 572B is a high-mu power triode intended for use in class AB, class B, class C RF, and audio amplifiers.



The Svetlana 572B may be used as a direct drop-in replacement in equipment designed for the 811A. Reliability will be enhanced by the upgraded overload capability of the Svetlana 572B. The new Svetlana power tube features a massive graphite anode for high peak overload capability and a high average plate dissipation of 160 watts. The Svetlana 572B also features a low-loss, white ceramic base and a bonded, white ceramic plate cap thermal insulator for high-power RF transmitting tube capability. Temperature initiated getter material is permanently embedded in the surface of the rugged graphite anode for superior gas absorption. The improved getter system operates continuously at high temperature and is far more effective than receiving tube flash getters silvered on the glass envelopes of tubes made with receiving tube techniques. The Svetlana 572B envelope is fabricated from hard glass intended specifically for high-temperature operation of heavy-duty transmitting tubes.

A matching white ceramic socket, the Svetlana SK4A, and a matching plate cap, PC1A, is available.

High-quality fabrication and vacuum processing at high temperature enable Svetlana to manufacture the new 572B with consistent performance and extended life. Svetlana's manufacturing quality is backed by a generous manufacturer's warranty.

Contact Svetlana Electron Devices, Inc., at Svetlana Electron Devices, Inc., Headquarters, 8200 S. Memorial Parkway, Huntsville, AL 35802; 205/882-1344, fax 205/880-8077 to obtain free technical data on the new Svetlana 572B and a list of Svetlana tubes, for Amateur Radio.

CABLE-X-PERTS Catalog

CABLE-X-PERTS, INC., has a new catalog for 1996. This catalog provides useful technical information on coax cable and related products, prices included. Complete with attenuation chart covering all of our coax cables. Details on the Times Microwave LMR Low Loss Coax Series and Andrews Heliax® (Hard-Line). Detailed pictures on UHF, "N," BNC, SMA connectors and ADAPTERS too. Baluns, Ladder-Loc, end insulators, G5RV antenna kits, and other related dipole antenna parts. To receive the catalog you must mail a business size self-addressed stamped envelope (SASE) to: CABLE-EXPERTS, Inc., 113 McHenry Rd., Suite 240, Buffalo Grove, IL 60089-1797 or a catalog goes out with orders placed. In addition, NEW for 1996, Alaska and Hawaii have been added to the 800 service. Coming soon . . . Canada. Effective 20 January 1996, technical information and fax number area code will be 847. E-mail: cxp@ix.netcom. com

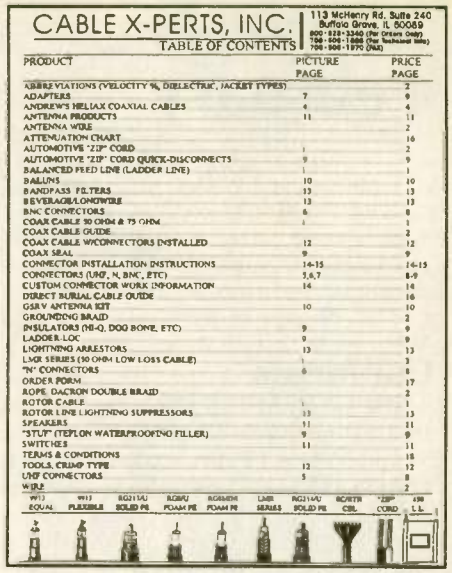

CABLE X-PERTS, INC.
113 McHenry Rd. Suite 240
Buffalo Grove, IL 60089
800-828-3340 (For Orders Only)
708-506-1888 (For Technical Info)
708-506-1979 (FAX)

TABLE OF CONTENTS

Antenna insulators

The Wireman, Inc. is working in conjunction with a group of Amateur Radio operators who are engaged in a fund raising project for their local church. The hams have been able to obtain high-performance acrylic which is enhanced with natural minerals as industrial surplus, and are using this high quality material to produce some useful products for the radio amateur.

The group is machining the acrylic into insulators (both center and end types) in several sizes, with new and different ideas on the drawing board. This acrylic has excellent UV resistance and impressive electrical specifications.

A pair of basic, 4" end insulators are priced at $1.50, with other models at similar prices. Custom designs can be arranged by special order. Half of all proceeds go to the church ministry with the balance covering materials and expenses.

According to The Wireman, "No better hardware is available at any price, so if you are putting together another dipole, do yourself a favor and help out a good cause at the same time."

For more information, write The Wireman, Inc. at 261 Pittman Rd., Landrum, SC 29356 or call 803/895-4195; for orders 800/433-9473.

SKYCOM 2.0 software

The *New Shortwave Propagation Handbook* states:

"Enhancements notwithstanding, the major problem encountered in the use of current HF prediction programs is that users have a wide range of experience and computer skills, and so, many find complicated, technically oriented software intimidating (so much so that they shy away from using it). . . . next-generation

HF propagation prediction programs will be designed to achieve a high level of performance and productivity, *regardless of the experience or motivation of the user."*

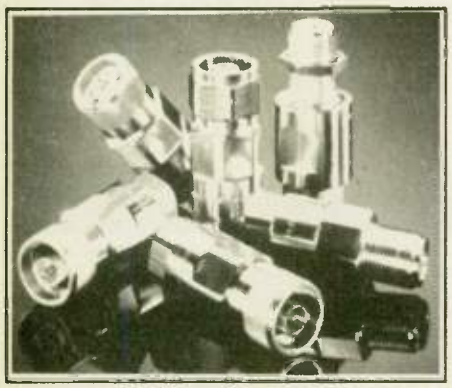
SKYCOM 2.0 has been created to solve this problem. SKYCOM 2.0 enables ham radio operators to quickly produce practical, plain-language predictions of the best times and frequencies to use to contact locations of their choosing without having to read complex graphs, charts, or tables. Users do not need an in-depth understanding of the physics of HF propagation in order to get the information they want.

Using an enhanced algorithm based upon the ionospheric model developed by the Naval Ocean Systems Center (NOSC), SKYCOM also takes into account the specific capabilities of the user's equipment to compute the total path loss. SKYCOM efficiently identifies the key windows of opportunity for contact with any location chosen by the user and executes very quickly. SKYCOM's ease of use is further enhanced by the familiar Windows 3.1/Windows 95 environment, intuitive user interface, and helpful, step-by-step documentation.

SKYCOM 2.0 retails for $59.95 and can be purchased from ham radio specialty stores nationwide or ordered directly from Fuentez Systems Concepts: 11781 Lee Jackson Hwy, Suite 700, Fairfax, VA 22033 or by calling 800/989-1447 (8 a.m. to 5 p.m. EST).

Self-flaring connectors

Andrew Corporation announces the availability of self-flaring Type N connectors for both ½-inch foam and ½-inch superflexible foam HELIAX® cables. These connectors significantly reduce in-



stallation time and costs in comparison with tab-flare connectors. Fewer tools are required to install them due to a unique patented Andrew design. This design enables an installer to automatically flare the outer conductor when the body is threaded together, thus producing a more consistent flare and ensuring superior electrical performance.

These connectors are ideal for a wide range of applications.

Both solder and captivated (solderless) versions are available. The solderless connectors feature a captivated inner contact that eliminates the need for soldering equipment. This design allows for optimum VSWR as the inner contact is captivated at a precise pin depth.

For further information on self-flaring Type N connectors from Andrew, contact the Andrew customer support center at 800/255-1479, ext. 93, and request Bulletin 3615 and M111C or write: Andrew Corporation, 10500 W. 153rd St., Orland Park, IL 60462; 708/349-3300, fax 708/349-5222.

CQ-5M antenna mount

COMET Antenna has designed a new "quick-disconnect" mobile antenna mount; Model CQ-5M.

The CQ-5M consists of two separate sections. A trunk mount base that is attached to the trunk edge with four set screws, and an antenna mount base that fits inside the trunk mount base. Sliding a lever wedges the antenna mount base securely in place.

When removing the antenna for safe storage, to use a car wash, or for temporary theft protection, simply slide the lever to unlock the antenna mount base. The antenna is then locked inside the trunk.

COMET's 17-foot, deluxe coax cable assembly is included with the CQ-5M. The first 12 inches of coax is RG-188A/U style, allowing easy entry into the trunk, without causing cable damage or starting a water leak. The balance of the coax is double shielded, low loss, with gold-plated connectors.

Two offset washers rotate around the antenna connector to adjust the antenna to vertical position. The bottom of the trunk mount base is rubber-coated to prevent damage to the vehicle's paint. It has a wide footprint to support large antennas. There are two versions available; CQ-5M has an SO-239 antenna connector, and a PL-259 transceiver connector. CQ-5N has N-type connectors. Contact your favorite amateur dealer. List price $66.95. For more information on COMET products, and a complete catalog, contact NCG Company, 1275 North Grove St., Anaheim, CA 92806; 714/630-4541 or fax 714/630-7024.

New catalog from Mouser

Mouser Electronics' updated, 324-page catalog contains over 59,000 selections from more than 120 of today's top quality manufacturers. The New Products section features the most recent additions from Magnecraft, Crydom, Cree, JRC and AAVID. They have also expanded their line of quality components from such top manufacturers as AMP, Keystone, Xicon, Phihong, 3M and Augusta.

Mouser's constantly growing line of electronic components also includes NEC, ebm/Papst, Littlefuse, Belden, Switchcraft, SGS Thomson, QT Optoelectronics and dozens more. Mouser provides same-day shipping on all orders. To obtain your free copy of Mouser's new catalog call 800/992-9943 today or write Mouser Electronics, 958 N. Main St., Mansfield, TX 76063; 817/483-4422 or 800/992-9943. **WR**

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 May, please have the information to us by mid-January.

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

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 of a person to contact for further information.

w/i pref. = w/i preferred to p/r
w/i = walk-in only

Date	City	Contact	Notes
Arizona			
3/09/96	Tucson	Joe, K7OPX 520/886-7217	
Arkansas			
3/16/96	Gassville	Phil, AB5ZU 501/425-7406	p/r pref.
California			
3/28/96	Colton	Harold, AB6RN 909/825-7136 days or 909/685-6073 eves	
3/30/96	Culver City	Scott, K6PYP 310/459-0337 or Dave N3BKV 818/559-2572	p/r pref.
3/30/96	Fairfield	Dick, AB6EY 916/791-0268	w/i pref.
3/16/96	Oakhurst	Ken, K6LFR 209/683-8245	
3/30/96	Pomona	Don, WA6HC 909/949-0059	p/r
3/06/96	Sacramento	Jim, AB6OP 916/334-4887 or Larry, KD6OLN 916/361-2476	p/r pref.
3/16/96	Sacramento	Lyle, AA6DJ 916/483-3293 or Phil, N6ZVA 916/338-3223	w/i
3/09/96	San Pedro	Elvin, N6DYZ 310/325-2965	p/r pref.
3/13/96	Santa Ana	Red Cross, 714/835-5381 x140	w/i
3/09/96	Santa Barb.	Phil, KG6KB 805/962-8957	p/r pref.
3/16/96	Stockton	Mark, W6DKI 209/465-7496	w/i pref.
Florida			
3/16/96	Melbourne	Bill, WB9IVR 407/724-6183	p/r pref.
Georgia			
3/16/96	Marietta	Joanne, AC4JQ 770/955-3171	w/i
3/04/96	Marietta	Delaine, KM4FV 770/993-9758	w/i
Idaho			
3/09/96	Boise	Lem, W7JMH 208/343-9153	p/r pref.
Illinois			
3/16/96	Loves Park	Dennis, W9SS 815/877-6768	p/r pref.
3/09/96	Oak Forest	David, NF9N 708/448-0580	p/r pref.
3/28/96	Villa Park	Lyle, WB7EED 708/325-5694	w/i pref.
Maryland			
3/26/96	Glen Burnie	Jerry, NU3D 410/761-1423	p/r pref.
Massachusetts			
3/22/96	Holyoke	Dave, N1MHP 413/592-4978	w/i
3/16/96	Melrose	Scott, WB1F 617/665-7654	p/r pref.
New Jersey			
3/09/96	Cranford	24 hour hot-line 201/377-4790	w/i pref.
3/16/96	Pennington	Don, AA2F 609/737-1723	p/r pref.
3/21/96	Bellmawr	Bill, NT2N 609/933-1500	w/i pref.
3/16/96	Ramsey	10-70 Rptr Assn. Hotline 201/445-5172	p/r pref.
3/13/96	Ft. Monmouth	Gerry, WB2GYS 908/532-5354	p/r pref.
New York			
3/16/96	Long Island	Les, AA2FJ 516/364-0030 or 516/922-0947	p/r pref.
3/12/96	Long Island	Bob, W2ILP 516/499-2214	w/i pref.
3/03/96	Yonkers	Emily, AC2V 914/237-5589	p/r pref.
Ohio			
3/02/96	Cincinnati	Herb, WA8PBW 513/891-7556	p/r pref.
3/21/96	Youngstown	Jerry, N8IRL 216/534-1394	p/r pref.
Oregon			
3/20/96	Florence	Hal, N7NNA 541/997-2323 or Bob, KH7VA 541/997-1222	p/r pref.
Pennsylvania			
3/02/96	Erie	Norma, W3CG 814/665-9124	p/r pref.
Rhode Island			
3/10/96	E. Providence	Bob, AA1CT 401/438-0935	p/r pref.
3/14/96	Providence	Al, NN1U 401/231-9156 or Judy 401/454-6848	p/r pref.
South Dakota			
3/09/96	Rapid City	Frank, NUØF 605/348-6564	p/r pref.
Texas			
3/16/96	Austin	Jim, AB5EK 512/327-6184	w/i pref.
3/12/96	Houston	Harold, ND5F 713/464-9044	p/r pref.
Virginia			
3/23/96	Glouster	Harry, N4THN 804/642-3517	p/r pref.
3/02/96	Yorktown	Ed, W4RTZ 804/898-8031	p/r pref.
Washington			
3/16/96	Long Beach	Jim, NF7D 360/665-5522	p/r pref.
3/09/96	Port Angeles	Athan, N1PYO or Nancy, N1RAG 360/928-9588	p/r pref.

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***WORLDRADIO* ON CASSETTES** for the blind. For information, contact TOM CARTEN, K1PZU, 1602-Y King's College, Wilkes-Barre, PA, 18711. F296

CERTIFICATE FOR PROVEN TWO-WAY RADIO CONTACTS with amateurs in all 10 USA call areas. Award suitable to frame and proven achievements added on request. Send SASE to W6LS, 45527 3rd St. East, Lancaster, CA 93535-1802 to get data sheet. F296

CODE PROFICIENCY DRILLS are transmitted from WB3IVO Brass Pounders ARC each Saturday, Sunday, Monday and Thursday on 7040 kHz, starting 2000Z, each Tuesday and Friday on 14060 kHz, starting at 2000Z. Speeds range 20-60 wpm. F296

EDITING A CLUB PAPER? Need one for your club? Interested in Amateur Radio public relations? Need some help? Amateur Radio News Service would like to hear from you. For info write PAM MYERS, N8IAK, 510 W. Harrison, Alliance, OH 44601. F296

AUTO-CALL MAGAZINE, official journal of the Foundation For Amateur Radio, a federation of over 80 clubs in the greater Baltimore/Washington DC area. Great coverage of FCC, ARRL, VEC, Public Service and club activities in the area. A must for those even passing through the area. For a sample copy write FOUNDATION FOR AMATEUR RADIO, P.O. Box 7612, Falls Church, VA 22046-7612. F296

WANTED REPLY COUPONS of all types, IRCs & others. Buy, sell, trade. JIM NOLL, P.O. Box 3410, Escondido, CA 92033. 295-296

HAMS — DO YOU NEED COMPUTER PRINTER ribbons? Lowest prices. Color or black. State your needs. Free information. HARCLY, P.O. Box 830, Coquille, OR 97423. 595-496

PACKET RADIO. Join TAPR, connect with the largest packet/digital group in the U.S. Creators of the TNC-2 standard. Benefits: newsletter, software, discount on kits/publications. $15/year US, $18 Can/Mex, $25 elsewhere. Visa/MC. When joining, mention *Worldradio*, receive TAPR's new book, "Packet Radio: What? Why? How?" ($9 value) Free! 817/383-0000, Mail: 8987-309 E. Tanque Verde Rd. #337, Tucson, AZ 85749-9399. F296

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ADVERTISERS' INDEX

Defying the laws of gravity

Unlucky November 13

Norm Brooks, K6FO

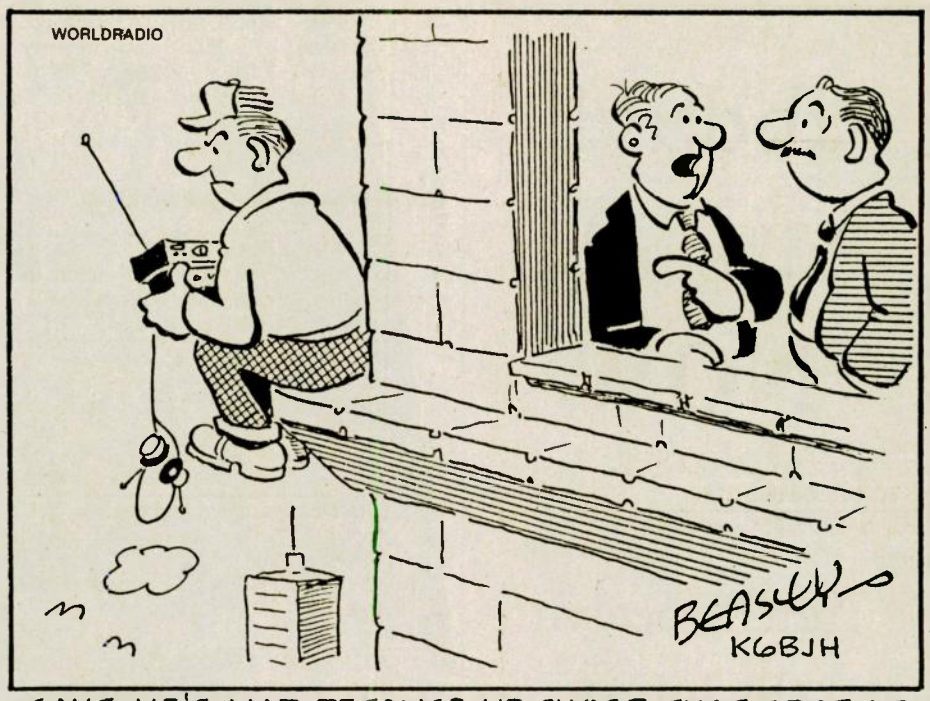
If you're looking for a place to do some serious thinking, try a hospital bed. How do I know? Because I just got out of one. How did I get there? Let me tell you about it.

Monday, November 13, 1995 was a nice, sunny day in Sacramento, California. It was the kind of day that makes you want to go out in the yard and fix things. I got out the hose and washed down the top part of my driveway, which is always in the shade. Some mildew had blackened it so I poured on some chlorine bleach which brightened it a lot. My neighbor had borrowed my ladder to clean her gutters, and had just returned it. Why not get up there and hose out the gutters, since the hose and ladder are at hand?

My 20' aluminum extension ladder has little feet and I made sure they were turned properly toward the concrete drive. While doing this, I noted that the chlorine and water on the concrete were slippery. This should have been a danger signal to me but it didn't register as such. Up onto the roof with the hose in tow, I hosed out the gutters, removing the trash that came from the nearby redwood tree.

Finished, I started to come down. I walked to the roof edge, where the ladder was propped. I reached for the ladder to hold one of the sides as I stepped onto a rung. At the same time the ladder slipped down away from me and went crashing down nine feet to the driveway below. There I was in mid-air, trying to step onto a rung of a non-existent ladder.

As gravity took over I realized I was falling, and the gutter suddenly appeared before my eyes. I grabbed it with both hands. I couldn't hang on, but it swung my body around so that I wasn't falling head first. I landed on the concrete and may have been "out" for a few seconds. When I realized where I was, and the predicament I was in, to get help, I would have to somehow crawl to the metal garage door and bang on it with an "SOS" to get Rita's attention. She was in the kitchen at the time. Fortunately, I didn't have to do this because my neighbor from up the street drove by at that moment, saw me, and ran to the house to alert Rita.



SAYS HE'S MAD BECAUSE HE CHOSE THAT SPOT AS A "FIELD DAY" SITE, AND NONE OF THE CLUB MEMBERS SHOWED UP

They called 911, and it seemed like the fire truck with paramedics was there almost immediately. They put a collar on me, strapped me to a board to immobilize me for a ride to Mercy San Juan Hospital.

At the hospital, a resident MD carefully prodded and questioned me step by step as he loosened me from the board. X-rays of my legs, hips and spine showed that I fractured my left femur, just where it goes into the hip ball joint. Tuesday morning, Dr. Calvin Nash, a top orthopedic surgeon, drilled a hole in the ball part of the femur, inserted a bolt with an expanding head, bolted a plate to it, then used several screws to fasten the femur to the plate. Now, it's a matter of healing and exercising the muscles of the left thigh so they will work again. I have 14 exercises to do, and some of them are torture!

Back to my opening remark about serious thinking. Anyone who says "I know how you feel" is just blowing hot air unless he/she has actually lived through the agony of lying helpless and dependent on others just to move his/her carcass around. We don't realize how agile we are in moving our bodies around until we lose that ability. Now that I am living through the torture of making muscles work again, I have a different attitude toward that football player they carry off the field. I wonder if the torture he will experience in getting that injury corrected is worth the big bucks he makes?

My physical therapist says that 70% of the patients he visits live alone. Alone and crippled! While I am hobbling around the house with a walker, my dear wife Rita, without a whimper, even though she has extreme arthritis, is overloaded with chores that I would do if I could. Somehow I am going to make it up to her. And my heart truly goes out to people who live alone in that predicament.

If I were going to work on a radio or appliance that had high voltages, I would certainly turn off the power before I would touch it. High voltage is dangerous, and I respect it. Yet, there I was on the roof, walking casually near the edge and I didn't take any special precautions to protect myself from an equally dangerous force called GRAVITY. And you can't turn off gravity! WR

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JOTA at Louisville

Bill Pasternak, WA6ITF

A very special station was on the air during this last fall's Jamboree-on-the-air scouting extravaganza. What made this station different was that it was one of the few where the scouts setting it up and operating would be female.

Sixteen-year-old Allison Zettwoch, KD4CKP, is the Girl Scout who spearheaded the operation as well as a Youth Forum at a recent Louisville hamfest. According to Allison, both events went very well. In fact, with 24 youngsters and 8 adults it was the largest turnout of any forum at the hamfest.

Allison Zettwoch, KD4CKP, and Boy Scout Troop 262 at Camp Crooked Creek near Louisville, Kentucky.

Allison Zettwoch, KD4CKP, makes some early morning contacts . . . it was cold!

JOTA went even better, says Allison. She and her associates set up under a walled pavilion at Camp Crooked Creek just outside of Louisville. Allison reports that close to 50 people passed through to see what was going on. One girl got the ham radio bug. She stayed from ten in the morning to nine that night and provided a lot of assistance to the operators. Allison thinks that another new ham will result. They also hosted a troop of Boy Scouts who came to observe and participate in JOTA.

The Louisville Girl Scout station made numerous contacts, nationwide, including several with other Jamboree-on-the-air operations. WR

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